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Original Communications.

DISSECTING ANEURYSM OF THE AORTA AND PULMONARY ARTERY FOLLOWING RUP-TURE OF THE ARCH OF THE AORTA.*

By LAWRASON BROWN, M. D., Saranac Lake, N. Y.

This case is reported on account of the unusual course taken by the blood after rupture of the

The patient presented himself for examination October I, 1907, complaining of pulmonary tuberculosis. He was a male, fifty-four years of age, of small stature but wiry.

a male, fifty-four years of age, of small stature but wiry, and by profession a lawyer.

Family History: His father died at the age of eighty-six from apoplexy, mother died at seventy-three from chronic Bright's disease associated with arteriosclerosis, one sister died at sixty, apoplexy; one brother at fifty-one of Bright's disease. One sister died at childbirth.

Personal History: The patient, until the present illness Personal History: The patient, until the present lines, had always been well and strong. He was a hard and active worker with a large law practice. No note in regard to syphilis was obtained for the reason that the patient was always accompanied by his wife, except on one or two occasions when this point was overlooked. He was undoubtedly exposed in his early life. He used alcohol controlled the strong process of the strong patients.

stantly, but in moderation.

Present illness: The patient began to run down, lose weight and strength three or four years ago. After a trip weight and strength three or four years ago. After a trip to Atlantic City, however, he was greatly improved. He had had a slight hacking cough for eighteen years, which he had attributed in part to tobacco, which he had used freely. He had had some elevation of temperature at times for several months previously to coming to the Adirondacks, and for a few weeks the temperature had ranged from 99° to 703° F. During this acute attack cough and expectoration had increased, in which his physician found "tubercle bacilli." He also had night sweats, but no pleurisy, no shortness of breath, and no hæmoptysis. He had no pain in the throat nor hoarseness. His appetite was good

Status Præsens: October 1, 1907, 2 p. m. Weight 106 (normal 112), height 5 feet 23/4 inches, temperature 97° F., pulse 100, respirations 24. General condition poor. Slightly anæmic appearance. Radial arteries thickened, the examination of the heart, except for accentuation of the second

pulmonic sound, negative.

Lungs: Right: slight dulness to the third vetrebral spine, good vesicular murmur, fine râles to the clavicle and the third vertebral spine on cough. Left: the side much contracted, the vocal fremitus increased, some dulness over the entire back. The vocal resonance was increased. There was bronchovesicular breathing to the clavicle. Coarse rales were heard in the outer fourth and fifth interspaces, and from the sixth vertebral spine to the base. A few fine râles were present at the base in front.

The sputum was examined on three separate occasions and no tubercle bacilli were found. The urine was

From this time to December 4th the patient was seen frequently and gained ten pounds. His temperature was

95° or 97° F., his pulse 100 to 108, his respirations 26 to 30. December 1st the patient spat blood several times. The actual source of the blood was not determined, but about actual source of the blood was not determined, but about this time the patient spent two days in bed with slightly elevated temperature, and while in bed spat blood once. He alco complained of a little pain in the right lower chest. On January 16th the patient had an attack of phlebitis in On January 16th the patient had an attack of phlebitis in the left leg, which was swollen, painful, and ordematous. Under rest, in bed, ice bag, bandaging, and massage he made a good recovery. He steadily improved and when examined on February 11th it was noted that possibly there were a few fine râles above the right clavicle. On the left there was the slightest dulness, and the breathing was slightly distant on the back. There were a few fine râles at the very base on cough. At this time the patient weighed six pounds more than his previous maximum.

On February 17, 1008 about 8 a m while the patient

weighed six pounds more than his previous maximum. On February 17, 1008, about 8 a. m., while the patient was eating his breakfast, he felt a sharp pain at the base of his neck and fell off his chair, but recovered himself, sat down again, and then fell forward unconscious on the floor. Up to this attack the patient had been feeling very well; only a few days before he had been dancing with a chair about the parler of his hotel, and said that he had not felt so well for a long time. He remained unconscious for about one half hour, and then gradually regained consciousness and vomited his breakfast and other fluid in large quantities, a quart at a time. During this period of sciousness and vomited his breakfast and other fluid in large quantities, a quart at a time. During this period of unconsciousness the patient had an involuntary movement of the bowels. While the sounds of the heart could not be heard the pulse could be felt, but was considerably weaker on the right side. The patient gradually recovered but was kept in bed, though he did not see why he should have to stay there. When seen about 6 p. m. he was lying in bed on his right side, but experienced no difficulty when he turned on his left. He looked well, his color was good, no cyanosis present. There were bruises on his forehead and on the top of his head from his fall. The left pupil was somewhat larger than the right; both reacted to light and accommodation. There was no sign of paralysis of the face or rest of the body, nor had there been at any time. The right jugular was considerably more prominent than the right jugular was considerably more prominent than the left. The pulse in the right wrist was weaker than in the left, but was weak on both sides; thickening of the arteries had been noticed. The temperature was normal, and the pulse was not rapid.

pulse was not rapid. Examination of the lungs showed the breathing was harsher on the right, with slightly increased vocal resonance over the front. The back was not examined. Heart: As the light was poor the visible pulsation was not looked for, but the pulsation was felt both to the right.

not looked for, but the pulsation was felt both to the right and left of the sternium, but very weak. There was no thrill. On percussion the dulness extended about midway between the sternal border and the nipple line on the right and to the same distance on the left. The sounds were clear, not accentuated nor loud, but heard just as loud, if not lounder, on the right than on the left.

Both the plantar and the knee reflexes were normal. The grip in the patient's right hand was weaker than in the left.

From this time on the patient rested comfortably until about 1:30 a. m. (February 18th), when he had severe dyspnæa, his eyes rolled toward the left, he complained of a burning in his throat, clutched at his throat, and tried to get out of bed. He was restrained, and in a few moments, while conscious, died. No pulse could be felt during the

'Read before the American Climatological Association

Post mortem examination was made at 10 a, m. Body of well nourished man. Several bruises on head. Slight hypostatic congestion of the skin on back. Well marked rigor mortis. Muscles normal in color. Panniculus fair thickness.

On opening the abdomen the bowels were slightly distended, but otherwise normal. Peritonæum normal. The cartilages were partly ossified. The heart was found to lie largely under the sternum, and about the heart was a clot



Fig. 1.—Anterior view of heart, showing greatly enlarged aorta and blood about pulmonary artery.

of blood from three to six or seven millmetres in thickness. The patient had been embalmed before the autopsy and the blood in the pericardium had apparently been partly coagulated by the embalming fluid. The aorta was considerably enlarged and very black in appearance. The pulmonary artery was much smaller, but also ance. The pulmonary artery was much smaller, but also very black. On opening the aorta, at a distance of 2.5 cm. above the aortic valve and on the lesser curvature was found a semilunar rent (with the upper semicircular flap well curved away from the heart) of the intima and media. The greatest distance between these two flaps was I cm. This was covered in part by a thrombus. The blood had dissected away the adventitia to the base of the heart on both aorta and pulmonary artery and it extended in the opposite direction along the pulmonary artery a considerable distance into the lungs, so that on separating the lobes of the right lung the extravasated blood could readily be seen under the pleura about the base. It also extended into the left lung, but to a lesser extent. Along the aorta it extended beyond the first or second pair of intercostal arteries. The thickest portion was opposite the rent and on the side of the arch near the pulmonary artery, which was much narrowed by the extravasated blood. A small ulcerated area was seen over this portion, where the blood had probably leaked into the pericardium. The heart was found firmly contracted, both auricle and ventricle, and contained very little blood (due possibly to the embalming contained very little blood (due possibly to the embalming process). The valves were somewhat thickened but apparently functioned perfectly. On the endocardium were seen several yellow patches of atheroma. The aorta contained a number of atheromatous patches, and in the transverse portion of the arch there was one small puckered area which somewhat suggested a sear, and several of these areas were seen in the descending aorta. The vessels

from the arch were the right innominate and the left common carotid, the left subclavian and the left vertebral. The rent extended diagonally across the arch, ending at the opening of the left common carotid. The heart was considerably hypertrophied. The coronary vessels showed marked tortuosity and atheromatous changes, but no embolus. The lungs presented a few adhesions at the left base and the anterior edge of the right middle lobe. They were comparatively free from blood and contained besides slight puckering at the apices little or no evidence of tuberculosis.

The liver was somewhat enlarged. The spleen was was slightly enlarged. The kidneys were normal except for a sear left by an old infarct on the right. The brain was not examined. The left iliac vessels were normal, and

Anatomical Diagnosis: Dissecting aneurysm of the transverse portion of the aorta with rupture into the pericardium. A marked arterial degeneration of the aorta.

Through the kindness of Dr. Samuel M. Brickner, Dr. F. S.

Through the kindness of Dr. Samuel M. Brickner, Dr. F. S. Mandelbaum examined microscopically specimens from the liver, aorta, and puckered area in the lung. "The aorta showed a chronic endarteritis with fatty changes and ulceration—the usual picture in such cases—and the liver showed chronic congestion with secondary atrophy of the liver cells. There was nothing pointing to lues." The lung showed no tuberculous changes.

Among the points of interest in this case is the observation of tubercle bacilli in the sputum by the physician who attended him during his acute aftack, probably a nontuberculous bronchopneumonia



I A period new of reacts and at through media and account and blood clot between media and adventura. The entropy is readily seen.

which cleared up rapidly after his arrival in the Adirondacks. The patient had no evidence of any tuberculous lesion in the lungs. Another point of interest is the fact that the usual course of the blood along the thoracic and abdominal aorta was probably interfered with by the scars previously mentioned. This probably forced the blood toward the

heart and along the pulmonary artery. Why it pursued this course instead of following the vessels of the neck is difficult to state. It is difficult also to explain the first period of unconsciousness, and the immediate cause of death was not determined, as the amount of blood in the pericardium was not large. Owing to the short time in which the



Fig. 3.—Right lung, showing blood lying along arterial vessels and under pleura.

autopsy had to be made it was impossible to open the brain, and the thoracic organs were removed in toto. Shortly after the period of unconsciousness, the physician who was called in in the emergency made a diagnosis from the large quantity of fluid vomited of acute dilatation of the stomach. Later in the day, when the patient was very much improved, it was readily seen that the heart dulness was displaced and there was pressure upon the arch. Aneuryism was suggested, but on account of the recent phlebitis a diagnosis of embolism of one of the large vessels of the lung seemed most probable.

THE RELATION OF LOCOMOTOR ATAXIA AND PARESIS.*

By J. RAMSAY HUNT, M. D.,

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Chief of the Neurological China (vol. Inserticus in Netvous Inseases in the Consul University Medical College, Neurologist to the City and the Eabus- Hospitals

In the whole chapter of locomotor ataxia there is no question of greater importance than the relation which this affection bears to the general

*Discussion on Locomotor Maxia, it the meeting of the Medical Association of the Greater City of New York, Merch 19, 19-8.

paralysis of the insane. The importance of this relation is not merely a clinical one, but has a much deeper significance as bearing upon the underlying nature and ætiology of the two diseases. In the present communication there will be no discussion of the symptomatology of tabes or of paresis. My remarks will be confined to the combinations of the two diseases and the nature and significance of the so called "taboparesis." When they occur together is it to be regarded as a mere coincidence or complication, or are the two affections essentially the same in nature, differing only in their localization?

As is well known, tabes dorsalis is a disease characterized by degenerative changes in the posterior roots and posterior columns of the spinal cord. An antecedent syphilis is now generally regarded as the essential ætiological factor in the production of this degeneration (variously estimated from fifty to ninety per cent. of the cases). This is not syphilis in the ordinary acceptation of the term; but presumably a toxic state following in its wake, the so

called parasyphilis or metasyphilis.

Paresis, on the other hand, is a degenerative affection of the cerebral cortex, a degeneration of the association and projection neurones of the brain. It bears the same ætiological relation to antecedent syphilis as does tabes (according to Mendel occurring in seventy-five per cent. of the cases). This relation to syphilis constitutes an important bond of union between these two affections, which are so frequently found associated. Indeed, so close has this relation appeared to Moebius that he has termed paresis the "tabes of the brain," and no less an authority than Fournier has said of tabes that it is not an affection of the spinal cord alone, but one of the cerebrospinal axis.

The Combination Form of Tabes and Paresis (Taboparesis).-The clinical course of events in the development of taboparesis may be as follows: Symptoms of locomotor ataxia may appear first, this affection running its usual course, the symptoms of paresis supervening. Such paretic indications may develop within a few months, or may not appear until after the lapse of many years. In rare instances as long a period as twenty years has elapsed between the onset of the tabes and the first symptoms of dementia paralytica. On the other hand, the case may begin as one of paresis, the tabetic symptoms developing subsequently. In not a few of the cases paresis and tabes begin simultaneously and run their course together. The importance of tabetic degenerations in the course of general paresis was first pointed out by Westphal in 1860. This combination, the taboparesis, occurs so frequently that it cannot be regarded as an accidental one, or as a mere coincidence. Nageotte found that two thirds of his cases of paresis presented symptoms of locomotor ataxia. Shaffer found the same complication in three fourths of his cases. Binswanger, who is somewhat stricter in his interpretation of what constitutes a tabes occurring in the course of paresis, records the complication in one fifth of his cases. I would emphasize the fact that these statistics are not based upon tabetics who were attacked with paresis, but refer to cases of paresis in which symptoms of locomotor ataxia are present. The proportion of cases of tabetics developing paresis is certainly very much In the clinic for nervous diseases of the Cornell University Medical College, under the direction of Professor C. L. Dana, there have been treated during the past six years 164 cases of locomotor ataxia; of this number sixteen only presented the mental or

somatic symptoms of general paresis.

Clinical Types of Taboparesis.—In order to show the numerous varieties and manifold clinical combinations which may be presented by the union of tabes and paresis, I will mention a series of clinical groups as outlined by Nageotte. It will be seen that these furnish nearly every possible transition and combination, from the simple uncomplicated tabes to uncomplicated paresis. Simple tabes; tabes with slight psychical disturbances; tabes with signs of incipient paresis; tabes with well marked paresis; paresis coming on early in tabes; paresis beginning with tabetic symptoms; tabes and paresis in combination; paresis in which the tabes appears late; paresis with only certain tabetic symptoms; paresis without tabetic complications.

The Pathology of Taboparesis.—The pathology of taboparesis has been the subject of much investigation and considerable controversy. It has been held by some that the spinal cord lesions in cases of taboparesis differ from those found in simple tabes. It is asserted that in taboparesis the endogenous degenerations are more numerous and occur more frequently than in true tabes, in which the characteristic root and root zone degenerations are found. While it is true that endogenous degenerations are more frequent in taboparesis, it must be admitted that they are also to be found in the uncomplicated tabes, and cannot therefore be regarded as constituting an essential point of difference. Some observers have also attempted to show that the cortical lesions of the taboparesis differ in their localization from those of true paresis, being distributed over the posterior and inferior convolutions of the brain rather than over the frontal and Rolandic areas, which is the favorite localization in true paresis. Subsequent investigation has also disproved this, and the tendency at the present time is to regard the cortical changes in both affections as essentially the Pathological evidence and opinion at the same. present time is in favor of regarding the lesions occurring in taboparesis and those occurring in simple tabes or uncomplicated paresis as kindred in nature.

I would here mention an interesting pathological change which is found in the cerebral cortex in some cases of locomotor ataxia, cases which presented no demonstrable mental symptoms during life. These cortical alterations are histologically similar to those found in paresis, only much milder in degree. The existence of such alterations in the cortex of tabetics as a further evidence of the intimate kinship existing between the two affections. Such findings may also be regarded as furnishing the anatomical basis for a group of tabetic cases which present very mild symptoms of mental change and deterioration. In such cases paresis may be said to be present, but in a slumbering state. As Dejerine has expressed it, there are many cases of tabes in which the general

paralysis remains silent.

Tocometer Attivia and Other Psychoses—In an affection so frequent and so widely spread as locomotor ataxia, it is not surprising that there are occa-

sionally found associated with it other forms of mental alienation, such as paranoia, manic depressive insanity, dementia præcox, and various mental states following drug addictions. These cases numerically are comparatively few, and it may be said that the overwhelming majority of cases developing serious mental symptoms fall into the group of de-

mentia paralytica.

A general idea as to the relation of tabes to insanity other than paresis may be obtained from the combined statistics of Siemerling and Moeli, who found among 12,800 insane sixty-one tabetics. It must also be emphasized that in the course of tabes, mild mental states may develop upon a neurasthenic basis, which are entirely curable, and respond readily to proper therapeutic measures. Such cases may be the cause of great anxiety from the resemblance which they bear to the early stages of paresis, the so called præparesis. This resemblance may be so close that the subsequent course of the case will alone furnish a satisfactory solution of the question. It is also well to recall in this relation the mild cortical changes found in some cases of simple tabes without appreciable mental changes, the silent or slumbering

In conclusion, it may be said that tabes dorsalis, dementia paralytica, and the combined form of the two affections, all have the common ætiological factor of an antecedent syphilis. The pathological alterations in the cerebral cortex and the spinal cord are essentially the same in both the isolated and the combined forms. The clinical combination of tabes and paresis are so varied and so numerous that a gradual transition may be traced from locomotor ataxia, on the one hand, to general paralysis of the insane on the other. In fact, it may be said that the more our knowledge of these parasyphilitic affections of the brain and spinal cord increases the more significant appears their combination, and the stronger becomes the tendency to regard them all as essentially of the same nature and origin.

112 WEST FIFTY-FIFTH STREET.

GLIOMA OF THE BRAIN. Operation, Death, Autopsy.

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The history given below, with the post mortem findings, presents enough interesting facts to render it worthy of extended comment:

Case December, 1000; Mrs. Del.a: age, twenty-nine years; married four years; one child, thirty months old; separated from husband. The medical history of ber family is exceedingly good, as was also her previous history, except for some of the usual children's diseases, which, however, left her unimpaired. She was brought up in affluence; her father failed, and shortly afterwards died, so that she was compelled at an early age to support her mother and the younger children by sewing. About four years ago, she was not sure that this was not in early pregnancy. For some

indefinite time, however, in after years she occasionally had recurrent attacks of a similar character. She also complained of several attacks of neuralgic pains on the

left side of her face during the last four years.

She was married four years ago to a man who shortly afterwards was sent to the penitentiary for fraud in his business, and who later went south on account of tuberculosis contracted in prison. Some two years ago she was treated by Dr. A. Wray Barcley, her family physician, for an intense pain in the back of her head, accompanied by fever which he considered to be meningitis. Since then she had pains in back of head repeatedly. She also gave a history of two recent attacks consisting of a sudden jerking of her left arm, twitching of her face and turning of her head to one side (she did not know to which side, nor did her mother), accompanied by a choking sensation like a ball in her throat, but without unconsciousness. was followed by her becoming rigid and remaining so for some time. Her first attack was on Hallowe'en, 1906, the second just before she came to me. She described the second one to me as a weak spell in which her arm became numb, but after she talked it became normal in feeling She had had repeated spells like this one, she told me, and her arm was getting weak from them, though I could not find objective evidence of it in grip, lifting power, or action of individual muscles. She had never been happy since marriage and would spend her nights crying and be moaning her lot, and her days working as expert seamstress to support herself and child. She had a very deep sense of honor and felt her husband's shame so much that she would not seek any companionship or friends. She was very high strung and irritable. Digestion was bad, and very night strung and irritable. Digestion was bad, and patient had lost about nine pounds in weight since the attacks began. Urine examination: No albumin, or sugar, sp. gr. 1.020, no casts. Blood: Red blood corpuscles, 5,020,000; white, 6,200; hæmoglobin, 85 per cent; blood pressure, 130. Reflexes: (tendon) slightly exaggerated, though equally so on both sides. Corneal reflexes had been lost. There was no objective evidence of motor weakness, despite her complaint of weakness of left side. No evidence of sensory disturbance, except that she seemed slow, though not exactly uncertain in the use of her left arm. She was seen several times in the next month, but nothing further was elicited.

May 6th. Ophthalmoscopic examination made, but fundi were found to be normal. No paralysis of ocular muscles. No heminaopsia. She complained, however, of weakness of sight, stating that she had a misty feeling before her eyes. She was not seen for several months, when, on August 17th, she came to me and reported a spell on the August 17th, she came to me and reported a speri of the street while going to church, in which she rolled down to the ground, jerked all over, and became cyanosed. She had to be assisted home. Since this attack her left arm had been twitching and her left leg felt stiff and weak. She was sent to the hospital for observation. The results of was sent to the hospital for observation. The rest our examination there now revealed the following:

Left Arm.—Slightly spastic. It often drew up in flexed

Left Arm.—Slightly spastic. It often drew up in flexed position with forearm pronated and adducted and with fingers flexed in hand. The deep reflexes of this arm were very much increased. Clonus was present, the slightest pulling of the fingers bringing it out.

Left Leg.—Slightly spastic, pulling the legs up with hands under the knees requiring more strength with this leg than the other. Babinski's sign present at times, though not constant. Ankle clonus present but not persistent. Cardon's reflex also Oncephein's, present at Gordon's reflex, also Oppenheim's, present at Percussion of end of last phalanx of small toe caused abduction of the foot with eversion. Deep pressure on inner thigh caused an extension of big toe. A similar pressure on right side produced an extension of the big toe of left foot, not as pronounced and not accompanied by flexion of the foot or by a movement of small toes. Even when done on the right leg, the extension of the left toe persisted for ten to fifteen seconds, and on some attempts the extension was even more marked than when tried on the left thigh. Deep stroking of inner part of lower leg (along tibia) evoked this same phenomenon when done on right leg (extension of left big toe), but not when tried on left leg (paradoxical sign). This phenomenon was always present even on days when Gordon's reflexes could not be elicited.

Abdominal skin reflexes were increased on left side, also cremasteric and genital reflexes.

Hand grip only 20 Kg. in left hand; 65 in right. No muscular wasting anywhere. Loss of body weight about 14

Sensory Symptoms.—Tactile sense decreased over fingers and knuckles of left hand. Slightly over left arm, left side of arm, left leg and foot.

Temperature Sense.—This was somewhat lessened and

delayed over left arm, hand, and left side of body.

Pain sense was normal.

Muscle sense was distinctly lessened in left hand. Stereognosis was lost in left hand. A piece of money was

not recognized or felt as such, nor was a knife, except at a third attempt. Patient could not distinguish the point from the head of a pin, etc. Localization by Volkmann test was imperfect also.

Bone conduction was delayed and in some attempts vibrations not appreciated on tibia and radial bones of left

Gait and Station.-On walking there appeared some tendency to go to the left. Station with feet together and eyes closed was uncertain, but it was questionable whether it was not due to weakness of the left leg rather than to inco-ordination. There was some ataxia of the left arm partially obscured by clonus and weakness of this arm. Movements of this arm were slowly executed and wrong things done by it, exasperating the patient, who continually told me she knew what I wanted her to do, but she just must, it seemed, do the wrong thing. For instance, I would have her stroke her hair, but she would stroke her forehead in-stead. Whether this could be called a true apraxia I could hardly say; it seemed to me more a muscle sense im-pairment associated with the asteriognosis. The paralysis of left arm and leg was growing daily more pronounced.

Vision.—Corneal reflexes were lost, iritic reflexes active. Optic neuritis in both eyes (Dr. E. B. Heckel was kind enough to ophthalmoscope her. No nystagmus or paresis of ocular muscles. No hemianopsia or other limitation of

Hearing, taste, and smell normal; speech normal; mind clear and active. Temperature range (observation three weeks), 98° F. to 99.8° F. Pulse, 64 to 104. Respira-tion, 16 to 24. The high records were upon admis-sion and normal conditions resulted from regulation of diet and rest, except for one day after withdrawal of stomach contents for analysis.

There was no question now of our patient having a brain tumor. Reasoning backward one could see that her tonic attacks without unconsciousness were epileptiform and similar to what is often noticed early in cases of brain tumor, and also that the lost corneal reflexes were similar to what is sometimes found, a congenital or normal condition with this patient, but at the time I first examined her her history made me think of nothing but hysteria. As is so often the case, no characteristic headache, nausea, or vomiting had occurred, but the coming on of localized motor and sensory symptoms, the presence now of optic neuritis and the steady and rapid progressiveness of the symptoms were sufficient indications of the presence of a neoplasm.

An operation was asked for, and, consent having been given, Dr. O. C. Gaub was asked to expose the parietal and postcentral convolutions. I requested pose the parietal and postcentral convolutions. I requested him to keep the inner interparietal sulcus in the centre of the field of operation. The operation was performed on the 15th of September. The skull was unusually thick and the drills used broke, so that the osteoplastic flap was completed by DeVilbliss rongeur, mallet, and chisel. Before the flap was completed the bleeding from the bone was free. The dura did not bulge and was divided when a sourt of blood ensued which imand was divided when a spurt of blood ensued, which immediately blanched the patient and stopped her radial pulsations. The operation was stopped, restoratives applied, the open area tamponed and bandaged, and the patient removed to her bed. Not having recovered consciousness the next day, the bandage was removed to relieve possible pressure, but the oozing was so great that pressure had to be lightly reapplied. Death occurred twenty-four hours afterwards.

Autopsy was held eight hours after death. It showed a gliomatous infiltration of the left brain comprising the precentral, postcentral, and parietal region, extending downward to the corpus callosum, and posteriorly invading a small portion of the occipital lobe. A secondary

growth was found on the right side in the posterior parietal region.

The accompanying pictures show the extent of the growth, the sections made being described in the autopsy protocol. The gyrus fornicatus is seen to be degenerated slightly in the third section, fully



Fig. 1.-Brain, showing glioma

in the sixth. The thalamus is intact, although distorted from pressure, and slightly striated in the third and fourth sections. In the sixth section the pyramidal tract is involved. The postcentral, precentral (slightly), parietal (except lower), and parietooccipital regions are involved on the right side, and the posterior parietal and a small occipital area on the left side. The area of pachymeningitis and the smeary, broken down brain substance in the outer cortical layers did not exist intra vitam, but resulted after the operation.

The symptoms of this patient present on the whole those which are now definitely accepted to indicate a lesion of the central and parietal regions. That this patient went for such a long time with only indefinite symptoms which were not conclusive of any organic disturbance, and then to practically suddenly show grave symptoms which could be seen to daily grow in intensity, is explainable by the

vented any operative success. But this post hoc reasoning was at the time certainly not conclusive enough to prevent an at least exploratory operation. Also the absence or slightness of the general signs of tumor or of pressure symptoms, taken in conjunction with the extensive symptoms developing floridly, would seem to indicate that the tumor was perhaps gliomatous or aneurysmal and therefore inoperable. But cysts (operable ones) could produce such a clinical picture, and, more than that, enucleable tumors have been operated on successfully where general symptoms were entirely wanting or vague. Localization is difficult enough without demanding of the neurologist that he accurately foretell operability and the nature of the growth that will be found in a given case. The hopelessness of other therapeutic measures will, even in very doubtful cases, demand that this last chance be offered to the patient, even though only one in every thirty cases can be successfully operated upon.

A large flap for operation is always indicated, because symptoms due to pressure of a growth can rarely be entirely eliminated, and also because the centres in the cortex are not always localizable under the same part of the skull because of the variation in topography of the sulci, which serve to demarcate the different areas. Schafer, as long ago as 1887, clearly pointed this out, and observers since then have noted the unreliability of the fissures as



Fig. 2 .- Section through glioma.

landmarks for functional centres. Galvanic stimulation after the skull is opened, with notation of the position of fissures, and convolutions is therefore



The 3 Transverse section of the Lore

growth beginning in the white matter and growing upwards to the cortex without for some time affecting any fibres of importance for function. That it was a gliomatous and nonenucleable tumor would in itself contraindicate operation, and its deep seat and extensive invasion would certainly have pre-

the only way to accurately determine the position of the motor centres.

The exact commencement of the patient's neoplasm cannot be ascertained from her history. Actional four or five years before her operation and death she suffered from gastric symptoms and nausea, a cerebral origin for them is not indicated by the history. Indeed, at no time did her gastric symptoms deviate from what might be expected to occur in ordinary indigestion. Her headaches also were never constant or intense or distinctly localized, except that she frequently complained of dulness in the back of the head, which, however, could just as well be considered as being neurotic in type, especially as her descriptions of it were vague. made one think of a paræsthesia rather than of an organic headache. Dizziness she practically never complained of. Optic neuritis only came on late in her history. The only general indications which she gave of the growth of a neoplasm were the convulsive attacks which she had and the subjective sensory changes which she complained of in her left hand. These sensory changes could have been due to an hysteric condition, which diagnosis, by reason of other details in her history, was first thought of. It was only after seeing her after her convulsive attack in August that the possibilities of a tumor were seriously considered, and that for this reason she was sent to the hospital.

That with such a widespread growth no signs of mental deterioration were noted is only explainable by the fact that the neoplasm was largely situated on the right side of the brain, though the mental acuity and logical faculties were remarkable in this young woman. The extent of the tumor posteriorly makes one wonder that no hemianopsia was found, though naturally the optic radiations could not have been damaged even by pressure. It is, of course, always posible for glioma to exist without disturbance in conduction, as the neuroglia takes no part in conduction. Indeed the growth seems to have exerted its pressure almost entirely laterally towards the opposite side, and even the motor symptoms were largely due to the destructive influences of the tumor invading this area from the mesal side

The peculiar nature of the reflexes I cannot explain satisfactorily. Commissural involvement certainly occurred, and this is, in the light of our knowledge concerning the nature of the tendon reflexes, the only reason we can give. To me it was very interesting to observe this persistency of reflex action in the left leg and foot when elicited from the right leg-at times more constant and more pronounced even than when tested on the left leg itself. The different clinical examinations not only showed that Gordon's and Oppenheim's signs are distinct and different from Babinski's, but also that they themselves are subject to peculiar variations. I can only regret that we were unable to make serial preparations and to trace the fibres in the various tracts, though probably this would not have resulted in furnishing us with any more definite conclusions.

I repeat again that the progressive development of symptoms was very rapid in the last few weeks of this patient's life, due, I suppose, to the tumor at this time having reached cortical areas. Her feeling of numbness on the left side, with weakness followed by ataxic movements, with the later development of distinct objective hyperæsthesia for touch, temperature, and pain on this side, accompanied by impairment of muscle sense and astereognosis, clearly indicated a destruction of that

part of the brain whose function dealt with sensation. To this was added the paresis of the left leg and paralysis of the left arm, which indicated involvement of the arm and leg centre of the right side of the brain. Indeed this paralysis existed to the extent of being accompanied with active contractures and clonus particularly pronounced in the left arm.

The location in a general way of the tumor, therefore, in this case was not difficult, as the symptons definitely indicated disturbance of the parietal and central region. This case, however, affords no assistance in determining some of the mooted questions of localization in this region, whether the motor area lies in the postcentral as well as in the precentral region, whether sensory and motor centres lie entirely separate and distinct, or are consensual, and whether asteriognosis is an ordinary sensation and located in the same areas as a simple sensation.

Histologically, Cajal and Flechsig, by two entire-

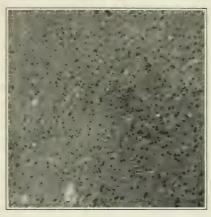


Fig. 4 —Microscopical section of the tumor. Low power, objective 4, ocular 4 (Zeitz).

ly different methods, and, anatomically, Brodman and Campbell have shown the differences between the precentral and the postcentral gyres, differences which lead us to assume various functions, even had they not been confirmed to a large extent by the physiological experiments of Mott, Tschermak, Sherrington, Exner, and others. The accepted fact of the function of one hemisphere, or at least of definite parts of the cortex being assumed by the opposite side of the brain, cannot be a clinical factor. Indeed, if allowed to have any weight, it would hinder attempts at localization intra vitam. Similar conclusions are at present to be made in considering the various ideas of the extent of inhibition or disturbed function with a definite lesion, that of Monakow concerning distant effects of a lesion with his conception of Schaltzellen or Goltz's theory. which is almost the opposite.

Déjerine believes that the precentral convolution originates motion, but also that the sensory tracts terminate here. In other words, he regards the sensory and motor region as coinciding. Others in-

sist that the motor region is not confined, as generally assumed, to the anterior central convolution, but extends into the parietal area (see Lewandowsky), though only to a slight degree. Mills and Oppenheim have especially shown that, for practical purposes, the motor and sensory areas can be considered separately, the latter being located in the limbic and parietal lobes, more exactly the gyrus fornicatus, quadrate lobule, and the parietal convolution.

No atrophy was present in this case. In one of Mill's cases of a superior parietal tumor, marked atrophy occurred, from which he assumed the presence of a cerebral trophic centre in the gyrus fornicatus, referring also to Savill's case in Brain, 1891,

as an added proof of such an assumption.

This patient corresponded in type to the characteristic cerebral sensory paralysis in that it extended to about the middle line and in that it was more marked in the distal parts of the extremities, a fact which, as Bonhoffer pointed out, refutes Munk's views concerning cerebral sensory localization.

It is impossible to enter here into the subject of stereognosis and what help it affords in localization. Prince, in his recent article, has discussed fully the complexity of sensations going to make up this condition and the absurdity to him of considering it as a "sense." There is a distinction between stereognostic perception and the recognition of objects by touch, although it is not always possible and not always necessary to distinguish between them and speak of primary agnosia, asymbolia, and tactile aphasia. Personally, I believe that the so called muscle sense and stereognosis are dependent upon the failure of the brain to register and to recognize sensory impressions, and that a wide area of brain is involved in defects of these "senses," agreeing in this way with the ideas of Prince. But I also believe that disturbances of this character are localizable postparietally, that this area is used for the interpretation of sensory registrations, forming a centre. In the patient whose history has just been cited there was pronounced diminution of tactual sensation and of tactile stereognosis on the left side, but no impairment on the right side. The autopsy showed extensive involvement of the postcentral and parietal region of the right brain, which is what was expected, but also a small tumor of the posterior parietal region in the left brain-an unexpected finding and one which gave no symptoms. There was no lesion in the area for common sensation and therefore can we infer that in this posterior parietal region, tactual sensations are recognized and interpretated, and to find astereognosis clinically we must have involvement of the centres for ordinary sensation, as well of the stereognostic centre?

Autopsy.—A horseshoe shaped wound covered with matted blood was found above the ear. Removing the sutures which held the cut surface together, the skull was seen to be sawed through in the same manner, though not severed on the irontal side. The dura, which had been severed on the frontal side. The dura, which had been opened, was covered with blood and brain debris, which upon removal showed a smeary, cheesy, bloody brain substance underneath. No cerebral bulging took place upon removing the skull cap. The diploe of the frontal bone were strongly developed; those of the parietal and occipital bones were not as markedly. The convex side of the bone flap was toward the left and the base toward the temporal

The dura mater presented no alterations. There was a little blood in the longitudinal sinus. After stripping off

the dura there was found on the right posterior frontal surface of the archnoid an area about the size of a dollar covered with a greenish yellow, smeary mass. pacchmeningitis.) Around the perietococipital sulcus was found a spot two centimetres in diameter, dark red in color. The gyri were flattened, and the brain substance was very soft and vascular. The base of the brain, the hypophysis, and the arteries were normal. The brain weighs 1,450 grammes.

In situ the brain showed the following: An area extending from the middle of the superior frontal gyrus to the knee of the central sulcus and to the first occipital gyrus and the lateral occipital sulcus was sunken in. The surto the posterior central gyrus and from here to the lateral

occipital sulcus was a smeary, cheesy mass.

Transverse sections showed the following: First section made three and one half centimetres from the convexity of the frontal lobe about the middle of the frontal sulcus. Cortical substance and white matter revealed no change macroscopically. Left frontal lobe was smaller than the right. The inner surface of the left frontal lobe was

slightly curved to the outside (from pressure).

Second section made about the superior and inferior precentral sulcus. The anterior and middle portions of the cortex showed no alterations. About thirteen millimetres above the corpus callosum was a greyish red area, five millimetres in diameter, not sharply distinguished, and of about the same consistency as the grey matter. The white matter of the right side was seven centimetres in diameter, four centimetres on the left side. The corpus callosum was slightly pushed below the ventricle; the lateral ventricle, shortened and widened, appeared as an acute angled triangle. The basal ganglia of the right side somewhat shortened and widened and pushed downwards.

Third section corresponding to the anterior half of the anterior central sulcus. The outer grey mantle normal. Middle portion softened. Inner portion was greyish red in color. White matter here was 4.5 cm. in diameter against 1.7 cm. on the left side. Lentiform nucleus was somewhat obscured in outline. Internal capsule

slightly striated.

Fourth section through anterior and posterior central gyri. Outer grey mantle was normal. Middle part was destroyed with slight loss of upper white part. The upper two thirds of the inner grey substance was greyish red in color with numerous punctate hæmorrhages. Lower third normal. Corpus callosum pushed downwards. White matter here was 5.7 cm. in diameter, and 2.7 cm. on the left side. Nucleus caudatus and lentiform was shortened. Internal capsule was normal.

Fifth section, upper knee of central gyrus. Outer mantle was normal. Middle portion softened. Inner two thirds of grey matter absent. Lower one third greyish red, and covered with punctate hæmorrhages. White matter 4.5 cm.

in diameter on right side, and 2.7 cm. on the left.

Sixth section. Transverse section corresponding to the upper knee of the central gyrus. Outer cortical substance well preserved. The superior and the inner two thirds almost entirely destroyed. In the inferior zone of this section was found a grey red hæmorrhagic focus I.4 cm. long and 7 mm. broad. White matter 4.5 cm. in diameter and only 2.5 cm. broad on left side. Corpus callosum normal. Right lateral ventricle compressed to a narrow fissure. Fornix, optic thalamus caudate nucleus, internal capsule, lentiform nucleus, and claustrum were normal.

Seventh section. Transverse section through superior parietal lobe. Outer grey cortical matter entirely destroyed and covered with a friable grey red bloody mass. A grey red focus in outer half af white matter. Middle and inner cortex entirely absent. One third of upper and inner white matter was also destroyed, irregularly ridged, and dotted with hæmorrhagic spots. In the centre of the white matter was a pale greyish red area, 13 mm. long and 3 mm. broad. The inner upper half of the corpus callosum was a greyish red friable mass, the upper third was also destroyed. In the left hemisphere there was a 5 mm. in length grevish red area directly over the corpus callosum.

The anterior portion of the pons cut through in this section was shoved to the left.

Eighth section. Transverse section through the posterior part of the superior parietal lobe. The upper and inner grey and the upper white matter destroyed. Surface changed to friable greyish red mass. Right posterior horn

smaller than normal. Opposite posterior angle of the posterior horn was a grey red stripe, 5 mm. by 2 mm. in size, just below the inner grey cortex. A greyish red marbled area of softer consistency than the brain around it was found in the left upper and inner grey extending to the inner and outer surface. Pons and cerebellum were

Transverse section, I cm. behind the paraoccipital sulcus Middle and inner grey mantle destroyed, except for a small area. Surface greyish red in color. An area of degeneration about the size of a pea was found in the inner grey In the left upper and inner part was found a greyish red area which reached from the previous transverse section to the crest of the right occipital lobe. In the white matter, a few scattered slightly greyish red foci. In the left side the degenerated part described in last section extended

to the cuneus. The cuneus and lobus lingualis are normal.

Microscopical Examination of Tumor of the Left Hemisphere Staned with Iron Hamatesytlom-Weigert and Van Gieson.—With low objective the centre of the degenerated focus was seen to consist for the most part of round or oblong cells, darkly stained and embedded in a thick mesh oblong cells, darkly stained and embedded in a thick mesin interspersed with numerous small bloodvessels and of a light reddish yellow color. The cells were arranged in a regular manner and at some places in small groups. The walls of, the thinly walled bloodvessels were of a rosy red color. This growth passed gradually into the normal brain substance and was characterized by numerous large and small ganglionic cells, as also by a fine intracellular substance, and a small amount of small, darkly colored cells, processing protocologies and proof in ploodyessels. poor in protoplasm and poor in bloodvessels.

With a higher objective these small oblong cells were comparatively free from protoplasm or contained only an outer zone of protoplasm.

The nuclear part of the cells consisted of chromatin ele-ments with small or large nucleoli lying at some places diffusely in the chromatin, so that the cells appeared a homogenous black. Some polynuclear leucocytes were also The fibres were a large, straight intermesh of homo-s structure. The interrelation between fibres and genous structure. cells could not be demonstrated. Some of the round cells resembled ganglion cells; mitosis could not be found. The large and small vessels consisting of a single or double layer of endothelium, surounded by a thin layer of connective tissue, showed no alterations. The small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are also showed in the small celled describe which gradually are small celled described as a small celled described and the small celled described are small celled described as a deposits which gradually passed into the normal brain substance were characterized by numerous large and small ganglion cells (rich in protoplasm and containing large nuclei and nucleoli). The intercellular substance was very fine and thick, and contained fewer of the darkly stained cells.

We understand by glioma a tumor which is formed from the specific basal substance of the cerebral nervous system, the neuroglia (Virchow), and which contains in addition a small amount of connective tissue and bloodvessels. Gliomata macroscopically are easily characterizable in that, in contradistinction to other tumors of the cerebral nervous system (metastatic carcinoma or primary sarcoma), they are not sharply circumscribed by a necrotic zone of brain substance, but gradually fade into the normal brain substance of the brain or spinal cord. If the gliomata are not hæmorrhagically infiltrated (this applies to glioma of the grey as well as of the white matter) they cannot be easily distinguished from normal brain substance. Only the slight softer consistency and the slight elevation above the surface indicate the presence of a pathological alteration. The gliomatous condition is found generally in the cortex, basal ganglion, nucleus caudatus and lenticularis, vermis, etc., and, notwithstanding extensive degeneration, the cortex of the parts involved may be intact. Sometimes we find gliomata sharply circumscribed, or lying free in the ventricles, which are of harder consistency. The color of a glioma is similar in most cases to the grey or white matter, yellowish white, grey, and somewhat more translucent than the cortex. If it is a very vascular glioma, the tumor is reddish in color. If regressive changes have occurred the tumor is dotted from pigmentation, reddish brown,

greyish red, or purple in color.

Gliomata never extend to the meninges of the cerebral nervous system; another characteristic distinguishing them from similar appearing tumors is their infiltrating growth. The tumor radiates in all directions from its origin. Stroebe found, especially in gliomata of the pons, this typical infiltrating form of growth, the nuclear elements, pontile, and pyramidal tracts undisturbed, though microscopically the ganglionic cell and nerve fibres were replaced by gliomatous tissue. This infiltrating growth makes it very difficult to delimit the extent of the neoplasm.

Gliomata grow very slowly, and if centres important to life are not involved, they may attain a very large size (as in this case). As a result of this slow growth the brain adapts itself to the altered pressure, and compressio cerebri comes on very slowly or not at all. The form of gliomata rich in cells which is wrongly called the sarcomatous type grows more rapidly and is not an infiltrating form, but forms in masses which injure the surrounding brain

Gliomata are highly vascular tumors. As a result of degeneration, expressed by fatty degeneration, nuclear destruction or a kind of ædematous or gelatinous softening, reducing the tumor to a soft, slimy mass or resulting cavity formation (cystic glioma) changes in the bloodvessel wall generally occur. Rupture may take place from increased pressure on a thinned vessel wall, or the vessel wall may also be so degenerated that its resistance is so weakened as to give way from the blood pressure. Extensive hæmorrhages may therefore occur, converting the entire brain area into an apoplectic focus, which upon superficial examination would be diagnosticated as such. A thorough microscopical examination of the tumor mass is necessary to ascertain its gliomatous nature (glioma apoplectiforme). Fatty metamorphosis of the parenchyma of the tumor is probably a secondary feature resulting from hyaline degeneration, or a result of nutritive changes as a result of obliteration of the vessel walls. We often find the adventitial cells of the vessels in a gliomatous growth proliferating and leading to obliteration of the lumen.

Microscopically the neuroglia consists of cells and fibres, the latter being connected to the former protoplasmic prolongations of the cells. This conception is disputed by Ranvier and Golgi, especially by Weigert, for instance. Weigert regards the glia fibres as being absolutely independent of the cell A protoplasm prolongation of the cellular fibres does occur; the glia fibres only go to the cells or radiate from them and pass over them, but never join them directly.

Weigert's conclusions, based upon many years of observations, were:

1. The neuroglia fibres, which were formerly regarded as prolongations of Deiter's cells, are not identical with the protoplasm of the cells, but chemically quite different structures.

2. The chemical difference does not increase as we go further from the cell body, but the distinction commences near the cell nucleus.

3. These are therefore not prolongations, but fibres differing in composition from the protoplasm.

Weigert's views marked an epoch, and a true connective substance of the central nervous system was thought to have been discovered. Many prominent neurohistologists accept these views of Weigert's. Most of the anatomists of the central nervous system, especially Pelazzi and Stroebe, opposed these views, and showed that the glia cells were directly connected with the glia fibres (Mallory's stain). Obersteiner, Reinke, Robertson, Brodman, and Nissl all wrote against Weigert's views. Held comes to the following conclusions:

I. Free glia fibres occur. 2. There are fibres which meet with a protoplasmic prolongation of a glia cell and become closed in. 3. Some glia fibres lie in the cell body. 4. Some bundles of glia fibres are held together and accompanied along their entire course by protoplasm. Held cannot therefore agree that the glia fibres are completely emancipated from the glia cells protoplasm, and that it is purely an

intercellular substance.

A definite conclusion concerning this question was not possible, because neither Golgi's silver impregnation method, nor the carmine stain, nor Weigert's glial stain, nor its modifications by Bevan-Lewis, Benda, Kultschifzky, Yamagiva, Morel, nor Mallory's stain were capable of staining differentially the protoplasmic body of the glia cells. Recently Eisath has discovered a method, a modification of Mallory's axis cylinder stain, which enables one to distinguish the protoplasmic body of the glia cells and to show their direct connection with the glial

Eisath finds that the glia cells, as Held described before him, are composed of a cell nucleus and a translucent protoplasm colored light blue, the cells either round in contour or irregular with protoplasmic prolongations, and, if fibres are present, sheathed by this protoplasm. The fibres are stained dark blue and arise from the cell periphery or from

its interior.

The results of Eisath form the key to a proper understanding of Golgi's and Weigert's contradictions. The difficulty lies in the staining methods and in finding the protoplasm of the glia cells, which had a roundlike form, or send out dendrites, which must not be confounded with Weigert's chemically differentiated fibres.

To recapitulate:

Golgi with weak impregnation did not stain the cell body at all, so that the cell protoplasm did not become visible, and with deep impregnation the entire cell protoplasm became black, so that the protoplasmic elements could not be distinguished from Weigert's fibres. He therefore came to the conclusion that cell body and prolongation were a histologic unit. Weigert, on the other hand, by his method carried distinction too far, and the glial protoplasm entirely escaped him. He therefore arrived at the false conclusion that glia fibres and glia nucleus were entirely different structures; he also made the error of denying the existence of protoplasmic glia at those places in the central nervous, system where it existed normally, and failed to find glia in large areas where it existed-for instance, in the lower layers of the cerebral cortex.

Stroebe, by using Mallory's stain, found a chemical difference between glia fibres and glia cells, but not definite separation of fibres and cell body. Held confirms this view, and found in the layers of the cortex glia cells with jagged protoplasmic dendrites. Golgi's and Weigert's contentions are now therefore decided as Held and Nissl assumed they would be. Weigert's opinion that the neuroglia fibres are not identical with the protoplasm, but different chemically, is true, but this chemical alteration does not occur gradually in the protoplasmic prolongations, but occurs in the cell body. The glia fibres are not different from the cell body, are not therefore an intercellular substance in the sense of Weigert, but the fibres are imbedded in the glia protoplasm and are therefore a part of the cell, as Golgi assumed.

Gliomata (after Lenhossek, astroma) consists, therefore, chiefly of glia cells possessing these prolongations. There is no special type of intercellular substance. That which in gliomatous tissue has been described as a hyaline matrix or fine fibrillary substance is probably the result of degeneration of fibres or section of the glia elements. When hardened and stained (Mallory or Weigert stains) the glia is seen to consist of a very thick matrix, fine or coarse fibres, and nuclei or cells which are arranged either regularly or in groups. The nuclei are mostly round, containing little protoplasm. The fibres radiate from the periphery (star celled glioma, Stroebe), or the cells are elongated and oval, with the fibres arising from both poles (spindle celled glioma, Stroebe). Between the cells and fibres is probably an intercellular fluid. Remnants of nerve fibres and nerve cells are often found between the glia elements, ganglionic cells with large nuclei and nucleoli (Borst, Pels-Leusden, Stroebe, Hamilton, Flexner).

Stroebe found such ganglion cells in all gliomata examined by him. We will discuss later the similar development of glia cells and ganglion cells (ependymal cells). Kolliker called attention to the fact that glia and ganglionic cells resemble each other markedly throughout the cerebral nervous

We therefore see that the microscopical structure of individual tumors varies. If we insist upon Weigert's definition of neuroglia cells without prolongations embedded in a fibrous matrix we find numerous fields which agree with it (glioma poor in cells). With Van Gieson's stain we find many radiate from the bloodvessels; more rarely a chain of cells (Pfeile cells) are found. Occasionally gliomata are formed from spider cells or astrocytes (astroma), in which the mesh of the prolongations from the astrocytes varies, as we described it, in addition to long and short radiating ones, monster glia cells being found. The relation between cells and mesh varies. Sometimes the cells are in excess, so that the tumor resembles a sarcoma, and falsely is called a gliosarcoma. Astrocytes with giant cells may prevail, or the cells may be poor in protoplasm, very abundant with the intercellular substance, sparingly present, or not present at all. It is difficult to distinguish the last type from sarcoma. The investigations of Stroebe present contradictions between the type of normal glia and astrocytic glioma. In the gliomata, which are almost entirely formed of glia cells, the chemical differences of the glia fibres as a result of their rapid growth is not completed, while in normal glia and some gliomata in which spindle cells are not present, the opposite occurs. The protoplasmic relations between the two produce a distinction.

Developmental defects cause the formation of gliomata, as is corroborated by the simultaneous presence of other malformations of the cerebral nervous system and spinal canal (spina bifida), as also their frequent occurrence in children. They probably arise from groups of undistinctive cellular material. Rindfleisch, who first gave utterance to this view, said: "When the brain and spinal cord are completed, a remnant of embryonal tissue remains which belongs to the neuroglia and from which gliomata arise."

Lenhossek believes that in the completed central nervous system there is found, in addition to the developed astrocytes, a remnant of unattached glia cells, not used in the embryonal development from which tumors arise. Though this hypothesis is satisfactory, it is not probable. Lenhossek assumes for glia growths resulting from chronic inflammations, like Weigert, a nuclear increase of the prolongations of the cells. Mitotic division of the glia cells is positive in such cases. Borst and Stroebe also found numerous mitoses in gliomata.

Glioma have been lately described in which nuclei of an epithelial nature, formed of cysts, or canals, were noticed (Kaufman). From the developmental history of the cerebral nervous system we know that their basal tissue is epithelial. This epithelial character is conserved in the ependymal epithelium of the ventricles. Tumors in the ventricles of a purely epithelial character are often mixed with gliosal elements. An interesting tumor of this character was described by Kaufman.

SEVENTH AVENUE AND LIBERTY STREET.

LIGHT IN THE TREATMENT OF DISEASE AS USED AT BOULDER LODGE SANATORIUM, FORT DODGE, IA.

By J. W. Kime, M. D., Fort Dodge, Ia.

It is now some seven years since I began my investigations with light as a therapeutic agent. The profession then looked askance at anything along this line. It was new and untried, hence was beyond the pale of professional propriety. Any one tampering with the question was more than likely to be suspected of "fakeism."

Thanks to the perseverance of Finsen, Röntgen, Curie, and other earnest investigators, the subject of light in its various forms and manifestations has now been placed upon an enduring basis. With the host of imitators now in the field, however, with lamps innumerable foisted upon the profession, with an abundance of sensational and commercial literature, it will still require a number of years and much patience to sift out the good from the bad, the useful from the merely commercial.

Our own work here has been along the line of developing the use of the sun's rays as a therapeutic agent; to ascertain, in so far as we might be able, the possibilities and the limitations of these

rays. Hence much time in the beginning was devoted to the properties of the various kinds of light as regards the colors or wave lengths of the various rays.

Since photography offers the best means of ascertaining many of these points we made many experiments intended to show the photographic effects of the rays of different lengths as indicated by the various colors of the spectral rays. The photographic, actinic rays of light pass readily through blue glass; they are almost wholly cut off by red. The other colors transmit a greater or less percentage of actinic light.

Arranging strips of glass of the seven primary colors in the order red, orange, yellow, green, blue, indigo, and violet—though there are but three primany colors, red, yellow, and blue—and adding a strip of plain glass and a corresponding open space with no glass at all, as shown in Fig. 1 and Fig. 2, we found the following to be true: In Fig. 1 ordinary printing out paper as used by photographers was placed under the frame containing the strips of glass referred to, and was laid in the sunshine as ordinarily done in printing in photography. The exposure to the light was continued until the open space was fully printed. The paper was then toned in the ordinary way, with the result as shown.

It will be seen that no appreciable actinic light passed through red, none is apparent in orange, perhaps ten per cent. in yellow, green drops back to about three per cent., while blue jumps suddenly to 100 per cent., as measured by the open space which contains no glass. The indigo, which was but a dark blue, drops back a little, perhaps to ninety per cent., while the violet measures just about fifty per cent. The open space where no glass intervened between the sun and the printing out paper is of course one hundred per cent., and plain glass is about the same. There is no apparent difference between the blue and the open space.

Fig. 2 is just the reverse of Fig. 1. It was printed from a negative made in the ordinary way, except that it was done without the aid of the camera, the light being instantaneously admitted and cut off through an opening in the wall, no glass intervening except the strips of colored glass in the frame, which was bound to the sensitized plate. It shows that no actinic light reached the sensitized plate through the red glass. One hundred per cent. passed through the blue, while the other strips gave about the same results as in Fig. 1.

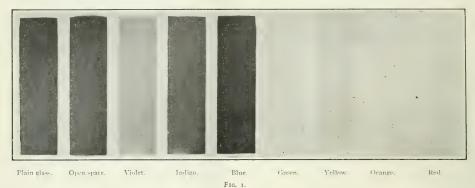
It will be seen that the photograph and the print exactly check each other, thus proving the value of the test. The violet perhaps serves as the best illustration of the completeness of the checking. In both the print and the negative the percentage of actinic light is the same, although the two processes were exactly the reverse of each other; that is, the percentage of light in the violet is just about fifty, thus accounting for the correspondence of the two results by opposite methods. The value of the blue ray from the standpoint of actinism is thus demonstrated. Red would be wholly useless from an actinic point of view.

Another property of the blue light is its coldness in comparison to white light. With the large condenser used at Boulder Lodge the reflected white light is so hot that it instantly sets fire to wood.

This same light, after passing through a single thickness of blue glass, is so cold that it can be used upon the bare body of the patient without discomfort. Since the strongest possible actinic light, as free as possible from heat, is desired, the blue light offers the best means of securing the strongest light for the treatment of disease. It is for this reason that we make use of the blue light, and the results here

patient. This reduces the heat to a very comfortable degree. It is necessary to cut the blue glass into narrow strips to provide for rapid expansion and contraction to avoid breakage.

The illustration (Fig. 3) shows the manner of using the light. The small disc standing near the nurse is three feet in diameter, and was formerly used in our work. The large disc is constructed



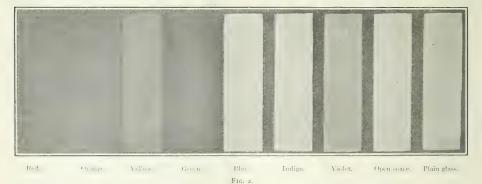
obtained are sufficient to warrant its continuance until something better has been demonstrated.

The very great inconvenience of obtaining the ultra violet rays and the comparative ease of obtaining the blue ray render the latter much more available for use.

Blue light, being a cold light and almost equally rich in actinic rays with white light, it has been our purpose to ascertain as nearly as possible the therapeutic effect of these rays.

upon the principle of a concave mirror. It weighs half a ton and is counterbalanced by a large weight. It is so mounted that it is readily made to follow the course of the sun through the sky.

Penetration of Light.—I am not unmindful that the penetrative power of sunlight has been denied. It has also been denied that the earth is round, that matter exists, and that an intelligent creative force lies behind the universe. We have, on the contrary, been able to demonstrate that the actinic rays of sun-



We have had constructed a very powerful condenser of sunlight. It is ten feet in diameter and is so made that all the sunlight falling upon its surface is reflected and focussed upon a point twenty feet in front of it. At this focal point a most intense light, accompanied by a corresponding heat, is concentrated. It instantly sets fire to any combustible material. A blue glass screen sixteen inches square is lung at the focal point, through which the light is passed before falling upon the bared body of the

light, even when unconcentrated, have very great penetrating power.

The following simple experiments were made with the kind cooperation of a number of my professional colleagues:

Small photographic negatives containing prints of various objects upon them were cut into sizes that would readily permit their insertion inside the mouth and against the inner surface of the cheek. The physicians wrote their names upon these negatives.

To the negatives small pieces of corresponding size to the sensitized plates were bound, and the pieces thus prepared were inserted into the mouths of the physicians, the negatives being placed against the inner side of the cheek and the sensitized plate resting against the outer surfaces of the teeth. Thus arranged in the photographer's dark room and with a black cloth over the mouth and nose and the mouth tightly closed to prevent the entrance of light the physicians stepped into the sunshine and for fifteen seconds held their cheeks toward the sun of a February day.

The reproductions of the views upon the negatives and the signatures of the physicians photographed through the thickness of their cheeks are conclusive that the chemic rays of ordinary sunshine have great penetrative power when permitted to fall It is usually denied that actinic light, or light of short wave length, will pass through glass. All my photographs here shown were taken through glass and through portions of or through the entire thickness of the body, and are quite conclusive that chemic rays do penetrate to great depth into the living tissues even after their passage through glass. Glass is no doubt opaque to the shortest rays of light, but it is perfectly penetrable to light rays rich in actinic power.

Therapy of Light.—We began our work as did Finsen and nearly all others who have worked along similar lines, with the idea that the light acted in a germicidal way, that the chemical rays in some manner destroyed the bacilli. It is well known that light inhibits the growth of many forms of pathogenic bacteria, and when sufficiently strong destroys



Fig. 3 - Manner of using sunlight.

upon the surface of the body. (Fig. 4.) The prints and signatures are: Bouquet of flowers, J. W. Kime; negative of man, Dr. H. G. Ristine; row of trees, Mr. Hostetler; man by train of cars, Dr. W. W. Bowen; boy on steps, Dr. W. R. Bates. I am under obligations to these physicians and to Mr. Hostetler for assistance kindly rendered.

In this connection I refer to my former experiments, in which I showed that concentrated sunlight penetrates through the entire thickness of the adult

thorax

Fig. 5 was made from a photograph taken in a manner quite similar to that described for the smaller photograph shown in Fig. 4. Here, however, the plates were placed upon the back, and the light was thrown upon the chest, the print being made by means of the light which had traversed the thickness of the thorax. (Medical Record, October 13, 1900.)

them, and it was believed that bacteria deluged with actinic light would lose their powers for doing harm. This in a measure is true, but in the light of experience we must look for additional reasons for the improvement manifested in these patients. While the light does inhibit the growth of bacill this is perhaps but one of the factors in the cure.

The effect of the light is at once apparent in the treatment of lupus and other chronic lesions of the skin in which there is an abrasion of the surface. Here, after a few minutes of application of the strong actinic light, the wound assumes an altogether different appearance. From a pale, ashy, lifeless color it becomes red, livid; the tissues become engorged with blood, the capillaries swell to the point of bursting, and drops of blood ooze from the surface and trickle over the edges. At the same time this light is comparatively cold.

To the irritating effect of the short rays we must:

look for the explanation of this turgescence, and it is without doubt in part due to the increased nutrition brought to the parts by the abundant flow of capillary blood that we must credit the favorable

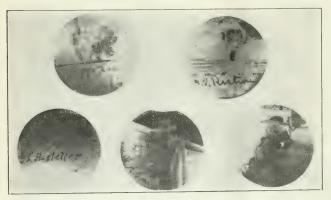


Fig. 4.-Penetration of light.

changes which occur. In these superficial lesions the bactericidal effect of the rays plays an important

In the deeper tissues, as the lung, capillary en-



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gorgement likewise takes place, increased nutrition is brought to the affected areas, fibrosis is favored, and reparative processes occur which might not take place under less favorable circumstances.

Very material benefit is no doubt received by the patient in the bathing of all his blood in the powerful actinic light. During a treatment of twenty minutes' duration all the blood in his body passes

many times through the parts upon which the light is turned, and thus the direct results of the light are carried to the most remote portions of the organism.

Liebermeister says: "Light promotes the general power of assimilation. The more vigorously this goes on the greater will be the vital energy of the body and its power of resistance to everything injurious, especially to pathogenic microorganisms. This, as well as the hyperamia induced in the limbs exposed to irradiation for a long time, may explain the cures reported by Cicchansky, Poncet, Perdu, and Blanc in cases of local tuberculosis in joints and

We use the condensed blue light at Boulder Lodge in pulmonary tuberculosis, lupus, and other chronic skin lesions, and in postoperative surgical tuberculosis. In these affections light, and especially the shorter rays, is an agent of great utility.

In pulmonary tuberculosis the entire chest of the patient is made bare, and the light, after passing through the blue screen, is thrown directly upon the exposed portions of the body. These rays penetrate the entire thickness of the thorax, having a retarding influence upon the growth of bacteria and engorging the parts with blood. The light is used for twenty minutes each day. Our results since installing the large light have been so much better than before that there is no room for doubt as to the beneficial effect of these rays.

While by no means a specific, and in the far advanced cases of but little value, in early cases more rapid improvement is noted than was prior to the use of the light.

The psychic effect of the light is an adjuvant of no small consequence in cases of pulmonary tuber-culosis. If it had no other result whatever we would under no circumstances part with its use.

ANOTHER METHOD OF REGULATING PRESSURE IN THE BIER TREATMENT.

By Ralph Grace, M. D., New York,

Assistant Physician to the Lincoln Hospital.

I notice in the April 4th issue of the Journal of the American Medical Association, an article entitled An Accurate Method of Controlling the Pressure of the Bandage in Bier's Hyperamic Treatment, by Dr. Gordon Wilson, in which he recommends the Riva-Rocci sphygmomanometer.

I have been using recently in my practice a plan that seems to me much better in that it is more easily controlled and can be applied without special skill by anyone. It is by the hydrostatic sphygmomanometer devised by Dr. Louis Faugeres Bishop.

of New York.

To those not familiar with this instrument, I would say that it is an instrument for measuring blood pressure by a compression caused by a column of water of varying height. It consists essentially of two rubber bags connected by a tube; one being inside of the cuff and the other arranged for elevating and depressing. In the instrument is placed about twelve ounces of water without air. The ac-



The production of hyperæmia by means of the Bishop hydrostatic sphygmomerometer.

companying illustration shows clearly how the bandage is applied and how the pressure may be regulated by the patient. The cuff is laced to the part of the body that is to be compressed and the pressure regulated by elevating the reservoir bag. instrument also has many advantages for measuring blood pressure, which is indicated in millimetres of mercury on the tube and read at the level of the heart at the moment that the pulse disappears.

54 WEST FIFTY-FIFTH STREET.

BROKEN JAWS.

Citing Cases from Actual Practice: Causes, Symp. ... Diagnosis, Prognosis, Treatment.*

By DAVID B. FREUNDLICH, D. D. S., New York,

Dental Surgeon, St. Bartholomew's Hospital.

Fractures of the maxillæ occur quite frequently. They are usually the result of fist blows, kicks of horses, and are also very often caused by some heavy missile which has been thrown with great

Among other fractured jaw cases in my practice, there was one that was caused by a kick from a horse. On November 19, 1906, Dr. W. G., a veterinary surgeon for one of the largest express companies in this country, came to me for treatment. Upon taking the history of the case, I was informed that while in the act of administering some medicine to the animal he received a good, forceful kick, after which he lay unconscious for some minutes. While under my treatment he followed my directions religiously, and as the case progressed and improved, the result was all that could be hoped for. It was not before March 2, 1907, however, that I discharged the patient, pronouncing him perfectly well.

The following information will probably be of some interest to the members of the medical profession and its branches.

The superior maxillary bones are less frequently fractured than the inferior maxillary; and the reason for this is that the superior maxillary bones, on account of the location and shape, are less exposed to injury.

The inferior maxillary is more prone to fracture than any other bone of the face; and this is on account of its size, shape, and location. It might be of some assistance to us to know that the weakest point of the lower jaw is just anterior to the mental foramen.

Statistics tell us that fracture of the lower jaw is ten times more frequent in males than in females; and, personally, I am convinced of this statement when my mind reverts back to the time of previous election days in some of the "rough and tough" neighborhoods of this city. Broken jaws are "handed out" in a matter of fact fashion if the assailant so chooses, and if a blackjack isn't handy, brass knuckles will admirably answer the purpose. This is no fancy picture. I know it, because I have seen it during the time I was an employee of what was then considered the most corrupt city department in New York, and, I dare say, in the United States.

Fractures are divided into two general forms— simple and complicated. When there is no break in the continuity of the external tissues and when there is a single fracture of the bone, this is called a simple fracture. Complicated fractures include injuries to external tissues, vessels, nerves, teeth, to a comminuted condition of the bone itself, or any other condition which complicates a single fracture. We divide complicated fractures into multiple, comminuted, and compound.

When there is more than one break in the contin-

*Read before the Triprefessiona, Medical Sciency at New York, December 17, 1907.

uity of the bone we call it a multiple fracture, and under the heading of multiple fractures we include double and triple fractures.

When there is splintering and crushing of the bone into small fragments, as a result of crushing injuries or gunshot wounds, these are the comminuted fractures.

Where the fractured ends of the bone are exposed and the soft tissues injured, these are the compound fractures.

Fracture of the alveolar process is the most common fracture of the jaw, and it is generally associated with the extraction of teeth. These fractures do not involve any more of the process than the external plate lying right over the roots of the tooth extracted, and maybe a small part of the process adjacent to it. It might be interesting to know that fracture of the alveolar process is often the re-



Broken jaw, caused by a bloc view to claw with a blackjack

sult of a fall or a blow upon the chin, having an upward direction, driving the teeth into their sockets, and splitting the process on a line with the alveoli. Cases are on record where this has occurred to men engaged in the building trades as a result of a fall from a building and scaffolding. When this happens in the upper jaw, the external plate of the alveolar process is usually the part that gives way, as the palatal process supports the internal plate—hence its greater power of resistance. When the same accident occurs in the lower jaw, both the external and internal plates of the process usually fracture and separate.

As an aid to diagnosticate fracture of the lower jaw, it is well to be acquainted with the most frequent occurrences of fractures. Fracture of the lower jaw occurs most frequently as follows: I, Region of the cuspid tooth; 2, between cuspid and angle of jaw; 3, between symphysis and cuspid; 4, angle; 5, symphysis; 6, at points through ascending

ramus; 7, neck of condyle; 8, through coronoid process. Above the angle of the jaw fractures are exceedingly rare. Hamilton reported fifty-five cases of fracture of lower jaw, and only three of these were above the angle.

When injuries are received on the side of the face they usually result in fracture of the body of the jaw, through the cuspid, bicuspid, or molar regions, angle, or symphysis. When blows or falls are received upon the chin they usually result in fracture of the ascending ramus and neck of conductors.

A word about displacements. Where the fracture occurs at the symphysis the displacement is usually very slight; and this is because of the attachment of the muscles of the lateral halves of the jaw and their equalized action. It is important to know that this fracture may occur and not be recognized by the patient except from the crepitation produced when attempting to masticate food. When the fracture occurs at the neck of the condyle, the displacement as a rule is not very great. Of course there is a greater amount of displacement in multiple and

compound fractures than in simple fractures. In simple fractures through the cuspid region the displacement is not so great as when the same character of fracture is compounded into the mouth, because the covering tissues combat to a certain extent the tendency of the muscles to draw the ends of the fractured bone out of position. Where continuity of the covering tissues is broken there is full play of the muscles, and this causes a displacement which is in commensuration with the location and character of the injury.

The greatest amount of displacement is caused by multiple fractures.

Of course when displacement does occur it is then that the action of certain muscles is called into play, and it matters little to me what the names of these muscles are (as enumerated in textbooks), so long as I get a good look at the case, and treat the displacement, lacerations, etc., accordingly.

Allow me to say a word or two in regard to lines of fracture. The lines of fracture may be vertical, oblique, or horizontal. When the fracture is through the symphysis, it is always vertical. Fracture of the alveolar process is generally vertical and oblique combined, as can be seen when the external plate of the process is split off in the extraction of teeth or as a result of upward blows upon the chin. The great majority of fractures of the body of the bone, however, are oblique.

The thickness of the bone of the lower jaw is divided obliquely, so that generally the fracture occurs at the expense of the internal plate of the anterior portion and the external plate of the posterior portion. When the fracture is very oblique there is usually considerable overlapping and locking, making reduction sometimes very difficult.

Symptoms.—Symptoms of fracture of the lower jaw are generally well marked, except in simple fractures, through the symphysis. The special diagnostic signs are crepitus, more or less deformity of the contour of the lower part of the face, and unatural or excessive mobility. Pain is always present, and is increased by movements of the jaw. In the majority of cases the mucous membrane is lacer-

ated, giving rise to more or less hæmorrhage. There is excessive secretion of saliva, and on account of mixing with the discharges of the wound it decomposes, and causes an offensive breath. The normal occlusion of the teeth is changed, and this is well marked at the point of injury.

Case.—A man, twenty-nine years of age, came to me with a broken jaw in the morning on Thursday, March 14, 1907. Among other things, in his misery, he said that he had been hit on the jaw with a blackjack, knocked senseless, and robbed of \$3.60. The illustration shows that the patient is drawing his lower lip down so as to expose that part of the jaw where two teeth have been pushed out by part of the law where two teem have been pushed out of the blow received from the blackjack. I gave this patient the usual course of treatment, and it was some time before the could feel any semblance of relief. The difficulty encountered in treating this case was due to the fact that he came to me several days after he had been injured, and this he told me only two weeks after I started the treatment. However, after treating the case several months with fairly good progress, the patient suddenly failed to make his appearance for further treatment; and I am now of the opinion that either he is dead (from some other cause), or else is enjoying the best of health.

Considerable inflammation usually follows fracture of the jaw. This is accompanied by swelling and infiltration of the face and neck and is very often followed by troublesome abscesses and ne-

crosis of splinters of bone.

In fractures of the lower jaw, complications are possible, and among these possible complications are hæmorrhage from wounding inferior dental artery, paralysis of lower lip and chin, salivary fistula, abscess, necrosis, septicæmia, pyæmia.

Diagnosis.—This is generally a simple matter, but sometimes I have found it very difficult in locating the exact seat of fracture, especially if it is a sim-

ple one where there is no displacement.

Now, where there is any doubt about the fracture, I allow the patient to sit on a low chair, I standing behind. With both hands I grasp the jaw, placing the thumbs on the ends of the teeth and the fingers under the chin, by alternately depressing and elevating first one side and then the other. If fracture is present, crepitation will be discovered at the

point of injury.

There is one case which I distinctly recall in the month of January, 1907, at St. Bartholomew's Hospital. It was the broken jaw of a colored man who had been assaulted by some of his friends (?). Upon requesting the patient to close the jaw, I noticed his inability to properly do so. The fracture had been through the coronoid process, and in making this diagnosis, that which assisted me greatly was the inability on the part of the patient to properly

Prognosis of fracture of the lower jaw, as a general rule, is very favorable. The mortality is exceedingly low. Where the end is fatal this would in all probability be due to other complications, as

septic poisoning.

From my own experience in my clinic at St. Bartholomew's, I have observed that it takes about seven weeks for simple fracture of the lower jaw to unite. It takes about four months and even five months for a good union, where the fracture is compound, multiple, and comminuted.

Of course, we all know that the callous found at the fractured ends of the bone frequently causes deformity in a marked degree. However, this is only temporary. This afterwards disappears by absorption, and the facial lines are restored to their normal condition.

Treatment.—There are two conditions which are absolutely necessary to the successful treatment of fracture: First, the exact putting together of the fractured parts of the bone. Second, entire stability

of parts until union takes place.

A great many methods and devices have been introduced by which fracture of the lower jaw may be fixed. Great use is made of the interdental splint. Bandages are also employed in certain cases. I generally determine the particular method in each individual case by the location and extent of the fracture, and by the complications. Where fractures are complicated with laceration of soft tissues or hæmorrhage I treat them as wounds, viz., arresting hæmorrhage, rendering wound aseptic. After this, the fracture can be reduced. It is then that the appliance is selected and adjusted to maintain the stability of the parts.

Simple fracture with only slight displacement may be reduced and usually held in position by the simple four tailed bandage or the Barton bandage. In addition, may be used an external splint molded to the chin, or wires may be twisted around the firm teeth upon either side of the fracture, the wires to be passed through the approximal spaces at the

margin of the gums.

The angle fracture bands, screws, or wire are better still. These bands are of platinum or German silver. They are passed around the teeth and held in position by a set screw. This set screw passes through the tubes, which are soldered to the bands, which are drawn together by the screw until it tightly grips the tooth. This band is fastened to a firm tooth on either side of the fracture. The screw is then passed through the tubes. These tubes are prepared to receive the screw on the side of each band. By tightening the screw the fracture is approximated and maintained in position.

Another method is to make a band with a button on the side. Pass the wire around the buttons in the form of a figure of 8. This will approximate the fractured ends of the bone. In single fractures, in all locations of the jaw, this method is applied. In comminuted or multiple fractures, where the displacement is great and difficult to reduce, with this appliance there is constant danger of displacement, and the strain on the teeth to which these bands are fastened loosens them, the teeth becoming worthless

as points of anchorage.

The angle appliance cannot be used in those cases where the teeth have been loosened or dislodged, or where the jaw is without teeth. We are told that the best method in these cases would be to drill the maxillary bone and wire the fractured ends together. Up to this time I have not had the pleasure of drill-

ing fractured maxillary bones.

I wish to say just a word in regard to operations on the jaws. There are two things which should be remembered: I. Avoid any cutting operations on the external tissues of the face if the operation can be done through the mouth, so that no disfiguring scar may be left behind. I have seen time and again patients who were compelled to resort to operations on the face, either as a result of broken jaw or benign or malignant tumors, and whom it was a sight to look at after the patient had convalesced.

However, I think that, with the advance of science today, more care is being taken along these lines. Therefore the second point is, that where it becomes necessary to operate through incisions in the external tissues, care should be taken that the lines of incision follow the natural lines of the face. When operating on the lower maxillary, the line of incision should be kept under the lower border of the jaw for the same reason.

Another important factor in the treatment of fractures of the jaw is the hygienic condition of the mouth. And the most successful method will be that one which will permit of the most frequent cleansing without disturbing the appliance. There are a great many appliances which have been advocated and employed in various cases. My own method and motto is, "Use your own judgment."

It might be a bit of a strange fact, but you would be astonished to see the broken jaws which present at free institutions on St. Patrick's day, election day,

new year's day, and the Fourth of July.

Fractured jaws are interesting cases to treat, and I have found, through my hospital practice at least, that fractured jaws occur most frequently among the poorer and ignorant classes, and I regret to say that, owing to the fact that the fee is far and away less than the value of the services, nine tenths of the practitioners (medical and dental) "don't bother with it." But the satisfaction one feels in treating and relieving these poor wretches can only be appreciated by the one who is actively engaged in the

In closing, I want to say that a great number of fractured jaws are the result of quarrels among the very lowest of classes. It surprises me that the number of broken jaws are not on the increase on account of the heated newspaper discussions that we are constantly having on various topics of the

It has been said that were it not for the mouth, nine tenths of the gossip and the mischief of the world would be prevented. And very often, were it not for the mouth, there would be no broken jaws.

76 WEST ONE HUNDRED AND THIRTEENTH STREET.

TREATMENT OF TUBERCULOSIS OF THE UPPER AIR PASSAGES.

Report on Tuberculosis and Lupus of the Nose, of the Nasopharyngeal Space, and of the Pharynx.*

By J. W. GLEITSMANN, M. D., New York,

Corresponding Member of the Vienna Laryugological Society, etc.

The invitation of your committee to make this report in conjunction with Professor Heryng was very pleasant to me as well as an honor, as I have made reports with the professor at former medical congresses and as we are in full accord on all major questions. We divided the work in this waythat he should report on the larynx, while I should report on the nose, the nasopharynx, and the pharvnx; I also took up, with the consent of your committee, the question of lupus. I have also complied with the wish of the committee not to refer to ætiology, the channels of infection, and the symp-

tomatology, and shall speak only on therapeutic questions.

Undoubtedly we have made progress in the treatment of tuberculosis of the upper air passages during the last decades, not only through the introduction of new methods, but also through stricter observation of indications in older modes of interference. But the surprisingly great variety of measures recommended, as indicated in the literature, proves that these have not been generally accepted and that they do not have the desired results when undertaken by others. My remarks made in a paper read before the New York Academy of Medicine in 1904 will even to-day find very little opposition, namely, that except among the absolute followers of a certain mode of proceeding, hardly two laryngologists will treat the same case of laryngeal tuberculosis in the same manner.

It is not my intention to review at length all the remedies which have been mentioned in publications. It will usually suffice simply to mention them and give the names of the authors concerned, especially as a great number of these methods of treatment are sufficiently known, and as others have been applied in only exceptional cases. The foot notes which I have added to the text will refer anyone who may be interested to the publications in question. But I shall go more into detail when speaking of newer methods or of such forms of treatment as, although they have been used for a longer period, have been improved upon and have stood the test

of time.

I. Tuberculosis of the Nose.

Gerber, in Heymann's Handbuch der Laryngologie und Rhinologie, distinguishes four kinds: Tuberculous ulcer, diffuse infiltration, tuberculoma, and lupus. Of lupus I shall speak later in a separate paragraph. The first thorough work on tuberculoma was written by Professor Chiari,2 based upon the twenty-one cases which had thus far been published. The treatment depends naturally upon the character as well as upon the intensity of the affection, and can therefore be studied from five points of view:

I. Local treatment by drugs. Of the older remedies, Seifert' reports good results in tuberculosis and lupus of the nose from paramonochlorphenol, a drug which also has seldom failed me in nonulcerating laryngeal infiltrations. Magenau' has used phenol sulphoricinate; other remedies are salicylated creosote plaster and poultices of a I in 1,000 sublimate solution. Of caustics, the following have been recommended: Undiluted carbolic acid, by Steward; lactic acid in different concentrations; a mixture of lactic acid, formalin, and chromic acid, by Barwell, who was successful in curing a tuberculous abscess of the sæptum only by painting it daily during a period of four months; and, finally, tampons of an eighty per cent, lactic acid solution, by Hinsberg. The latter should be kept in place for about three hours; when a longer period of application is desired, alternation with a weaker solution should be made.

S. Irchir for Larymologic, 1894, No. 1, p. 121.
Toolandhingen suddintischer Laryngologen, 1896, p. 162, in the discussion on a page of the Hedderich Huam, 1897, p. 387.
Tenry Hospital Reports Inc. 6, 1997, 1998.
Proceedings of the Larkmological Society November 3.

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Grünberg' reports from Professor Körner's clinic in Rostock a cure of a microscopically verified, extensive tuberculous ulceration of the nose after an application of potassium iodide, which was ordered by a new assistant, who doubted the correctness of the diagnosis on account of failure with curetting, lactic acid, etc. Potassium iodide was afterward used in Professor Körner's clinic in many cases. Other good results have been reported by Wolters, and in a later communication by Grünberg," in a case of positive tuberculosis of the upper air passages. Holländer10 also prescribes in tuberculosis of the mucous membrane potassium iodide, but in combination with calomel, because he thinks that the former favors the chemotactic local action of calomel. The patient should take, a quarter of an hour before the application of the calomel, a tablespoonful of a five per cent. solution of potassium iodide, and then he either applies to the diseased site cotton saturated with calomel or injects into the tissue a one to two per cent. oily mixture of calomel, which should be well shaken before being used.

2. The hot air cauterization proposed by Holländer, which does not come in direct contact with the affected area, will be mentioned in the para-

graph on lupus.

3. Tuberculin preparations. It is a very pleasant duty for me to see these preparations so warmly recommended by Onodi and Rosenberg," especially as they have not been accepted so generally in America as they deserve, except with a few sanatoria and general practitioners. I am entirely of the same opinion as the two gentlemen are, but have been using the preparations also when other tuberculous inflammations were present. I never have seen disagreeable reactions or accidents from carefully increased doses. Only if there should be present extensive infiltrations of the larynx the greatest care or absolute forbearance becomes necessary to avoid the danger of suffocation from a swelling which may easily take place as a reaction. I have never seen a case of a patient becoming accustomed to the preparation.

Von Ruck12 has published the greatest number of cases of tuberculosis of the nose, cured with tuberculin preparations, which is known to me. He cites in the yearly report of 1903-1904 of his sanatorium in Asheville, N. C., eight such cases; in six patients tuberculosis was present in the sæptum, with perforation in two, and in two at the forward part of the lower turbinate. The preparation which is made in his laboratory, and which I also use, is a watery extract of tubercle bacilli, which has the advantage of being put up in three grades of concentration, of 1, 10, and 100, so that, for example, the tenth part of what is contained in a one gramme svringe of the second solution is equal to an entire syringeful of the first solution; thus further dilu-

tions do not become necessary.

4. Ray therapeutics. The Finsen light and the Röntgen rays have not been used so much in tuberculosis as in lupus. The difficulties of throwing the Röntgen rays into the deeper regions of the pharynx, larynx, and nasopharyngeal space have been overcome by the polyphos tube of Mader,10 who has had good results in other affections of the pharynx. During recent years good results have been reported from a protracted influence of the sun rays, which have been intensified by Tappeiner and Jesionek" by a permanent painting of the diseased location with a five per cent. solution of eosin during the raying. Brühl¹³ prefers a one per cent. solution of erythrosin, which solution produces a deep reaching effect of the yellow rays according to his statement; he then uses the rays from the yellow sodium light for two to ten minutes. Dr. Beck,16 of Chicago, has used radium, and, although his results in his first case were not satisfactory, has continued his experiments. Upon my inquiry, he has reported to me in a letter of April. 1907, three such cases, which I shall briefly cite:

Case I.—A woman, thirty-seven years of age, suffering from tuberculosis of the sæptum and secondary tuberculosis of the nose, was treated with Röntgen rays and later with radium. She was entirely cured, and according to the latest information was perfectly well eighteen months

Case II.—A woman, thirty-six years of age, suffering from extensive tuberculosis of the nose. She had used during five years all possible remedies without any results. During seven weeks she received applications of radium alternating with Röntgen rays. During the winter she went to Florida to recuperate, and returned entirely cured. No recurrence six months later.

CASE III.—'A boy, fourteen years of age, had been treated during two years with "Christian Science"; a sequestrum had formed in the back part of the nose, and he suffered from enlarged cervical glands. The sequestrum was removed, and for six weeks he was treated with radium of 1,000,000 activity. He still was entirely well sixteen months

The diagnosis of tuberculosis was confirmed in all three cases histologically and by other physicians.

5. Surgery. Although the remedies of which I have spoken have in some cases produced brilliant results, there are many disappointments to be reported. It is therefore only natural that we always come back to surgical interference.

Isolated tumors can be excised with a cold or hot loop, but this treatment is to be followed by a thorough cauterization of the affected area with lactic acid or the galvanic cautery. Ulcerations should be energetically curetted; diffuse infiltrations thoroughly spooned out, so as to remove all pathological material; for this purpose are used Volkmann's spoon and the several single and double curettes. If the infiltrations are too deep or too extensive to be removed by an intranasal operation, the nose should be split open or, if necessary, the parts should be resected, as resection of the sæptum has been performed by Onodi.1

Relapses are not rare, and these recurrences should be attacked with the same energy and perseverance as the primary affections. Steward18 has thus succeeded in finally curing a patient whom he had treated for three years.

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³ Arcks, für Laryngologie, swiff, p. 1, 1000.
³ Wessen ner me lignist e II v. F. n. co. 6, 1000. 21
³ Wessen ner me lignist e II v. F. n. co. 6, 1000. p. 200.
³ Forder hangen e diametes, hor La n. g. 7 g. 1000. p. 200.
³ Horston george, December, 1004. p. 85.
³ Care ner ottom memorie de laryngologie. No order and December 100.

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II. Tuberculosis of the Nasal Accessory Cavities.

Two years ago I collected for a paper read before the American Laryngological Association twenty-five cases which I could find in the literature on tuberculosis of the nasal accessory cavities,10 to which was added, during the discussion, by Professor Killian a case of his own which had not been published. In such cases surgical interference is the only remedy, and it must be much more radical than in the nose, as all the bones which have been involved must also be removed.

The results of these operations are not encouraging, as only one cure could be reported in five cases of tuberculosis of the maxillary sinuses. But there are no reports about the later condition of these patients, with the exception of a patient of Dr. Coakley, of New York, who was operated upon in 1900, and who presented himself in 1907 without any

signs of tuberculosis.

III. Tuberculosis of the Postnasal Space.

Glas²⁰ reports a case, the only one of its kind, of a cure of tuberculous ulcers, the character of which had been proved histologically, with the expulsion of a sequestrum of the vomer, with potassium iodide, although he admits, on account of the surprisingly good results, the possibility of a complication with syphilis. Interesting also are the cases of Pluder21 and Schatz.22 The first treated a case of extensive tuberculosis of the nasopharyngeal space and pharnyx with curetting and lactic acid; a cure was produced, but with the formation of a synechia between the fauces and the palate. Schatz's patient suffered from growths in the posterior nares, tuberculomata of the nasopharynx, and lymphomata of the throat. An improvement appeared after the extirpation of the lymphomata, and a cure after the expulsion of the back part of the vomer.

Tumors, tuberculomata, are seen more frequently than abscesses, and Hajek²⁰ published the first case of this kind. The treatment can only be surgical, and the growth can be removed, according to its location and size and the preference of the operator, with the curette, the cold or warm loop, or the

nasopharyngeal forceps.

It would be very interesting to speak here of infection through the tonsils, a question which lately has become very prominent, viz., as to the physiological action of the tonsils, their action as organs of defense or as a theory of infection. But the limitation of this paper prohibits such a discussion. Latent tuberculosis of the hypertrophied pharyngeal tonsils is now generally admitted. But the reports on the frequency of the occurrence are not yet uniform. Lewin24 found in 905 cases, reported by nine authors, five per cent., Cornet's25 statistics include 1,745 cases in which tuberculous areas were demonstrated histologically in externally unsuspicious adenoid vegetations. Tuberculosis was found seventy-one times, or in 4.1 per cent. The number of cases of twenty-one authors range between negative results

reported by twenty per cent. of positive results. The latter figure, though, in only ten cases of operation

The extirpation of hypertrophied faucial tonsils is as important as is the necessity of finding out the possible existence of tuberculosis of the tonsils. Careful after treatment, such as by cleansing, cauterization of the wound, etc., is to be recommended, to prevent a possible infection and spreading of the tuberculosis after extirpation of the tonsils. In this connection I wish to say that I prefer an anæsthetic in the radical extirpation of even tonsils that are not infected. I have seen the development of tuberculosis of the lungs in consequence of neglect of such careful after treatment after an operation in an entirely latent affection of the tonsils; luckily the patient recovered under climatic and specific treatment.

We have to be, furthermore, on the lookout for the existence of infiltrated lymphatic glands. The removal of these glands should be insisted upon. Blumenfeld26 has lately demonstrated the importance of enlarged intrathoracic lymphatic glands, which appear sometimes in the course of adenoid growths, and which may be suspected to exist when bronchitis and catarrhal affections do not disappear after removal of the adenoids. In such cases general treatment becomes necessary. I myself have been able to prove the correctness of Blumenfeld's observations during the past winter in successfully treating a child that after such an operation still

suffered from a cough.

IV Tuberculosis of the Pharnyx.

Remedies which have given good results to physicians who used them, but which I do not find mentioned otherwise, are: Menthorol, advocated by Logucki,27 an addition of menthol to parachlorphenol as a corrigent; and anæsthesin, which Finder23 has found very useful by insufflation of the base of a tuberculous tongue. Recommended also are pyoctanin, papayotin, hydrogen peroxide, chromic acid, and carbolic acid; but the principal remedies are lactic acid, independently or after curetting, and trichloracetic acid, which latter has been repeatedly recommended, Veis²² being especially an advocate of it. The judicious advice of Schroeder and Blumenfeld³⁰ should be followed in localized cauterizations, especially when they are to be repeated. These authors remark that there exist cases of tuberculosis of the pharnyx which react unfavorably upon cauterization, and which only show signs of healing or are cured under a mild and simply disinfecting treatment.

The use of tuberculin preparations in tuberculosis of the pharnyx is well warranted, but the local treatment should not be neglected on this account. The injections show the best effect with observation of the opsonic index, that is, interruption during a descending index and resumption on an ascending one. Wood uses in addition the precaution of performing operations only during the later stage.

¹⁶⁷ can retions of the American Lawing degrad Association, 1907; and France Februard are de law on degrae Lune, 1997.
20 Wiener Klinische Wochenschrift, 1906, No. 31.
21 Inter Intelligent Marchen Lung, 1891.
22 Internation Korny Berg, 1899.
23 Archive für Laryngologie, ix, p. 377, 1899.
24 Archive für Laryngologie, ix, p. 377, 1899.
24 Internation. Second Falthon, 1907, iz. 261.

²⁴ er sammlung deutsel er Jertze und Naturforscher Dresden, 1907.
²⁷Internationales Centralblatt für Laryngologie, xvi, p. 321, 1900.
*Terhandlung der berliner laryngologischen Gesellschatt, Maich

 <sup>15. 1903.
 16</sup> hrs ho Leconyclegie, Nii, p. 363, 1902.
 16 hrs ho Leconyclegie, Nii, p. 363, 1902.
 16 Hondbuch der Therapie der Lunceiwerkeinsen bl. 1904. p. 368
 16 Journal of Luryipol gr. Lebinary, 1902.

Some advocate the use of the solar rays, which treatment should extend over a long period. But Weiss reports the case of a tuberculous abscess on the lower lip which he had treated for months by painting with eosin without success, and which healed only when he included in the treatment the rays. The application took in all eighty hours; the evening before treatment an application of a fifty per cent. lactic acid solution was made by means of cotton compresses. Botey³³ cured an ulcer of the tongue by the application of radium during a period of several weeks, each application lasting thirty to forty minutes. Surgical interference, but only in healthy tissue, will become necessary in tuberculosis of the tongue which cannot be improved by curetting or the use of lactic or trichloracetic acid. The results will then be similar to those of operations for carcinoma in the first stage, as was reported by Butlin in the British Medical Journal for May,

Tuberculosis may also attack the lingual tonsil, the uvula, and the hard and soft palate, and we find in the literature the reports of perforations of the latter. These complications are very dangerous and make energetic interference necessary. Katz™ has cured such a perforation in a tuberculous patient by removal of the edges with the galvanic cautery loop and lactic acid. Tuberculous synechiæ appear very seldom, and only Loewey reports, from the clinic of Schroetter, a case of complete adhesion of the soft palate with the wall of the fauces; this adhesion was separated during the treatment and remained so. The case history of this married woman, which takes in a period of over thirteen vears, is also interesting for other reasons, and it demonstrates that even severe cases can be cured if the physician is patient and devoted and the patient is persevering. The patient suffered during her illness from tuberculosis of the lungs, larynx, and pharvnx. Tracheotomy was performed, later the synechia of the pharynx was separated, and finally the larynx was dilated with tin bolts to make the removal of the cannula possible. The lungs were finally thoroughly healed, as bacilli were not found a year and a half later, and a hoarse but audible voice took the place of the former aphonia.

It is absolutely necessary to remove thoroughly the hypertrophied palatal tonsils, whether they show any signs of tuberculosis or are without any visible affections in tuberculous patients. Special attention should be paid to both the poles; the lower and especially the upper continuation should not be overlooked. Amygdalotomes are not well adapted to these cases, and I prefer for the entire excision of the tonsils the spoon forceps of Hartmann or of Grünwald. The after treatment is very important. and we cannot do without silver nitrate, lactic acid, etc. Professor Chiari, some years ago, called attention to the infiltrated glands and urgently advised the excision of such localized lymphatic

I do not think it is necessary to give a detailed description of the surgical intervention in tubercu-

"Market for collection of the Market for the Market "Berliner klinis, o W o'enselvift, 1800, Nos. 4" and 4" losis of the pharynx, especially as most of these operations have been described under the diseases of the several organs, and as we are all well versed in the use of and indications for scalpels, curettes, excising instruments, galvanic cauteries, etc. But I wish to call attention to a point on which I have spoken before, that is, not to stand idly by in cases which seem to be hopeless, but on the contrary to double our efforts even if they should only be crowned with success in exceptional cases. An example of this kind is the case which I reported in 1890, at the International Congress in Berlin, and which since then has been mentioned in the literature. It was the severest case of tuberculosis of the pharynx and larynx which I have seen in a practice of forty years, and one which I always took for a primary attack. The patient, whom I have lately seen, is in the best of health, weighs more than before her illness, has given birth to two healthy children, and never has had before and after any signs of lung tuberculosis.

Gluck⁸⁷ has shown by the description of his method of operation and demonstration of patients at the Convention of German Naturalists in 1906, and in the Berlin Laryngological Society, November, 1906, that even the most desperate cases of tuberculosis of the upper air passages are accessible to surgery. Of thirteen patients whose cases had been far advanced and upon whom radical operations had been performed, eleven were cured; among them a man upon whom he had resected, on account of extensive hyperplastic tuberculosis, the tongue, the thyreoid, the larynx, the upper part of the trachæ and of the œsophagus, the pharynx, and the large vessels of the right side.

Lupus.

I can make a very short report on lupus, as the pathological process of this disease is always the same, although the objective manifestations very often present a different picture. This fact has only lately been emphatically demonstrated by Cadoche. We therefore find useful the same remedies which I have mentioned in the treatment of tuberculosis. As I do not wish to repeat myself, I shall only give such remedies as are either especially recommended for lupus or which I have not mentioned before.

Among the chemical remedies, pyrogallic acid has been very well endorsed, among other authors, by Onodi and Rosenberg," who state that it has a certain elective efficacy. There have also been used painting with a fifty per cent. solution of zinc chloride, by Heddmann; painting with ten per cent. formalin, also in combination with lactic acid, by Tretrop; " rubbing with twenty per cent. paramonochlorphenol, by Seifert: 2 and ethylchloride, but the reports about this remedy are less favorable.

Holländer's hot air cauterization without direct contact consists in an application of air heated to from 300° to 400° C. (572° to 752° F.) to the

of Manager, but the activate both over Manager and All the destruction of the manager and the second activate and the second activate and the second activate activate and the second activate a The set and never the set of the

affected area without touching it. Favorable reports have been made about this treatment, by which ischæmia of the skin is produced; the lupus cannot take part in this anæmia on account of deficiency of contractile tissue, and while the skin shrinks the lupus becomes more exposed; it is then heated to such a degree that the bacilli are killed and necrosis appears. Holländer has also split open the nose to expose the deeper tissues to the heat. Adrenalin increases this action. Among a hundred cases he hardly found one where the patient did not react to the treatment; among the cases were three laryngotomies.

I shall not refer to such surgical interferences as ignipuncture, thermocauterization, galvanic cauterization, curetting, and excision, as they offer nothing new and as it can be taken for granted that they are

known to all.

Ray therapeutics has a wide field in lupus, and the Finsen light especially gives good results in lupus of the nose. Schiff" asserts that he was the first to use Röntgen rays, which are at present employed quite frequently. Interesting is the observation of Hull, who explains the results of the action of the Röntgen rays upon lupus by the development of opsonins, through which action the microorganisms become an easier prey to the phagocytes. He comes to this conclusion from the successful raying of a lupus after a careful treatment with tuberculin, which stimulated the formation of opsonins, while before its use the lupus did not react to the

Some others have also used radium, and Botey 40 cured a case of ulceration of the point of the nose and lower turbinated bone in twelve séances of about thirty minutes each. In the discussion which followed the paper read by Meyer's before the Dutch Society Delseaux stated that he had found that adrenalin increased the action of radium. Sun rays with and without fluorescent substances, such as eosin, etc., have been applied to lupus. It must be stated finally that Nepovoshny's produced a serum in dogs by the artificial formation of a leucocytosis with the subsequent injection of the endotoxine of tubercle bacilli. Peterson" reports a good result in a case of lupus with this serum.

It is selfevident that the well known diatetic, hygienic, and climatic rules should be absolutely observed, as the greater number of patients also suffer

from tuberculosis of the lungs.

Surgical interference as well as lactic acid, and the galvanic cautery will always preserve their full value, and especially is the latter well recommended at present by many authors. Of the newer remedies, there have to be mentioned Holländer's hot air cauterization and the different kinds of ray therapeutics, the Finsen light, and solar rays with or without fluorescent remedies. We also may expect more and better results from continued experiments with Röntgen rays and radium. I myself have had the best results from surgical operations, the galvanic cautery, parachlorphenol in intact infiltrations, lactic acid in ulcerations, and tuberculin preparations in proper cases.

616 MADISON AVENUE.

A CASE OF POSTDIPHTHERITIC MULTIPLE NEURITIS WITH VESICLE INVOLVEMENT.

BY CARL D. CAMP, M. D., Ann Arbor, Mich.,

Clinical Professor of Nerrous Diseases at the Charlest of gan; Formerly Instructor iin Neuropathology and in Electrotherapeutics in the University of Pennsylvania, etc.

The noninvolvement of the sphincter of the bladder in multiple neuritis is usually regarded as so certain that it is used as a point in the distinctive diagnosis between multiple neuritis and spinal cord disease. Oppenheim in his textbook says that in exceptional cases of multiple neuritis there may be incontinence, but many other authorities hold that sphincter control is never lost. It seems that loss of control of the sphincters of the bladder in multiple neuritis is sufficiently rare to justify putting on record a case of postdiphtheritic multiple neuritis in which the patient had incontinence of urine. I have to thank Dr. William G. Spiller for the privilege of reporting this case.

CASE.—The patient, a Russian weaver, aged twenty years, was admitted to the nervous service of the Polyclinic Hospital on the 9th of April, 1907. During January of that year he was in the Episcopal Hospital of Philadelphia, suffering from typhoid fever. Soon after convalescence from the typhoid he was attacked with diphtheria and was removed to the Municipal Hospital. At the time he left the Municipal Hospital he noticed that his hearing was impaired, that his voice was weak, and that when drinking fluid there was a regurgitation of the fluid through the nose. About a week later he noticed that his hands and legs felt numb and weak, and at the same time he had in-continence of urine; "he could not hold his water," soiling his clothes and his bed. Examination at the time he was admitted to the Polyclinic Hospital showed a fairly well nourished young man, very deaf, and with a very weak voice. His gait was uncertain, ataxic, and there was voice. His gait was uncertain, ataxic, and there was bilateral foot drop, more marked on the left side. His station was poor, and the sway was made worse by closing the eyes. There was no paralysis of the face, tongue, or extraocular muscles. There was a hyperæthesia in the ulnar distribution of the left hand and the grip of both hands was used. Power of flexion and extension of the legs was weak. Power of flexion and extension of the legs was fair, and he felt a pin prick normally, though he complained that his legs felt numb. The knee jerks and the Achilles jerks were absent, and there was no Babinski reflex. Ocular movements were normal. The pupillary reaction to light was prompt and was present though slight to accommodation. There was some tenderness on pressure in the muscles of the arm and over the perineal nerves, also on pressing the calf muscles. At an ear examination made by Dr. Walter Roberts the hearing of tuning forks showed Dr. Walter Roberts the hearing of tuning forks showed Rainnes's test to be negative on the left side and practically absent on the right side. It showed also a lateralization of sound to the left ear. Hearing of low forks (fifty vibrations) was lost in both ears. High forks (two thousand vibrations) were heard well in the left ear, but faintly perceived in right. Examination of the right auditory canal showed an almost destruction of the drum membrane with a granulating reproactory and a slight discharge. The with a granulating promatory and a slight discharge. The left ear showed some tenderness around the auricle, especially in front, and a considerable tenderness and swelling of the cutaneous meatus. There was no view of the ear drum on account of the swelling. The examination would point to extensive nerve involvement on the right side, with

probably obstructive deafness on the left side. Examination on April 22d showed that under treatment the hearing in the left ear had improved, but in the right ear it had remained about the same. He could dorsally

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flex the right foot slightly and had nearly normal movement of the toes. He could move the toes slightly on the left side, but not the ankle. His gait was slightly improved, but he was still very ataxic and had a marked Romberg's sign. He still had marked tenderness in the calves of the legs. There was a paralysis of accommodation, ordinary print becoming blurred at a nearer point than twelve inches. His voice was still weak, but liquids no longer regurgitated through the nose. ment of the toes. He could move the toes slightly on the

It is interesting in this particular case to speculate on the part played by the previous attack of typhoid fever on the production of the symptoms of deafness and vesical involvement, both of which are so very rare after diphtheria. It is well known that the toxine of typhoid frequently exerts its effects on the nervous system by producing deafness, and less frequently symptoms of myelitis. It may be, therefore, that in this case the typhoid toxine produced a condition of lowered resistance in these parts, making them the more readily affected by the diphtheria toxine.

300 SOUTH STATE STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXV. How do you treat cholera infantum? (Closed

June 15, 1908.)
LXXVI. How do you treat acute articular rheumatism?

(Answers due not later than July 15, 1908.)

LXXVII. How do you treat varicose ulcer? (Answers

LANTH. How do you treat various ulter? (Answers due not later than August 15, 1908.)
Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$82. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUINED) that the answers be short; if practicable, no one answer to contain more than six hundred wards.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and

answer must be accompanied by the writer's jut name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. The prize of \$25 for the best essay submitted in answer to question LXXIV has been awarded to Dr. Henry C. Becker, of New York, whose article appeared on page 1244 of Volume LXXXVII.

PRIZE QUESTION LXXIV.

THE TREATMENT OF SUNSTROKE. (Continued from Volume LXXXVII, p. 1247.)

Dr. G. W. Longenecker, of Elsinor, Kansas, states:

Sunstroke, or more correctly speaking, heat stroke, or thermic fever, is an affection produced by exposure of the body to an excessively high temperature. This condition is usually seen in men working in the sun on very hot days. Persons suffering from sunstroke may die almost instantaneously, the result of failure of respiration and cardiac action. The majority do not live longer than two or three hours. Thus it will be seen that the prognosis is very unfavorable. Heat exhaustion must not be mistaken for sunstroke, as the treatment of these two conditions is exactly opposite.

In true sunstroke the symptoms develop suddenly. The surface is flushed and hot, the pulse quick, and either bounding or weak, the breathing rapid and shallow. The temperature is very high, ranging from 106° to 110° F.

The first step in the treatment is to reduce the excessive temperature. Rubbing with ice or the cold bath will accomplish the most good. The patient should be put upon a bed covered with a rubber blanket and rubbed with pieces of ice. An ice cap should be placed to the head and ice bags to the back of the neck and along the spine. If ice is not obtainable the cold bath or cold sponging may be used. The patient should be rubbed vigorously while in the bath and cloths saturated in cold water may be used to the head and neck instead of the ice bags. These should be changed every five minutes. If able, the patient should drink cold water. The cold enema is also one of the most valuable means of reducing temperature. A rectal tube should be attached to a fountain syringe and four or five pints of cool water thrown into the colon. This should be retained ten minutes if possible. Without removing the rectal tube the water may be allowed to escape and the injection repeated. To prevent premature expulsion, it is best to begin with the water near the body temperature and rapidly lower it by adding cold water in sufficient quantity to produce the desired temperature. The enema, with the ice rubbing or cold bath, should be continued until the temperature is reduced to 101° or 101.5° F. If ice or cold water is not at hand, water of a sufficiently low temperature may be obtained by adding ammonium nitrate, eight ounces to the quart. If the pulse is rapid and weak, stimulants should be used-strychnine, whiskey, and digitalis. If convulsions occur, chloroform should he administered.

After the temperature is reduced the patient should be covered lightly and closely watched, as the fever may return in a short time. Should this occur, the same treatment must be carried out until the temperature is again reduced.

When the temperature is under control the patient must remain quiet and should be kept under observation, as meningitis is likely to develop in two or three days.

The bowels and kidneys should be kept active, and a light nourishing diet prescribed. Tonics should be given and sedatives if necessary.

Meningitis is characterized by violent darting pains in the head. There may be little or no fever. The treatment of this complication requires heroic measures. Venesection is the best method for obtaining relief. The bleeding should be copious and may be done by opening any of the large veins of the arm. Veratrum viride and aconite may be given. Quinine is contraindicated. If life is preserved without vascular depletion, secondary changes in the brain may occur, causing insanity, imbecility, or optic atrophy. In addition to venesection the treatment of the condition is principally Tonics and sedatives should be symptomatic. given. Rest and light nourishing diet. When necessary rectal feeding should be used. Cold applications to the head and back of the neck may be useful. Strychnine and digitalis may be required in some cases.

The physician must be on the lookout for any

complications which may arise and if his patient recovers he may feel that he has won a great victory.

Dr. Robert A. Bachmann, United States Navy, observes:

Sunstroke may be conveniently divided into heat exhaustion and thermic fever or siriasis, two widely different conditions requiring almost opposite treatment.

Heat exhaustion is caused by a weakened physiological resistance succumbing to a high temperature not necessarily solar. It consists of a sudden syncope. For treatment the patient is immediately removed from source of heat, clothing loosened, if temperature is subnormal, placed in warm bath or surrounded by hot water bottles or blankets. Respiration and pulse are stimulated by strychnine, gr. 1/20; and atropine, gr. 1/100. Hot coffee is useful. For immediate restoration a whiff of ammonia is of service. Take rectal temperament repeatedly until it reaches normal. Let patient recover then in cool, dark room. Convalescence should require several days' rest in bed with tonics

and light diets.

Siriasis has been ascribed to infection (Samborn), actinic solar rays (Duncan), congestion of blood due to loss of fluid by sweating (Senftleben), hygienic errors, malaria, and acute diseases. It consists of a brief prodromal stage followed by coma; complete unconsciousness; hyperpyrexia; depressed respiration and pulse; contracted pupils; and dry, hot skin. These symptoms demand immediate and vigorous treatment. The hyperpyrexia is best combated by iced tub baths, and in severe cases where the fever reaches 108° to 110° F. by placing patient stripped on stretcher which has been covered by a rubber sheet, with head slightly raised to assist drainage, surrounding him with ice, rubbing ice on body and head, while ice water in fine streams is dripped over him from an elevation of five to six feet. Take rectal temperature constantly, and when it falls from 106° or 107° to 102°, or from 108° or 110° to 103° stop these measures. If temperature persists pack rectum with ice. Often the ice pack, ice water bath, ice rub, or ice water drip alone are sufficient to reduce the temperature, and instead of packing the rectum with ice, ice water enema can be tried. The guide in all cases is the thermometer, and the treatment must be graded according to the way the temperature falls. The skin should be rubbed vigorously all the time in order to bring the hot blood to the skin, thus preventing internal congestion and aiding radiation. Cool the head especially well with ice pack or a fine stream of ice water, played on forehead for a minute or two to prevent subsequent meningitis.

If malaria is suspected inject ten grains of quinine hydrochloride at once. Support the heart by a hypodermatic injection of tincture digitalis, thirty

minims, before bath.

After the temperature has been reduced, dry the patient well, wrap him in dry warm blanket to produce sweating, and place him in a cool, dark room.

In plethoric cases, with cyanosis, labored breathing, and high arterial tension, puncture one of the

median veins of forearm after constriction and allow 100 to 150 cc. of blood to escape. Some recommend transfusion of normal saline solution through the same needle. If convulsions occur give cautious inhalations of chloroform. Avoid atropine and strychnine. The former because the establishing of perspiration is desirable, and the latter on account of the irritation to meninges and spinal cord. The coal tar antipyretics are worse than useless. Where the respiration has apparently failed artificial respiration should be tried in every case. Seemingly hopeless cases have been saved that way (Chandler).

The after treatment consists of giving bromides in the event of nervous irritability coming on; tonics for the improvement of general nutrition and the prevention of later exposures that might cause a

relapse.

To prevent siriasis, alcoholic and dietary excesses, especially in meats, should be strictly eschewed by all people who are unavoidably exposed to heat and sun. The clothing should be light in weight, loose, and the under garments made of thin woolen fabric. Outer garments should be lined with thin orange red material. It is usually practicable to attach strips of this cloth so that the shoulders and spinal cord at least are protected. In going out in the sun a broad pith helmet lined with orange red lining and affording ventilation to the scalp should be worn. Further protection is obtained from an umbrella. Generous drinks of water and mild beverages, regular but not violent exercise, and avoidance of damp evening atmospheres are to be recommended.

Dr. Boyce, of Pittsburgh, Pa., remarks:

The first essential to success is instant and certain recognition of the condition. Textbooks give distinctive tables of heat stroke or insolation and heat exhaustion. In the presence of the typical case, even the tyro can dispense with the table. The crisp, hot skin, the flushed face, the throbbing carotids, the convulsed or at least stiffened muscles, the labored, stertorous breathing, and the type of stupor or coma give a picture as diametrically opposite to that of simple exhaustion from heat, as can well be imagined. The atypical case is to be distinguished rather from uraemia and from apoplexy. For this a temperature above 103° F. will usually suffice. It is to be admitted that certain cases of pontile hæmorrhage give a syndrome clinically indistinguishable from insolation. This condition is very rare and almost hopeless. So it seems the part of practical wisdom to ignore the possibility if there is a history of exposure to radiant

The diagnosis having been made, efficient hydrotherapy will prove (where circumstances make it practicable) the most satisfactory measure. One attendant should be set to chipping ice and wrapping it into packets of convenient size, to be placed about the head, along the carotids, in the axilla, and on the groins. One or more others should strip the patient, lay him on a rubber sheet, and sprinkle him from head to foot with ice water, sousing it on out of towels or sponges, or from a garden sprinkling can, or from a syringe with

rose nozzle. Light, active friction to equalize surface temperature is very useful. The time element is very important, and there should be no delay. Better to apply the best measures at hand, than to wait to transport patient any distance. At worst the clothing can be loosened about neck and waist, and cool water dashed from pitchers against temples

As soon as the hydrotherapeutic measures are well arranged the physician must consider blood letting, remembering that his training has left him more prone, in this regard, to the sin of omission

than to that of commission.

Venesection may sometimes be the primary measure, because immediate hydrotherapy is impossible. It may rank as the first adjuvant because of an excessively full and bounding pulse, or (when tension is only moderately increased) because of the prominence of coma of an apoplectiform type, or of labored breathing and cyanosis. If after half an hour of hydrotherapy the temperature is not lower nor the symptoms abating, bleeding is justifiable save only when pulse tension is actually below the

Chloroform is recommended for convulsion. It seems uncalled for save when assistance is scant and the violence of the convulsions interfere with other

Stimulants are often used, seldom needed. Saline solution by vein or cellular tissue may be indicated after free venesection. Otherwise our choice lies between ammonia for general prostration with impending death, atropine, gr. 1/60, if the chest is full of moist rales to the drowning point, strychnine, gr. 1/30, for the respiratory centre, or with sparteine, gr. 1/4 to i, for the heart.

Success will oftener be reached by steady perseverance with the methods mentioned than by an excited scurry down a longer list in the hope that

if one thing does not benefit another may.

As this is all emergency work a word as to extemporized means may be permitted. A towel or handkerchief and a pocket knife, razor, or button hole scissors are all that are needed for venesection. The tip of an ordinary medicine dropper is a good intravenous canula. Any physician should be able to give hypodermoclysis with a Davidson syringe, a piece of rubber catheter, and the needle from his hypodermatic case. Hydrant water with a heaping teaspoonful of table salt to the pint, boiled for ten minutes, is saline solution sufficiently near normal.

The temperature having been reduced, and the immediate danger being past, after care becomes important. Whatever is our theory as to the primary pathological mechanism of sunstroke, hypertoxicity of the blood is a demonstrated factor. It is important therefore to limit intestinal absorption. If the attack followed a heavy meal, or if the stomach seems distended and painful, or if there have been ineffective efforts at vomiting, gastric lavage is indicated. Two ounces of magnesium sulphate in saturated solution should be left in the stomach. Otherwise, ten grains of calomel in butter should be placed under the tongue, to be followed in a few hours by salines or a colon lavage. The kidneys are to be closely watched. If suppression of urine or other signs of renal insufficiency appear, we may

employ wet cups to loin, and veratrum or nitroglycerin, if blood pressure is high; intravenous saline, caffeine, digitalis, and sparteine if it is low.

For the headache which so often follows, I employ chloral; bromide and ergot, if it is dull, general, and accompanied by drowsiness or injected conjunctivæ. When it is localized and lancinating acetphenetidin is more effective.

After recovery we must insist upon a considerable period of mental and physical rest. The use of bromide and ergot in this period, to be followed by small doses of iodide, seems rational, though it is difficult to demonstrate an effect clinically.

Finally the patient must be instructed in the prophylactic treatment as follows: During hot weather avoidance of exposure and of special mental and physical exertion, abstinence from alcohol and from diet excessive in quantity or indigestible or irritating in quality; rest and hydrotherapy on the slightest premonitory symptom of another

Dr. Henry Lynde Woodward, of Cincinnati, says:

In treating sunstroke the first and most important feature is the quick reduction of the excessive temperature; this is best accomplished by the external and internal application of cold.

The patient, stripped of clothing, is placed in a tub of ice water, an ice bag is placed on the head and the body rubbed all over with ice. At the same time a high rectal injection of ice water is given. Often the hypodermatic injection of nitroglycerin just before the bath will aid in the rapid loss of heat, by helping to dilate the peripheral vessels.

If the heart is flagging stimulants as strychnine or caffeine are indicated. Often this vigorous treatment will in fifteen minutes reduce a temperature of 108° or 109° F., or even higher, to nearly normal, and the patient, who has been comatose or delirious.

will regain consciousness.

The patient is then rubbed dry and placed in bed with light covering, and evaporation aided by fan-

ning, an electric fan being best if at hand.

The after treatment consists of an ice cap to the head, with the fan, or at least good ventilation, and stimulants, if required. A liquid or light diet with plenty of water will aid in the prevention of nephritis, which is a frequent complication. If hyperpyrexia recurs, which is not frequent, the ice bath can be repeated as often as necessary. If a tub is not at hand the patient can be wrapped in a sheet, packed about with ice, and rubbed with ice, or if ice cannot be obtained, sprinkling with cold water from a hose or watering pot is a fair sub-

While this initial treatment may seem severe it is life saving in many instances, and the sooner it can be applied the better.

Dr. T. Haven Ross, of Cato, N. Y., writes:

Sunstroke, or more accurately thermic fever, the coup de soleil of the French, may be considered in three grades: The overwhelming attack which is always fatal instantly or within a few minutes, the acute seizure which may kill in half an hour or more, or from which, under appropriate treatment, the patient may recover, or pass into the

Marie Jok 1

last class of subacute, or chronic cases. Excessive heat is the cause of all, and our treatment applies to the acute and subacute cases, as the fulminating ones are fatal before any treatment can be instituted, and the chronic cases so called are really sequelæ of the acute.

As the oral or rectal temperature may approximate 108° to 112° F. at the time of seizure the essential thing is to extract the excessive heat from the body as soon as possible; next support the heart and respiration until normal conditions are regained. Get the patient quickly into the shade, if in the open, in any case to as cool a spot as is available where fresh air is plentiful. Place him prone and remove all clothing and pour cold water over him by the bucketful until the temperature drops to 99° or 100° F. Then give him 1/2 ounce of whisky containing 10 drops of tincture of digitalis, and get him to bed. Watch the temperature and heart. If the temperature rises again, as it is apt to do, either wrap him in sheets wet with cold water, rub him from head to foot with pieces of ice, or place him in a bath tub full of water at 60° F. and cool it gradually with cold water or ice to the desired point. If needed repeat the whiskey and digitalis as indicated, The temperature then usually drops to normal, or nearly so, and stays there. After returning the patient to bed if the temperature should again rise repeat the cooling process. When I am quite satisfied that the temperature is under full control I often give, always if nervous unrest appears, a small dose of morphine and atropine hypodermatically. Follow up this active treatment with a general tonic, paying especial attention to the hepatic con-

tion. Thus will be avoided annoying sequelæ. In cities an ambulance will be called for the victim of heat stroke, and it should be provided with ice. The patient should be stripped naked as soon as he is in the wagon and rubbed all over with ice continuously the whole way to the hospital or his home. I have known of deaths from sunstroke caused by the delay in treatment due to the lack of ice in the ambulance. As a few moments may mean life or death the ambulance surgeon, if he has no ice at hand, should give the cold water treatment on the spot before starting for the house. Cold water and something to carry it in are almost always at hand. Arriving at the hospital, or the home, if it contains a bath tub, I prefer the immersion at 80° F. gradually cooled with ice, to the other methods. The patient is best wrapped in a dry sheet and lifted into the tub, and it may require an hour therein to reduce the temperature sufficiently. I do not approve of the use of the coal tar derivatives as advocated by some, because of their depressing effect on the heart.

As already remarked, some patients are so overwhelmed at once that there is little or no time to do anything, but if there is a chance at all bring cold to bear on the naked body; clothing interferes with evaporation. If I were so situated as to be unable to use cold I should not hesitate to bleed the patient at once as his only chance.

It may be well to caution against carrying the cooling process too far. In a few instances I have seen the temperature reduced to normal without any return of consciousness, and have then applied

counter irritation to the scalp (shaven if possible) and nape of the neck in form of rapid blisters, with good results in most cases, but two patients, according to my records, died in coma with a normal rectal temperature.

As to sequelæ, the one almost invariably met with is inability to endure heat, natural or artificial. Care must be taken to avoid heat, especially moist heat, as the moisture in the air retards or prevents radiation of heat from the body, there may be cephalalgia, vertigo, tremors, dyspepsia, toxic intestinal neurosis, and even epileptic seizures. The most serious is a condition of chronic cerebral and meningial irritation following thermic fever. The diet should be arranged so as to be highly nourishing without being irritating, the liver should be carefully and persistently looked after, and general tonic measures, external and internal; instituted and persevered in. Where any signs of meningitis appear I use freely, even brutally, the actual cautery and a long course of mercurials and iodides. Persistence will win, but it may take months.

Dr. George B. Foster, of Lynn, Mass., says:

Teach the people the preliminary symptoms, which taken as warning may prevent the more dangerous symptoms. They are, as a rule, nausea, cramps, increasing weakness, vertigo, headache, and cessation of the respiration. These symptoms should warn, the person of his danger, and should persuade him to seek a cooler place.

When a patient suffering from sunstroke comes under the care of a physician he should be treated as follows: I. Remove all clothing. 2. Place patient on bed, which should be covered with a rubber blanket or oilcloth. 3. Place large quantities of ice about the head. 4. Apply cold to body. Ice water applied with sponges or cakes of ice may be rubbed over the body, especially the abdomen, chest, and back, and while this is being done the patient should be rubbed thoroughly and briskly to bring the hot blood to the surface.

In the more severe cases cover the patient with a sheet, upon which place pieces of ice, and then ice water in dippers at a distance of five to ten feet are dashed with force upon the patient for thirty or forty minutes, according to the fall of temperature. In cases where this fails, pouring a fine stream of ice water on the forehead for only a few minutes may give results.

Digitalis should be given hypodermatically during the bath; thirty or forty minims should be used, except in cases where the face is cyanotic, pulse bounding, and the heart laboring; venesection should be practised in these cases, intravenous injection of normal salt solution should be freely used, and later digitalis in small doses.

When temperature reaches 102° F. (temperature should be taken by rectum) throughout this cold treatment, cold applications should be stopped and patient allowed to lie in bed covered only with a thin sheet.

Watch temperature; if it bounds up again cold must be applied again with same care.

In cases of prolonged unconsciousness nourishment and stimulants are given by means of the stom-

ach tube. Artificial respiration should be used in severe cases, persisted in for half hour or more.

After the fever has been reduced watch the patient carefully for complications. Meningitis sometimes develops; venesection is the best treatment, although vascular sedatives may be tried, as veratrum.

After treatment should consist in light diet, stimulants, fresh air, and sudorifics, liquor ammonii ace-

tatis in large doses.

Heat exhaustion.—Use heat instead of cold, body recumbent, head low, use hot water bottles or hot bricks, or give hot bath 105° to 110° F. As stimulants use brandy, one ounce; if patient can't swallow, give brandy by rectum or whiskey and digitalis hypodermatically. Watch temperature.

Dr. H. B. Blakey, of Columbus, Ohio, states:

Sunstroke must be distinguished immediately from coma and heat exhaustion. In heat exhaustion we find the patient in a state of collapse or extreme prostration, with a small pulse, the temperature possibly subnormal, with a history of exposure to great heat. In sunstroke we oftentimes find the patient unconscious, the face flushed, the pulse rapid and soft, the temperature varying from 107° to 110° F, with a history of direct exposure to the sun's rays. The temperature should be taken immediately, in every case, as much depends upon this finding.

A case of sunstroke demands an immediate lowering of the temperature. Hydrotherapy is the best means by which to accomplish this result, using: I. The tub bath. The patient should be stripped and placed in a tub of water at a temperature of about 70° F. The water should be further cooled, by adding ice, until the temperature of the water is about 50 degrees. 2. The ice pack. The patient should be stripped and placed in a wet sheet; ice should be packed along the trunk, the extremities, under the arms, and around the neck. At the same time, part by part, the whole body should be exposed and rubbed with masses of ice. 3. If neither the tub nor the ice pack is available, it may be expedient to place the patient under a faucet, turn the hose on him, place him under a pump, or pour bucket after bucket of water over him. The use of an ice water enema has yielded good results as an accessory to these methods.

As the temperature falls from one to two degrees after the patient has been removed from the bath or pack, it is important to remove the patient when the rectal temperature is not less than 100° F.

The use of antipyretics is permissible as an aid, but never as a substitute to hydrotherapy. Antipyrine, in 15 grain doses, or quinine sulphate in ten grain doses, has yielded good results in my hands.

The complications following immediately upon or during a case of sunstroke are: Intense asphyxia, convulsions, recurrence of the hyperpyrexia, and change of temperament. These demand treatment as follows: Intense asphyxia, with agonizing headache and continuously high fever, indicates bleeding. From twenty to thirty fluid ounces of blood should be withdrawn. There is no doubt that this measure is one of high importance and should be resorted to carly in these cases. Convulsions should be controlled by inhalations of chloroform; or the hypo-

dermatic injection of ½ grain morphine, in adults, repeated, if necessary. The recurrence of the hyperpyrexia demands a repetition of the bath or pack. In these cases the symptoms of shock should be carefully watched for. The change in temperament is a striking sequelæ of sunstroke. Often the quiet, cheerful person becomes unruly and most irritable. These patients need watching for several months for symptoms of mental aberration.

The prophylactic treatment is almost self evident. In the heated periods every one should avoid exposure; alcoholic, sexual, or other excesses; and exhaustion, bodily or mental. The enunctories should be kept active; the clothing should be light. The diet should consist of fruits and vegetables, with the avoidance of fats and meats. Cool, pure water can be drunk in moderation. Those persons who have suffered from sunstroke should be particularly careful in these periods.

(To be concluded.)

Correspondence.

LETTER FROM LONDON.

coroners' Inquests.—The Catford Case.—Open Air Schools.— Appointments in Scotland.

London, June 16, 1908.

Mr. Troutbeck, the coroner for Westminster, has excited a good deal of criticism both among medical men and with the general public by his peculiar methods of carrying out the law. For some time past it had been his custom, in all cases where a post mortem was necessary, to get an expert pathologist to perform it, the medical man in charge of the case not being called even to give evidence. 1903 the British Medical Association called the attention of the Lord Chancellor to this practice of Mr. Troutbeck's, and, although Lord Halsbury (the Lord Chancellor at that time) expressed disapproval of the coroner's methods, he was unable to remove him from office, as this could only be done for mis-conduct. Mr. Troutbeck has now found another serious deficiency in the law which he feels called upon to remedy. He considers that the number of deaths subsequent to operations is rapidly increasing, and there are no possible means of knowing what deaths have been brought about or accelerated by surgical operations. He considers such deaths unnatural, and consequently he thinks all such cases should be reported to the coroner, who would decide whether or not an inquest was necessary. He took the first step in this reform by ordering an inquest on a patient who had died at the Bolingbroke Hospital after an operation for removal of a cerebral tumor, performed by Sir Victor Horsley. At the inquest Sir Victor Horsley protested that he failed to see why any inquest was necessary. It was quite a new departure, and could serve no useful purpose. The same argument for holding an inquest could be applied to any case of a patient who died after receiving surgical or medical treatment, because it might always be contended that the giving of some drug or the adoption of some surgical procedure was an "unnatural" event. Mr. Troutbeck, in his address to the jury, stated that he believed the peo-

ple of this country were in complete ignorance as to the proportion of deaths accelerated by surgical operations. It was a serious matter and one for which a legal remedy was undoubtedly required. He certainly did not intend to let the matter rest. an interview published in yesterday's Daily Telegraph, the coroner further explained his position. He thinks the present mode of procedure is in pressing need of amendment. He suggests that the certificates in cases of death following operations should contain fuller details than the usual death certificates. He also thinks that coroners should be given the power to order a post mortem whenever they think it advisable, as the information thus obtained would enable them to decide whether an inquest was also necessary. The performance of post mortems should be undertaken only by skilled pathologists, as is the case in France and Germany, and not by general practitioners. The coroner's act of 1887 is certainly antiquated and needs amendment. In fact, there is a bill which is likely to be passed by the present Parliament which will do away with the viewing of the body by the coroner's jury, a useless practice, and there are several other points in the act which need amendment. But some of Mr. Troutbeck's suggestions are, to say the least, impracticable. If an inquest was to be held in every case of death after a surgical operation, the result would be that many an operation performed to give a patient his only chance would not be undertaken for fear of the publicity of an inquest, which would be damaging to the surgeon's reputation and painful to the patient's relatives and friends, and could do no possible good. The methods of Mr. Troutbeck are severely criticised in the British medical

Among the cases dealt with by the Penal Cases Committee of the General Medical Council is that of Dr. John Papa Nicolas, known as the "Catford Dr. Nicolas was a young medical man practising at Catford, in the southeast of London. Before beginning practice on his own behalf he had acted as assistant to a Dr. Atkinson in the same district, but no bond had been given, and there was no argreement between them as to restriction of practice in the neighborhood. The charge against Dr. Nicolas was that he had systematically canvassed for patients in Catford and had disparaged the professional skill and ability of his principal. The Council took up the consideration of the case last November, and it was adjourned to the present session. Notwithstanding a very skilful defense by Dr. Nicolas and his legal advisers, the verdict was given by the Council, after a protracted considera-tion of the case, that Dr. Nicolas was guilty of infamous conduct in a professional sense, and his name was directed to be erased from the Register. An appeal has been lodged against this decision, which will be considered in due course, and there is also a libel action pending with reference to the same case. The whole matter must therefore still be considered sub judice. During the consideration attacked by Dr. Nicolas's legal representative, and this matter will also come up for further consideration. There is no doubt that the judicial functions of the General Medical Council are beset by many difficulties. The skilful defense of this case has greatly embarrassed the Council, and their ordinary business has been hampered very considerably. Besides this, the expenses of such a protracted case will amount to no inconsiderable item, and if the case should be brought before the general law courts, which is very probable, the expenses will be considerably increased.

The Education Committee of the London County Council tried the experiment last summer of establishing an open air school. The report just issued gives a very glowing account of the success which has attended the experiment. The children selected for instruction were all weakly or anæmic, but after the period of schooling in the open air the health of every one of them decidedly improved. In the case of some children suffering from active disease this was entirely arrested. Encouraged by their success, the committee propose this summer to hold three open air schools. Each will accommodate seventy-five children, under a head teacher, three assistant teachers, a nurse, and a cook. The results of this experiment will be awaited with interest.

Two important medical appointments have been made in Scotland. In Glasgow University, the chair of the practice of medicine has been vacant since the death of Sir Thomas McCall Anderson. The vacancy has now been filled by the appointment of Dr. Samson Gemmell, who occupied the chair of clinical medicine. Dr. Gemmell is an M.D. of Glasgow University, and for some years acted as assistant to Sir William Gairdner. The second appointment is that of Mr. Francis Mitchell Caird, M.B., C.M., F.R.C.S.E., as regius professor of clinical surgery in the University of Edinburgh, in place of the late Professor Thomas Annandale. Mr. Caird was a dresser and clinical clerk under Lord Lister while he was still professor of clinical surgery in the University of Edinburgh. He is perhaps the most competent operator in Edinburgh in cases of abdominal surgery.

Therapeutical Notes.

Remedy for Coryza.-A combination that is said to control a cold in the head within from twenty-four to forty-eight hours if taken at the onset of the attack is represented in the following prescription, taken from Les nouveaux remèdes, for May 24, 1908:

Sodium Sulphite in Rhus Poisoning.-The application of a supersaturated solution of sodium sulphite in water is recommended for the treatment of rhus poisoning by Briggs (The Therapeutic Gazette, May 15, 1908), who says that complete recovery takes place within three or four days after

such an application, even in the most severe cases. The solution leaves the parts with the appearance of having been whitewashed. It quickly relieves the burning, itching, and swelling, and causes no irritation. The application is also effective in the eruption, which is apt to return each spring in persons who been once attacked.

For Cephalæa.—The Journal de médicine de Paris, for April 4, 1908, cites the following prescription of Semon for the relief of headache:

| P_{k} | Acctanilide,gr. xxxv; |
|---------|---------------------------------|
| | Monobromated camphor,gr. viiss; |
| | Sodium salicylate,gr. xv; |
| 3.6 | Extract of hyoscyamus,gr. iss. |

Sig.: One capsule every hour until five are taken, or until relief is experienced.

The Treatment of May Fever.—Menier (La Quinzaine thérapeutique) recommends the inhalation of mentholated chloroform, containing 4 per cent. of chloroform, where there is excessive secretion, this to be used in conjunction with a nasal spray of a 1 in 2,000 solution of adrenalin. For the eyes he suggests an application of one drop of a solution containing two per cent. of eserine sulphate or of a five per cent. solution of pilocarpine nitrate. The asthmatic forms of the disease are best treated with antispasmodics. In mild cases the use of belladonna or the valerianates is indicated, as in the following combination:

| \mathbf{R} | Extract of belladonna, | | |
|--------------|------------------------|------|--------|
| | Syrup of poppy, N. F., | | |
| | Cherry laurel water, | | |
| M. | Distilled water, | | 311SS. |

If valerianates are preferred the following may be prescribed:

| \mathbf{R} | | ammonium | | | |
|--------------|-------------|--------------------------|-----------|--------|-----------|
| 3.5 | | of valerian, | | | gr. xviii |
| | ft. pil. No | o. xxiv. 1 every thre | e or four | hours. | |

When the asthmatic attacks are not severe the use of bromides is resorted to in the following combination:

| P_{i} | Potassium bromide,5v; |
|---------|--|
| | Tincture of lobelia, |
| | Tincture of grindelia robusta, |
| | Camphorated tincture of opium, |
| | Syrup of bitter orange peel,3x; |
| | Decoction of senega, |
| Μ. | Sig.: One tablespoonful three times a day. |

Where the asthmatic attacks are particularly severe resort may be had to morphine or heroin. It is always advisable to look for some lesion in the nose as the source of the trouble.

For Seasickness.—In the Journal de médecine de Paris Schepelmann is credited with the following remedy for seasickness:

| B | Cocaine | hydrochloride,gr. iii | |
|----|-----------|-----------------------|---|
| | Tincture | of iodine,gtt. xxx | ; |
| M. | Distilled | water, | ٠ |

Sig.: One tablespoonful for a dose, to be repeated two or three times, as needed.

The Treatment of Bronchial Pneumonia.— Hirts, of the Necker Hospital, Paris (Revue medico-pharmaceutique, March 1, 1908), advises the use of the cold pack in the treatment of bronchial pneumonia, allowing it to remain in place from two to three hours, instead of the shorter period of twenty minutes usually allowed. This is followed by energetic massage and a renewal of the cold application. Where the heart is weak a warm or tepid bath is to be preferred to the cold pack. Renault, of Lyons, bathes the patient in water at a temperature of 100° to 102° F, three or four times during the day and night, sometimes every two hours. It is important to sustain the action of the heart. The duration of the attack is much shortened by this treatment. The mustard bath which is sometimes used exerts an energetic revulsive action. In critical cases the patient may be seated in a warm sitz bath and water cooled to 60° F, dashed on him.

Internally the following may be administered for

its stimulant and sudorific action:

| F_{i} | Brandy, | | | , |
|---------|----------|---------|------|--------|
| | | | | 10kxx; |
| | Syrup of | tolu, | | |
| | Syrup of | acacia, | | |
| M | | | | |

Oxymel of squill is a good expectorant, which may be given in doses of five to twelve drachms in the following draught:

| R | Syrup of | coffee, . | | | | | | | | | | | | Ĵν | 7 |
|-----|----------|------------|--|--|--|--|--|--|--|--|------|------|--|-----|-----|
| | Syrup of | digitalis, | | | | | | | | | | | | 3v | 7 : |
| | Oxymel o | of squill, | | | | | | | | | , | | | .31 | v. |
| 17. | | | | | | | | | | | | | | | |

The cough of the tuberculous patient may be relieved in various ways, either by suggestion or by means of drugs. During the day chloroform water may be used, but at night a hypnotic of the nature of chloral is given by preference. A pill of the following formula is given with good results:

| | of hyoscyamus | | |
|-------------|---------------|------|--------|
| | ed antimony, | | |
| | powder, | | |
| M. ft. pil. | ion of roses, | | .q. s. |

Sig.: One pill every three hours.

For the relief of the pains in the chest suffered by the tuberculous patient morphine is best, but when its use is contraindicated the application of the following liniment will be found beneficial:

| \mathbf{R} | Guaiacol, | | \\\XXX; |
|--------------|----------------------|---------------------|---------|
| | Tincture of iodine, | | |
| | Glycerin, | | |
| M. | et. Sig.: Apply as a | paint once or twice | daily. |

A Tonic for Tuberculous Patients.—The following tonic mixture is prescribed in cachets by Sergent (*Journal de médecine de Paris*):

| P_{i} | Calcium carbonate,gr. 1; |
|---------|------------------------------|
| | Tricalcium phosphate, |
| | Calcined magnesia,gr. xviii; |
| | Sodium chloride,gr. xviii. |
| 3.4 | ft at div in cachet No vii |

Sig.: One cachet three or four times daily with meals.

Tonic Arsenic Pills.—Lesné recommends the following in La Clinique for May 2, 1908:

| P_{μ} | Sodium | cacodyla | ite, | | | | | .gr. v; |
|-----------|----------|----------|------|------|---|------|------|-------------|
| | | of cinch | | | | | | |
| | | oxalate, | | | | | | |
| | | rhubarb | | | | | | |
| | Pulveriz | ed nux | von | iica | , | | | gr. 1. |
| M | ft nil N | To vii | | | | | | |

M. ft. pil. No. xii.

Sig.: One pill to be taken before the two principal meals.

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ANATOMICAL NOMENCLATURE.

On the appearance of Dr. Lewellys F. Barker's Anatomical Terminology, with Special Reference to the [BNA], which gave the nomenclature adopted by the German Anatomical Society, commonly known as the Basle nomenclature, we took the liberty of objecting mildly to some of the terms included in it, though we gave to most of them our unqualified commendation (see the New York Medical Journal for April 13, 1907, page 702.) A German author, Professor Hermann Triepel, of the Anatomical Institute of the University of Breslau, in a recent communication to the society, objects to more than a hundred and fifty of the terms. For a copy of the pamphlet, entitled Denkschrift über die anatomische Nomenclatur der anatomischen Gesellschaft auf ihrer 22. Versammlung in Berlin vorgelegt am 22. April, 1908 (Wiesbaden: J. F. Bergmann), we are indebted to Dr. Achilles Rose, whose efforts in the interest of onomatological purity are well known.

Professor Triepel agrees with Dr. Rose that modern Greek scholars should be consulted when new terms are to be formed from Greek elements. As regards anatomical terms he particularly recommends the study of Papaïoannou's Δυατομική τοῦ ρθυαιώτου (Athens, 1896). He gives a list of terms by which he would replace some of those that have been accepted by the society. Many of them concern the proposed change of the terminations roidalis, roidealis, and roideus to roides, and a num-

ber of the other changes which he suggests are founded on a like regard for the preservation of classical usage. Some of them, however, rest on other grounds, and it is interesting to note them. He prefers von Bardeleben's antebrachium to antibrachium and the same author's (and some others') anulus and anularis to annulus and annularis. He would change arrector to arrigens and articulatio (meaning a joint) to articulus.

He remarks that atlas was originally the name of the seventh cervical vertebra, and in its present sense he would replace it by epistropheus. Calcaneus, he says, is only a noun, and not also an adjective, and so, as we understand him, calcaneum should give place to os calcanei. Chylifer should be replaced by chylophorus, diameter conjugata by Hyrtl's diameter recta, and coracoacromialis by acromiocoracoides. Cruciatus should give way to cruciformis or chiastus. For duodenum he would substitute Luschka's intestinum pancreaticum, and he prefers meninx fibrosa or meninx dura to dura mater, condylicus to ellipsoideus, lympha interna to endolympha, fascia hypogastria to fascia endopelvina, processus paracondylius to epicondylus, episcleridius or supraduralis to epiduralis, axon or vertebra cervicalis secunda to epistropheus (originally the first cervical vertebra), vesica fellis to vesica fellea, gastrocnemiæus to gastrocnemius, genioglossicus to genioglossus, glomeriformis to glomiformis, glomerulum to glomerulus, glutiæus to glutæus. hæmorrhoidicus to hæmorrhoidalis, hallex to hallux, hilum (by no means new) or porta to hilus, pars propria intestini tenuis to ileum, hypomoglenius or hypoglenius to infraglenoidalis, infraspinalis to infraspinatus, mesocarpius to intercarpeus, mesocondylius to intercondyloideus, incisura lunata interna to incisura intertragica interna, ischiacus to ischiadicus, intestinum vacuum to jejunum, lemphicus or lymphaceus to lymphaticus, ganglion lemphicum or nodus lemphicus to lymphoglandula, plicatura to plica, metacarpium to metacarpus, metatarsium to metatarsus, polygonus to multangulus, cervix to nucha, medulla prolongata to medulla oblongata, oculimotorius to oculomotorius, paracentrius to paracentralis, parotidicus to parotideus, crista ossis pubis to pecten ossis pubis (for the reason that pecten means the whole pubic bone), lympha externa to perilympha, periosteum orbitæ to periorbita, peroniæus to peronæus, nervus pyramidis to nervus petrosus, pinguicula to pinguecula, meninx vasculosa to pia mater, pleuricus to pleuralis, promuntorium to promontorium, psoites to psoas (really the genitive of \$\psi\oldsymbol{a}\alpha dus (which, he says, ought to make one ashamed of himself), tunica nervea or tunica neurica to retina, glandula sebipara to glandula sebacea (literally a gland consisting of tallow), lunatus to semilunaris, sutura squamata to sutura squamosa, sternicus to sternalis, hyparachnoides to subarachnoidealis, superficialis to sublimis, mandibularis to submaxillaris, sudorifer to sudoriferus, hyperchorioides to suprachorioideus, hypercondylius to supracondyloideus, hyperomoglenius or hyperglenius to supraglenoidalis, supraspinalis to supraspinatus, sympatheticus (in accordance with British and American writers) to sympathicus, serum articulare to synovia, serosus to synovialis, thoracicus to thoracalis, cartilago tracheæ to cartilago trachealis, ephippium to sella turcica, umbilicus to umbo membranæ tympani, pennatus to unipennatus, and urinalis to utrinarius.

Free as we are of any special objection to most of these proposed changes, we must pause to consider to what extent our already overburdened vocabulary would have to be enlarged if other branches were to furnish neologisms to match these anatomical specimens. What would the medical dictionary of the future become? Moreover, we do object to digitus as a substitute for digitatio (meaning digitation) and to mylohyoides, omoplatohyoides, and omohyoides, for we know of no classical Greek word which, transliterated into Latin, contains the letter h save at the beginning, unless it is preceded by r, or unless, in conjunction with, t, p, or c, it represents theta, phi, or chi. Our antipathy to hybrids is as great as Professor Triepel's, but we despair of eliminating all of them.

PSYCHIATRY IN BALTIMORE.

By the choice of Dr. Adolf Meyer to be director of the new Psychiatric Clinic and professor of psychiatry in the Johns Hopkins University, the directors of that institution have once more shown that breadth of mind and catholicity of spirit which have stamped Johns Hopkins almost from its very inception. The habit of seeking the best, no matter where it may be found, and the still greater ability of being able to get it, have set the standard in Baltimore, where imitation becomes the sincerest form of flattery.

We congratulate the university on its good fortune, and express the regrets which are widespread in the minds of those interested in psychiatry in New York State at the loss of so able and so valuable a worker as Dr. Meyer has shown himself in the Pathological Institute. Above all, the status of psychiatry will be the gainer, and one of the most important branches of medicine—that which looks to the care of the greatest of man's faculties, the mind—will, through the efforts of so well qualified an advocate, gain a place which the more spectacu-

lar sister branches have for so many years seemed to overshadow.

THE SPHERE OF THE TRAINED NURSE.

This was the title of an address delivered by an eminent Philadelphia physician, Dr. W. A. Newman Dorland, before the graduating class of the Philadelphia School for Nurses on May 27th. The address has now been published in pamphlet form, and we hope it will be extensively read by physicians, by those who govern nurses' training schools, and by other graduate nurses than those who heard it. Dr. Dorland vigorously defends the rights of the pupil in nursing, emphasizes some of the errors of nurses' curricula, and warns trained nurses of certain errors into which they seem prone to fall.

The education of a nurse, he says, does not properly require that she should be kept for months at such menial work as "scrubbing, washing, and the other ordinary kitchen duties," which, he remarks, bear no more relationship to her training as a nurse than a knowledge of horseshoeing or of cobbling would. Then, again, he has observed that favoritism is sometimes shown to individual pupils. "One favorite nurse," he remarks, "profits by an excess of bedside or out patient instruction, and another draws in the lottery of favoritism a special career as clinic nurse, while a third bears the brunt of official disfavor and rounds out her career as hospital drudge." Every matriculate, he adds, should enter the training school with the assurance that she is to have the benefit of the institution's facilities equally with all her associates, and he justly calls upon all the pupils, including the favored ones, to resent invidious discrimination.

Another piece of injustice to the pupils, although they are not apt to realize it, is the pretense of giving them an extensive medical education, "equal to at least a two years' course in a medical college." The intention should be, not to make poor doctors of them, but the best of nurses. "I believe," says Dr. Dorland, "that a superficial knowledge of physiology and anatomy, together with a thorough acquaintance with hygiene, will answer every purpose." But it is well, he thinks, that the nurse should have sufficient knowledge of pharmacy to enable her to make percentage solutions quickly and accurately. for such facility is "an excellent adjuvant to the ability to record a temperature, a pulse rate, and a pulserespiration ratio." The cramming of nurses with learning is, indeed, a mistake, but their training, as Dr. Dorland truly says, cannot be overdone.

The nurse should have some months of obstetrical training, and Dr. Dorland believes that an excellent innovation would be a course, covering some weeks

only, of nursing in the slums. Thus "her inventive powers would be taxed, and her experience in securing thorough asepsis under such difficult circumstances would be invaluable." Of course such nursing would be more than ordinarily disagreeable, but it would only be analogous to what the young doctor almost invariably has to go through with, and nobody knows better than he how helpful it is in his subsequent career. As for obstetrical nursing, it is amazing that so many women decline to enter upon it. Nothing could more endear them to their patients than good service during confinement and the puerperal period, and it is in satisfying their patrons that they must chiefly seek the steps to prosperity.

Dr. Dorland very properly warns graduate nurses against rapacity and the trade union spirit. Many a nurse, he says, causes the note "For twenty or twenty-five dollar cases only" to be inscribed opposite her name in a nurses' directory, and this, too, shortly after she has obtained her diploma and when she is virtually destitute of individual experience. "At one fell swoop," says Dr. Dorland, "she annihilates the years of experience that one would deem essential, and leaps at once into the seats of the mighty in her profession." She fancies that her diploma entitles her to make this move. Dr. Dorland thinks those physicians are right who say: "If she will not take the fifteen dollar case, she shall not have the twenty-five dollar case." And we think so, too.

CUTANEOUS PIGMENTATION AND THE MORPHINE HABIT.

At a recent meeting of the Medical Society of the Paris Hospitals (Bulletins et mémoires de la Société médicale des hôpitaux de Paris, June 18th) Dr. L. Galliard, of the Lariboisière, and Dr. Lasnier, a hospital interne, brought up this subject by presenting a patient, a consumptive woman, thirty-nine years old, free from syphilis, who bore on the anterior regions of both thighs, both arms, and the upper part of both forearms exceedingly numerous. almost confluent, lenticular blue spots. The pigmentation was seated in the derma and could not be made to disappear on pressure. They had observed the spots for a number of months, and the woman herself said that they had been there for several years. The tint was not quite so deep as that produced by tattooing with India ink.

The spots on the thighs were sharply bounded above by the fold of the groin, and they extended down to the region of the knee. They occupied exclusively the anterior, the inner, and the outer aspects of the thighs. Those on the front of the arms reached nearly to the shoulder. On the fore-

arms they were limited to the upper third of the anterior aspect. There were none anywhere else. In the regions occupied by the spots there were also many rounded, depressed cicatrices, of various sizes, but they were less numerous than the pigmented spots. They resembled the pits of smallpox. Nowhere were there any of the brown spots so frequently observed in morphinomaniacs.

The patient's story was that in 1897 she was admitted into the Hôtel-Dieu with pleurisy and intercostal neuralgia, and there received her first morphine injection. Soon afterward, unfortunately, she took service with some persons who were addicted to the use of morphine, and from them she acquired the habit of administering morphine to herself subcutaneously. She made the solution herself, using distilled water and cherry laurel water. It was never intentionally colored and she never noticed that it contained any solid matter in suspension. The depressed cicatrices occupied the sites of some of the injections which had caused a little irritation, followed by the formation of minute crusts, which she had scratched off, but there had never been anything like the formation of an abscess, although she had made no attempt at asepsis beyond providing herself with a new svringe occasionally.

Two other cases were mentioned as having been previously shown at meetings of the society, by M. Moutard-Martin and M. Thibierge, in both of which microscopic granules had been found in sections of the derma excised from the blue spots. Evidently, the authors remarked, the spots were not due to blood pigment, for that would long since have been absorbed. Particles of steel from the needles might have been detached and entered the punctures, or particles of lampblack might have been introduced with the injections. It was not stated whether or not the woman was in the habit of cleansing the needle of the syringe by subjecting it to the action of a flame. It can hardly be supposed that carbonaceous matter floating in the air can have been carried into the punctures in sufficient amount to give rise to the pigmentation.

GEORGE P. HUNTINGTON: AN APPRECIATION.

To have acquired, during one's lifetime, some measure of appreciation and praise has not usually been the good fortune of those who have presented new thoughts to the world. But we are pleased to note that a recent issue of Neurographs, a molest publication devoted to neurology and kindred branches, edited by Dr. William Browning, of New York, has been dedicated to the man who de-

scribed the disease now known as Huntington's chorea, Dr. George P. Huntington, whom, fortunately, we still have with us as an active physician.

The series of articles contained in the Neurographs are of special interest to neurologists, but the general practitioner can read them with pleasure and profit. Following an excellent portrait of Dr. Huntington, an editorial leads first to a biographical sketch of that author, by Dr. Winfield, of Brooklyn. This is followed by a reprint of the original description of the special form of chorea as given by Huntington himself in 1872. Strümpell, of Breslau, and Lannois and Paviot make two contributions to the subject, the former on the clinical character, the latter on the histology of the disease. Dr. Osler contributes a short historical note on hereditary chorea; Dr. Jelliffe makes a preliminary report on the historical aspects from the standpoint of the spread of the disease; Dr. Tilney traces the family history of a patient with Huntington's chorea back to 1596; Dr. Diefendorf gives the mental symptoms of the disease, and the editor, Dr. Browning, adds some very interesting biographies of others who have been interested in the subject, namely, Dr. Walters, Dr. Gorman, and Dr. Lyon. An excellent bibliography completes this appropriate recognition of an American practitioner.

Rems Items.

Mr. Henry Lomb, one of the founders of the Bausch & Lomb Optical Company, Rochester, N. Y., died on Saturday, June 13th, aged seventy-nine years.

The Medical Association of the Southwest, which embraces the states of Kansas, Arkansas, Oklahoma, Texas, and Missouri, will hold its annual meeting in Kansas City, Mo., on October 20th and 21st.

A Pasteur Institute in Burmah.—We learn from Science that a Pasteur Institute is to be established in Burmah. It will be some time, however, before the work on the building can be started.

A Brazilian Psychiatrical, Neurological, and Medicolegal Society has been organized with Professor J. Moreira as the first president. The society meets monthly in Rio de Janeiro at the National Hospital for the Insane.

Anniversary Day at the Methodist Episcopal Home for the Aged in Philadelphia, on Thursday, June 11th, resulted in the realization of \$5,000 for the running expenses of the home. The Mary Wagner Infirmary ward was opened.

The Training School for Nurses of the Samaritan Hospital, Philadelphia, held its commencement exercises on the evening of Tuesday, June 16th. Dr. Albert Robin delivered the address to the class. Nine young women received the diploma of the school.

Hospital of the Protestant Episcopal Church, Philadelphia.—At a stated meeting of the board of managers of this hospital, which was held on June 25th, Dr. Francis Wharton Sinkler, of Philadelphia, was appointed attending physician, in place of Dr. D. J. M. Miller, who resigned

Roof Playground at Roosevelt Hospital.-Plans have been filed for remodeling the south addition of the administration building of Roosevelt Hospital, in the centre of the hospital grounds, to provide a roof playground for the children under treatment in ward 6. The playground will be thirty-nine feet long and twenty-nine feet wide.

Contagious Diseases in Chicago.-During the week ending June 20, 1908, the following cases of communicable diseases were reported to the Department of Health:

diseases were reported to the Department of Health: Measles, 238; scarlet fever, 81; diphtheria, 56; tuberculosis, 55; typhoid fever, 20; whooping cough, 16; chicken pox, 10; smallpox, 4; miscellaneous diseases of minor importance, 5; total, 465.

The Boston Floating Hospital made her first trip this season on July 1st. The hospital will make trips daily, including Sundays, up to September 15th, and night trips are being arranged. Last year 74 trips were made; the average number of day patients on each trip was 36; the total number on all trips was 2,639. There were 366 permanent patients who stayed on an average of 17 days each.

The North Missouri Medical Society held its annual meeting in Moberly, Mo., on June 18th and 10th. Officers

meeting in Moberly, Mo., on June 18th and 19th. for the ensuing year were elected as follows: President, Dr. H. C. Given, of Kirksville; first vice president, Dr. W. L. Brossins, of Gallatin; second vice president, Dr. G. O. Cuppaidge, of Moberly; corresponding secretary, Dr. E. C. Gallison, of Moberly; recording secretary, Dr. O. McEwen, Of Salishyu; tressyurer, Dr. Pobert Haley, of Reol-fold Salisbury; treasurer, Dr. Robert Haley, of Brookfield.

The Health of Pittsburgh .- During the week ending June 20, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chicken pox, I case, o deaths; typhoid fever, 33 cases, 2 deaths; scarlet fever, 19 cases, o deaths; diphtheria, 8 cases, 2 deaths; measles, 129 cases, 4 deaths; whooping cough, 7 cases, o deaths; pulmonary tuberculosis, 27 cases, 18 deaths. The total deaths for the week numbered 137, in an estimated propulation of 103,230 corresponding to an annual death population of 403,330, corresponding to an annual death rate of 17.66 in 1,000 of population.

Merger of Medical Colleges.—Steps have been taken

towards the amalgamation of the Ohio and the Miami Medical Colleges of Cincinnati. It has been arranged that these two colleges are to continue during the next school year separately in their present buildings as departments of the University of Cincinnati, after which it is understood that both faculties will resign, and the two colleges united into one department of the university, with a new faculty to be selected by the university trustee

The Medical Society of the County of Wyoming, N. Y., will hold its regular quarterly meeting at the Silver Lake Sanatorium, Silver Lake, N. Y., on Thursday, July 16th. The programme will include a paper by Dr. William P. Spratling, of Sonyea, N. Y., on Epilepsy; a paper on Abortion by Dr. M. J. Wilson, of Warsaw; and a report of the recent outbreak of rabies at Gainesville by Dr. G. S. Skiff, of Gainesville. Dr. Mary T. Greene is president of the society and Dr. L. H. Humphrey is secretary.

Charitable Bequests.—By the will of Esther Tuttle Pritchard, Cook County Hospital, Chicago, receives \$1,000. By the will of Sir R. G. Reid, Queen's University, Kingston, Canada, the Hospital for the Insane at Verdun, the Montreal General Hospital, and the Alexandria Hospital will each receive \$5,000; the Western Hospital and the Victoria Order of Nurses will each receive \$2,500. By the will of William M. Ingraham Wesleyan University, Middletown, Conn. and Seney Hospital Brooklyn.

sity, Middletown, Conn., and Seney Hospital, Brooklyn, become reversionary legatees.

Instruction in the Care of Infants.-The Committee for the Improvement of the Condition of the Poor have established in New York twenty-three classes for the instruction of mothers in the care of infants, and in addition to this three consultation stations were opened on June 20th, where special visiting nurses will make their headquarters, and where volunteer physicians can go each day to give their services. These stations are situated at 216 East Second street, 176 West Sixty-third street, and 248 East 105th street. Seven new milk depots were also opened the city last week

The Mortality of Chicago.—During the week ending June 20, 1908, there were reported to the Department of Health of the City of Chicago 455 deaths from all causes, as compared with 509 for the preceding week and 607 for the year 1907. The annual death rate in 1,000 of population was 10.95, which is the lowest rate recorded in Chition was 10.95. which is the lowest rate recorded in Chicago for more than three years. The principal causes of death were: Apoplexy, 7; Bright's disease, 29; bronchitis, 8; consumption, 69; cancer, 36; convulsions, 3; diphtheria, 2; heart diseases, 33; intestinal diseases, acute, 37; measles, 2; nervous diseases, 12; pneumonia, 42; scarlet fever, 2; suicide, 8; violence (other than suicide), 30; whooping cough, 4; sunstroke, 1; all other causes, 127. Physicians Wanted for Public Institutions.—The State Civil Service Commission of New York announces that examinations will be held on July 25th to secure eligibles from which to fill vacancies in the position of State prison physician, with a salary of \$2,000 per annum, and in the position of woman physician, State hospitals and institutions, with a salary of \$1,000 to \$1,500 and maintenance. The last day for filing applications for these positions is July 18th. Full information and application forms for these examinations may be obtained from Mr. Charles S. Fowler, chief examiner of the commission, Albany, N. Y.

Lake Keuka Medical and Surgical Association.—The ninth annual meeting of this association will be held at Grove Springs, Lake Keuka, N. V. on Thursday and Friday, July oth and 10th. A splendid programme has been prepared, including twenty papers by prominent members of the medical profession, and ample arrangements have been made for the entertainment of members and their guests. Physicians who are not members of the society will be cordially welcomed, and ladies are also invited. The officers of the society are: President, Dr. Lewis Wheeler Rose, of Rochester; vice president, Dr. Charles C. R. Jennings, of Elmira; secretary and treasurer, Dr. H. B. Noble, of Pulteney; committee of arrangements, Dr. P. L. Alden and Dr. R. G. Lawrence of Hammondsport, N. Y.

Planning for the Reception Hospital for the Insane.

—Dr. Albert Warren Ferris, president of the New York State Commission in Lunacy, will spend the summer in Europe studying the methods used in conducting psychiatric hospitals, or psychopathic wards connected with general hospitals. Dr. Ferris is to perfect the plans for the psychiatric hospital, sometimes called the reception hospital for the insane, which is to be built in New York as soon as plans are formulated. He will visit Munich, Berlin, Vienna, and possibly Padua. Dr. Ferris will be accompanied by Dr. Adolph Meyer, director of the Pathological Institute of New York State Hospitals for the Insane, who was recently appointed director of the Henry Phipps Psychiatric Clinic at Johns Hopkins University.

National First Aid Association of America.—The

National First Aid Association of America.—The third annual meeting of this organization was held in Boston recently. Miss Clara Barton, the president of the association, was present at the meeting, but did not preside. Mr. Roscoe G. Wells, of Boston, acting treasurer, occupying the chair. The secretary's report showed a steady growth in the work of the association, and an increase in membership, there being branches of the organization in all but eleven states in the Union. About one thousand students are studying the association's work of giving first aid, and during the past year 62 classes have been conducted and 530 diplomas awarded. Since the association was organized in April, 1905, 178 classes have been formed, with a total enrollment of 3,428 students, and 1,538 diplomas have been awarded.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending June

| -,, -, | | | Cases. | |
|----------------------------|------|------|--------|-----|
| I day flosis primer h. | 428 | 1.43 | 406 | 168 |
| Aphtheria | 377 | 3.1 | . 86 | 28 |
| deales | | 21 | 058 | 19 |
| Scarlet fever | 410 | 25 | 360 | 3.0 |
| That had a second a second | | | | |
| Var. Ca | 1000 | | 1.10 | |
| .yehord fever | 23 | 9 | 58 | 7 |
| When he cough | | .3 | | 1 |
| Cerebrospinal meningitis | . 7 | 7 | 3 | 2 |
| | | | _ | |

The Health of Philadelphia.—During the week ending May 30, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, 2 cases, 0 deaths; typhoid fever, 28 cases, 4 deaths; scarlet fever, 54 cases, 1 death; chicken pox, 46 cases, 0 deaths; diphtheria, 52 cases, 7 deaths; measles, 416 cases, 13 deaths; whooping cough, 17 cases, 7 deaths; cerebrospinal meningitis, 2 cases, 2 deaths; pulmonary tuberculosis, 106 cases, 80 deaths; puemonary tuberculosis, 106 cases, 80 deaths; puemonary tuberculosis, 107 cases, 2 deaths; puemonary tuberculosis, 108 cases, 80 deaths; puemonary 12 cases, 30 deaths; erysipelas, 10 cases, 2 deaths; cancer, 22 cases, 30 deaths; tetanus, 3 cases, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 6; diarrheea and enteritis, under two years of age, 25. The total number of deaths for the week numbered 474, in an esti-

mated population of 1,532,738, corresponding to an annual death rate of 16.01 in 1,000 of population. The total infant mortality was 97; under one year of age, 75; between one and two years of age, 22. There were 45 still births; 26 males and 19 females.

Officers of the State Medical Association of Texas.—At the annual meeting of the State Medical Association of Texas, held recently in Corpus Christi, the following officers were elected: President, Dr. H. W. Cummings, of Hearne; vice presidents, Dr. J. M. Inge, of Denton, Dr. A. Garwood, of New Braunfels, and Dr. A. M. Wood, of Galveston. Councilors: Second District, Dr. N. J. Phenix, of Colorado; Sixth District, Dr. H. J. Hamilton, of Laredo; Seventh District, Dr. J. C. Anderson, of Granger; Eighth District, Dr. W. A. McCamley, of Wharton; Ninth District, Dr. John T. Moore, of Galveston; Tenth District, Dr. D. S. Weir, of Beaumont; Twelfth District, Dr. G. S. McReynolds, of Temple. The next annual meeting of the association will be held in Galveston.

The Association of Medical Officers of the Army and

The Association of Medical Officers of the Army and Navy of the Confederacy held its eleventh annual meeting in Birmingham, Ala, recently. The membership of this association is composed of physicians who served in the Confederate army, and all Confederate veterans and their sons who are regular doctors of medicine are eligible to membership. The following officers were elected for the coming year: President, Dr. J. C. Abernathy, of Birmingham, Ala.; first vice president, Dr. W. F. Beard, of Shelbyville, Ky.; second vice president, Dr. E. D. Newton, of Athens, Ga.; third vice president, Dr. George M. Burdett, of Lemon City, Tenn.; fourth vice president, Dr. W. H. Barnes, of Homewood, Miss.; secretary, Dr. A. A. Lyon, of Nashville, Tenn. The next meeting will be held in Memphis, Tenn.

Vital Statistics of New York.—During the week ending June 20, 1908, there were reported to the Department of

Vital Statistics of New York.—During the week ending June 20, 1908, there were reported to the Department of Health of the City of New York 1,140 deaths from all causes, as compared with 1,219 for the preceding week and 1,426 for the corresponding period of 1907. Of the total number of deaths 571 were in Manhattan, 101 in The Bronx, 384 in Brooklyn, 53 in Queens, and 31 in Richmond. The annual death rate in 1,000 of population was 13,45, while the death rate in the corresponding period in 1907 was 17,36. The death rate in Manhattan was 12,99; in The Bronx, 16,09; in Brooklyn, 13,42; in Queens, 11,80; and in Richmond, 20.09. The total infant mortality for the week was 327; 268 under one year of age, and 59 between one and two years of age. There were 128 still births. Nine hundred and ninety marriages and 2,790 births were

recorded during the week.

The Edward N. Gibbs Memorial Prize.—The New York Academy of Medicine anounces that the sum of \$1,000 will be awarded to the author of the best essay submitted us competition for this prize. The subject is The Ætiology, Pathology, and Treatment of the Diseases of the Kidney. Pathology, and Treatment of the Diseases of the Kidney. Essays must be presented on or before October I, 1909; they must be in English; typewritten; designated by a motto or device; and each essay accompanied by a sealed envelope bearing the same motto or device, containing the name and address of the author. No envelope will be opened except that which accompanies the essay which wins the prize. The Academy reserves the right of withholding the prize ii, in the opinion of the committee, no essay is worthy of it. All communications should be addressed to the Committee of the New York Academy of Medicine on the Edward N. Gibbs Memorial Prize, 17 West Forty-third Street, New York.

The State Medical Society of Wisconsin.—The sixty-

The State Medical Society of Wisconsin.—The sixty-second annual meeting of this society was held in Minwaukee on Wednesday, Thursday, and Friday, June 24th, 25th, and 26th. The programme was a particularly good one, and included a series of clinics which were held during the meeting. The address in medicine was delivered by Dr. Walter B. Cannon, professor of physiology in the Harvard Medical School, and the address in surgery was delivered by Dr. E. Wyllys Andrews, professor of surgery in the Northwestern University Medical School. The annual banquet was held on Thursday evening, and there was a smoker at the rooms of the Milwaukee Medical Society on Wednesday evening. Officers for the ensuing year were elected as follows: Dr. Gilbert E. Seaman, of Milwaukee, president; Dr. H. B. Scars, of Beaver Dam, third vice president; Dr. C. S. Sheldon, of Madison, secretary; Dr. S. S. Ilall, of Ripon, treasurer.

Personal.-Colonel William C. Gorgas, chief sanitary officer of the Isthmian Canal Zone, had conferred upon him the honorary degree of Doctor of Science by Harvard University at the annual commencement held recently.

Dr. Glentworth R. Butler, of Brooklyn, has received from Wesleyan University, Middletown, Conn., the degree

of Doctor of Laws

Dr. William Osler, regius professor of medicine at Oxford University, has been selected as an independent candi date for the office of Lord Rector of Edinburgh University.

Dr. Francis E. Fronczak, assistant health commissioner of Buffalo, has been appointed a State lecturer on tubercu-losis by Dr. Eugene H. Porter, State Health Commissioner. Dr. John W. Goodsell, of New Kensington, Pa., will accompany Commander Robert E. Peary on his expedition in search of the North Pole. He will go as surgeon to the

Dr. Jacques Loeb, professor of physiology in the University of California, and Dr. Charles Sedgwick Minot, Stillman professor of comparative anatomy in the Medical School of Harvard University, have been appointed corresponding members of the Physicomedical Society of Vienna.

American Library Association.—The eleventh annual meeting of the American Library Association was held in Chicago, on June 1, 1908. The following programme was presented: President's address, on The History of the Terminology of the Disease Known as Graves's Disease, Basedow's Disease, Exophthalmic Goitre, etc., a Contribution to the Study of Medical Nomenclature, by Dr. George Dock, of Ann Arbor.; The Department of Medical Sciences of the John Crevar Library, by General A. C. Girard, of Chicago; The New York State Medical Library and the Education Building, by Dr. Albert Vander Veer, of Albany; The Use of Current Medical Literature in the Small Medical Library, by Dr. Carl E. Black, of Jackson-ville, Ill.; The Early Medical Profession in Canada, by Miss M. R. Charlton, of Montreal; The Development of Orthopædics as a Special Branch of Medical Literature, by Dr. H. Winnett Orr, of Lincoln, Neb. The annual dinner of the organization was held at the Union League Club on of the organization was held at the Union League Club on the evening of the meeting. The following officers were elected: President, Dr. George Dock, of Ann Arbor; vice president, Dr. John H. Musser, of Philadelphia; secretary, Miss Ada Bunnell, of Albany; treasurer, Dr. George D. Hershey, of Providence.

Campaign Against Tuberculosis in Brazil.-It is reported that the government of Brazil is preparing a campaign against tuberculosis. The present high rate of mortality from consumption explains why extraordinary measures against the disease are being taken. tality reports for Rio de Janeiro show that in 1905 out of a total of 14,660 deaths, 2,663 were due to pulmonary tuberculosis, as compared with 287 from yellow fever; in 1906, out of a total of 13,956 deaths, 2,649 were from tuberculosis and 42 from yellow fever; in 1907, out of a total of 13,014 deaths, 2,587 were from tuberculosis and 39 from yellow fever. Systematic work in sanitation has resulted in practically stamping out yellow fever in Rio de Janeiro, and with such success back of them the sanitary authorities feel that something can be done against tuberculosis. The new campaign involves the initial expenditure of \$1,250,000, and while twenty-six cities are included in the plans, attention will be directed first to Rio de Janeiro plans, attention will be directed first to kilo de jainting and no modern means for combating the disease will be neglected. The principal features of the plan are: The compulsory reporting of every case of tuberculosis to the sanitary authorities, the complete assumption of charge of all cases of tuberculosis by public authorities, in which industrial cases are expected from the public and patients. fectious cases are separated from the public and patients supported by the public; the establishment of hospitals, with complete isolation, for tuberculosis infected invalids, and of hotels and boarding houses, agricultural colonies and sanitaria for those not invalid; the absolute refusal of admission into Brazil of any person or animal having tuberculosis; the inspection of all foods and materials likely to carry bacilli of the disease, with power to destroy anything infected; and the betterment of food, housing, and other conditions of life for the large mass of the population in which tuberculosis is raging, for the prevention of the disease, by fortifying the people against it vention of the disease by fortifying the people against it by improving their general health.

Dith of Current Biterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL June 25, 1908.

Surgical Shock.

By GEORGE CRILE.

Achondroplasia

By William N. Bullard and Arial W. George.
Alphamonobrom-Isolvalerylurea. A New Nerve Sedative and Somnifacient. By William Henry Porter.
The Local Treatment of Acute Inflammations of the Throat from the Standpoint of Pathology,
By J. L. Goodale.

I. Surgical Shock .- Crile remarks that the depression in the majority of the traumatic cases is due to both shock and hæmorrhage. In the absence of a clear history it is not easy to determine their relative importance. Fortunately, the treatment of each is virtually the same. In traumatic cases demanding operation, should one operate immediately or should one wait for reaction? This question may be answered either way. Immediate operation may be performed if the operative field can be blocked by cocaine, thus preventing further shock, as, for example, the lower extremities by spinal anæsthesia, the arm by blocking the brachial plexus, or if, says the author, the patient is treated by a transfusion of blood. On the other hand, if these circumstances do not exist, it is, in his opinion, better to await reaction. At all events, while operating on such cases, the nerve trunks supplying the field in question should, whenever possible, be blocked, even when general anæsthesia is administered. In these cases, in which sensitive tissue in quantities is mangled, especially in the compound fractures, when the soft parts are no longer supported, the greatest gentleness must be exercised. The principal causes of collapse coming to the attention of the surgeon arise from anæsthetic accidents, asphyxia, reflex inhibition, and hæmorrhage. The consideration of collapse presupposes cases of suspended animation. We must also consider resuscitation of parts of the brain. Total anæmia of certain essential parts of the central nervous system is safely endured but little beyond six minutes. There is a marked difference in the length of time that the various tissues and organs of the body can endure total anæmia with safety. The bones, tendons, skin, muscles, the cardiovascular system, the various organs and glands, and the central nervous system show an individual resistance to anæmia. According to the author's experiments on animals and clinical observation, every effort should be made not only to sustain, but, if possible, to increase, the general blood pressure in cases of increased intracranial pressure so as to make certain of the necessary circulation during the entire operation. Shock and hæmorrhage here have a specialized significance.

4. The Local Treatment of Acute Inflammations of the Throat from the Standpoint of Pathology.—Goodale offers the following hypotheses: I. In a beginning tonsillitis antiseptic applications may perhaps be used with benefit, and their effect, if any, will be to abort the local infection. If the disease is not checked at the outset by the sterilization of the parts, but if it proceeds to the formation of white spots in the crypts with systemic involvement, further application of antiseptics may not only be useless but harmful. It would appear possible that antiseptics may retard convalescence in two ways; first, by diminishing the number of bacteria in the crypts which are generating toxine, and consequently prolonging the period required for the formation of the requisite amount of antibodies; second, by their destructive action upon the tissue cells and phagocytic leucocytes of the host. 2. Forcible application of antiseptics may be followed by increased fever and cervical adenitis, indicating heightened absorption of toxine into the system. This phenomenon may be compared to the depression which follows the injection of too large a dose of vaccine in cases undergoing opsonic treatment. 3. In certain cases where acute tonsillitis appears to be aborted by local antiseptics, inflammatory manifestations may follow after a day or two in the neighboring regions, and last for a number of days or several weeks. Here the possibility is suggested that the checking of the tonsillitis checked also the establishment of immunity, and that for its final accomplishment a longer period of growth of the organism upon the membranes of the nose, larynx, trachea, or bronchi was necessary. In this connection we may recall the protracted duration of nasal diphtheria, as compared with the relatively brief time occupied by the pharyngeal disease.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. June 27, 1908.

Hyperæmia,
Local Applications in Surgery.
The Calmette Ocular Reaction to Tuberculin,
By Harry C. Parker.
Colles's Fracture, with a New Theory of its Mechanism,
By Leonard W. Ely.

I. Hyperæmia.—Binnie reminds us that pain in an inflammatory lesion seems to be due to irritation by toxines, and especially to the high specific gravity of the inflammatory exudates. Hyperæmia properly produced destroys or dilutes the toxines and dilutes the exudates. The tense swelling is due to an exudate of high specific gravity—the tension prevents the inflow of blood to the part and the escape of diluting sera from the vessels, and when the tension is removed fresh blood flows into the part and relief is obtained. If pus is present it is evacuated through a comparatively small cut or puncture. The suction of the cupping glass will notably aid in the removal of the pus. A suitable cup which completely covers the lesion is applied. Suction is produced by means of a rubber bulb or a syringe. The suction must be strong enough to produce a red swelling of the part. If the swelling becomes blue the suction is too powerful. The same is true if pain or paræsthesia is occasioned. The suction is kept up for five minutes, the cup is removed for three minutes and reapplied for five minutes, etc. This alternation of five minutes of suction and three minutes of rest is persisted in for about forty-five minutes daily. The patients quickly learn the correct degree of suction to apply and soon can carry out the treatment better than can the surgeon. The suction exerted brings an increased quantity of the vessels; thus an unusual amount of the active protective material is brought into the place where it will do most good. The suction must be sufficiently strong to produce this condition, but not strong enough to cause stasis of the blood in the part. There must be an increased inflow and only a slightly decreased outflow of blood in order that the maximum amount of the active fighting forces may be present during the whole period of suction. The periods of rest permit the escape of blood from the part, and thus when the suction is once more applied an entirely fresh supply of fighting material is obtained.

3. The Calmette Ocular Reaction to Tuberculin.—Parker concludes from his observations that the Calmette ocular tuberculin test is of as great diagnostic importance as any other single test. positive reaction is indicative of a tuberculous focus sowewhere in the body. The test is uncertain in patients under two years of age, in whom the cutaneous test of von Pirquet is most certain. The test fails in advanced cases of tuberculosis, but there is little need of it here for diagnostic purposes. The initial instillation should be preferably under one per cent. strength, in order that severe inflammatory conditions may not follow its use. If necessary to make the second and stronger test the instillation should be made in the eye not previously used. The consensus of opinion seems to be against using the test in an eye not wholly normal. After complications have occurred from the use of the test, but these have entirely cleared up in a varying length of time. These conditions are not so frequent when the initial test in made with a solution under one per cent. in strength. Recent investigations have shown a greater number of ophthalmic affections due to tuberculosis than formerly supposed, and in the Calmette reaction we have a simple means of distinctive diagnosis which should be thoroughly tried. The ocular reaction is especially valuable for ascertaining the tuberculous nature of cases of phlyctenular keratitis and conjunctivitis, episcleritis and scleritis, chronic iritis and iridicyclitis, interstitial keratitis, and choroiditis. A one per cent. solution of Koch's "old" tuberculin is nearly as good as the Calmette solution for diagnostic purposes.

MEDICAL RECORD June 27, 1908.

 Method of the Spread of Yellow Fever, By Colonel W. C. Gorgas. An Intradural Tumor of the Optic Nerve Removed by the Kronlein Method,

By Frank Van Fleer.

Influenza: Its Diagnosis from a Morphological Standpoint in Stained Specimens of Sputum,

Ry Grapes W. Styles

By George W. Stiles.

Several Cases Illustrating Liver Symptoms in Cardiac By Louis Faugères Bishop. Adverse Suggestion, By Austen Fox Riggs.

The Relation of Pleurisy to Pulmonary Tuberculosis,
By HENRY S. GODDALL 1. Method of the Spread of Yellow Fever .-

Gorgas describes the work done in exterminating yellow fever in Havana, Cuba, and on the Isthmus of Panama. It took eight months to get rid of fever in Havana, but sixteen on the Isthmus of Panama, although the same methods were used in Havana as on the isthmus. But it must be remembered that sanitary work was done two and one-half years in Havana before yellow fever disappeared, while in Panama nothing had been done before. Colonel Gorgas explains the difference in the fol-

lowing way: Take a city such as Panama, in which normally all the conditions are perfect for the perpetuation of yellow fever. Under these conditions, we will say we have one hundred stegomyias to the square yard. When a case of yellow fever occurs the patient is always bitten by mosquitoes during the infective period, and, therefore, always leaves a number of infected stegomyia mosquitoes which can convey the disease to nonimmunes present. This has been the mosquito condition of Panama since the world began. Now, if we reduce those mosquitoes to fifty to the square yard, the yellow fever patient will still be bitten, but not by so many mosquitoes, and therefore there will not be so many infected mosquitoes left. We would still have yellow fever if nonimmunes were present, but not so extensively. We reduce them still further to twenty-five. A smaller number of stegomyias bite the yellow fever patient, and we have fewer infected stegomyia mosquitoes, but still some, and if nonimmunes are present, we have a slight epidemic. We go on still further with our work and reduce them to fifteen. The same results follow, only the epidemic is still milder as to numbers. We go on with our work and reduce them to ten per cent, of the original number. The probabilities are that at this stage if we introduce the vellow fever patient the patient is not bitten, we get no infected mosquitoes, and yellow fever abruptly disappears. While it is possible with ten mosquitoes to the square yard for one mosquito to become infected and give yellow fever to some other nonimmune in the house, it is not probable that this second yellow fever patient will infect a second stegomyia. He is, therefore, inclined to believe that a certain number of stegomyia mosquitoes are necessary for the propagation of yellow fever, and ordinarily in yellow fever countries this number is largely exceeded; that our work goes on reducing the number without showing much results; and that, after awhile, our work reduces the number below this spreading point, when yellow fever abruptly ceases. We should, therefore, keep the mosquitoes below this number, which he calls the yellow fever point. and no matter how many nonimmunes or how many cases of vellow fever are introduced, vellow fever cannot spread.

3. Influenza. — Stiles reviews one hundred cases of influenza, and comes to the conclusion that microscopical examinations of sputum from cases manifesting general respiratory symptoms of disease are absolutely necessary. No matter what the previous diagnosis may have been from the symptomatology alone, further light on the condition of the patient may be had from a microscopical study of the sputum. Valuable information may be obtained from a brief study of well stained specimens of sputum from suspected or complicated cases of influenza. A few cases resembling tuberculosis may be due to infection of influenza bacilli alone or to a mixed infection of the two organisms.

4. Several Cases Illustrating Liver Symptoms in Cardiac Disease.—Bishop remarks that three cardinal symptoms of heart disease are dyspnœa, enlargement and tenderness of the liver, and dropsy. Enlargement and tenderness of the liver is an important indication of the general disturbance of the circulation that results from failure of the heart.

The venous stagnation results in swelling and tenderness of the liver, and the liver affords in this way an important indication of the progress of cardiac disease. The tenderness is often greater in acute cardiac failure than in old cases. An enlargement of the liver during this condition may be considerable, and this disturbance of the liver leads in some cases to a slight degree of jaundice. So valuable a symptom is tenderness and enlargement of the liver that, in picking out the heart cases in hasty hospital rounds when first on duty with upwards of a hundred patients to review in a short time, he has made it a practice to palpate the liver before using the stethoscope. In the absence of enlargement and tenderness of the liver an urgent uncomplicated heart case has hardly ever been found, if the condition has existed several days.

5. Adverse Suggestion.—Riggs remarks that to avoid the evils of adverse suggestion and to take advantage of all the good inherent in favorable suggestion is clearly the duty of every physician. To accomplish this with complete success, it is necessary that one should always keep vividly before one's mind the following facts: The ultimate object of all medical work, whether clinical, experimental, chemical, or whatnot, is relief of suffering. Suffering is a mental process and stands in relation to bodily ills not only as effect, but also as cause. Every patient is suggestible, and is, therefore, a highly individualized psychological as well as a physiological problem, and should be studied and treated as such. Therefore, it is obviously as necessary that the physician should acquire a knowledge of psychology and of its application to medicine as it is that he should be familiar with physiology, pathology, or materia medica, for they are all intimately correlated component parts of the one great

entity—the healing art.
6. The Relation of Pleurisy to Pulmonary Tuberculosis.—Goodall states that a very large percentage of cases of apparently primary sero-fibrinous pleurisy may be demonstrated to be of tuberculous nature by laboratory methods, provided the investigator is sufficiently proficient with the method employed. He finds that in various series of cases that have been followed for some years after the serofibrinous pleurisy, a large number show tuberculosis, the figures varying from fifteen per cent. in Cabot's series to 82.6 per cent. in the series of Fiedler. While it must not be forgotten that pleurisy with effusion may accompany lobar pneumonia or may be caused by the pneumococcus without pulmonary involvement, and that it may also result from streptococci, staphylococci, and other microorganisms, as well as from cancerous disease: and while we must also remember that serous fluid in the pleural cavity may be merely a transudate due to renal or cardiac disease, we must nevertheless be convinced that all these causes together are responsible for only a minority of the cases of so called idiopathic serofibrinous pleurisy, the majority being cases of tuberculosis of the pleura, and to be treated accordingly. Those of us, says the author. who have opportunity to gain special experience in tuberculous work so frequently see pulmonary tuberculosis developing within a year or two after an attack of serofibrinous pleurisy, recovery from

which had apparently been good, that we are ready to accept the conclusion that the great majority of initial serofibrinous pleurisies are of a tuberculous nature. From this it follows that when called upon to treat a case of apparently primary pleurisy with serous effusion, it is the physician's duty to bring to bear upon it as many methods of determining its nature as possible, and that only when there is positive evidence of a cause other than the tubercle bacillus should he discharge the case. In all serofibrinous pleurisies the absence of a demonstrable positive nontuberculous cause should be accepted as a presumptive evidence that the case is really one of tuberculous pleurisy, and the case should be watched and handled as a case of incipient tuberculosis for a period of not less than two years. Signs of pulmonary tuberculosis not infrequently are found first at the upper part of the lung opposite to the side on which the pleurisy occurred. For this reason the entire chest must be investigated. By following this course, while we may perchance exercise control in an occasional case where control is not needed, we will certainly pluck many and many a case from the grasp of the Great Destroyer and prolong many useful lives that would otherwise follow the downward course so common in untreated or tardily treated cases of tuberculosis. This is the more true because the type of tuberculosis following pleurisy with effusion is usually not very violent, and we may therefore expect very satisfactory results from suitable prolonged supervision and treatment.

BRITISH MEDICAL JOURNAL

June 13, 1908.

By D. DRUMMOND. Thoracic Aneurysm, Primary Sarcoma of the Lung,
Myalgia,
The Dangers and Evil Effects of Infant Binders, 2. 3.

The Ink Polygraph, By J. Mackenzie, A Plea for the Habitual Performance of Autopsies in General Practice, Traumatic Rupture of Autopsies in Tr General Practice, By J. T. Fox. Traumatic Rupture of the Large Intestine: Operation:

Recovery, By R. MANWARING-WHITE. The Treatment of Fractures, By H. T. GRAY.

Thoracic Aneurysm. - Drummond holds that aneurysm of the thoracic aorta is undoubtedly a syphilitic disease, though aortic strain from hard work where the tissues are already degenerated by alcoholic excesses must certainly predispose. A strong alcoholic history was obtained in more than forty per-cent. of the writer's cases. Of 225 cases of aneurysm, 170 were sacculated, thirty-nine fusiform, and seven dissecting. In much the larger proportion of cases the aneurysm occurs in the transverse portion of the arch of the aorta. As regards rupture, the trachea and the pericardium are the most vulnerable structures, whilst rupture into the left pleura, left bronchus, and superior rena cava and œsophagus are of comparatively frequent occurrence. The usual age at which thoracic aneurysm develops seems to be from thirty-five to sixty years. Only occasionally is it met with in advanced life, and then it is but rarely of the sacculated form. Aneurvsm is rare among women, it occurring eight times more frequently in men. The chief physical signs and symptoms of thoracic aneurysm, in the order of their relative frequency,

are as follows: Pain. A striking characteristic of aneurysmal pain is that it is nearly always complained of at night. The patient goes to bed feeling comfortable, and is awakened by the pain, for the relief of which he alters his position, sitting up, or even walking about the room. In many cases there are two distinct types of pain-one anginal, worse through the day, aggravated by exertion, and relieved by resting; the other, the true aneurysmal pain, worse at night, and relieved by change of posture. Anginal pain is often referred to both arms. The position of the aneurysmal sac may frequently be diagnosticated from the distribution of the pain. Two aneurysmal sites in which pain is a rare feature are the sinus of Valsalva and the posterior part of the descending transverse arch. Sacs springing from the lower part of the front of the ascending arch produce pain referred to the pericardium; later it is referred to the right shoulder. The higher on the arch, the higher the location of the pain, and the more the sac approaches the posterior part of the inside of the ascending arch the greater is the tendency for the pain to pass towards the right. Posterior aneurysms tend to affect the right shoulder more frequently than the left, whilst the reverse is the case with those springing from corresponding positions on the front of the arch. Cough. This is often present for some time before any other symptoms manifest themselves. It is usually loud, in-effectual, and paroxysmal. Later on it assumes a ringing metallic character, and later the husky "leopard growl," characteristic of pressure on the trachea. Pulsating tumor. This, though a very frequent physical sign, is not always easy to distinguish. Alteration of the second aortic sound. This is detected by means of the stethoscope; this is loud and voluminous, and is best heard away from the aortic valves, practically over the sac at the point where it approaches nearest the chest walls. equality of pupils. This is a common symptom, and is most frequent in cases of sac arising from the transverse portion of the arch. Inequality of pulses. This sign may be difficult to detect, and its recognition will be facilitated by instructing the patient to inspire and expire slowly and deeply. Dysphagia This seldom amounts to serious obstruction. It may affect both fluids and solids, but more frequently the latter. Paralysis of the vocal cords. This is not always attended by hoarseness, so that a careful laryngoscopical examination should be made in every case. The abductors are first affected and later the adductors which only become paralyzed after considerable pressure on the recurrent. Tracheal tugging. This is detected by gently grasping and attempting to elevate the cricoid cartilage, when a jerk can be felt synchronous with the cardiac systole. Tracheal whiff. This may be heard either over the trachea or in the mouth. It is usually systolic, but may be double, and is usually heard best when the patient is expiring slowly after a deep inspiration with the mouth wide open.

3. Myalgia.—Keith restricts the term myalgia to pain in the muscles caused by strain. It often simulates acute articular rheumatism, acute inflammatory maladies, and visceral disease, such as appendicitis. But the previous history, the normal temperature and pulse, and the beneficial effects of

rest, usually suffice to make the diagnosis clear. It must be borne in mind that the pain may suddenly make its appearance some time after the exciting cause has ceased to be in action. The most essential point in treatment is to place the painful muscle or muscles in the most restful position possible. In severe abdominal cases rest in bed with morphine may be necessary. In less severe forms a stout abdominal belt may be all that is required. Investigation should be made as to any existing cause of debility, such an anæmia, leucorrhœa, oral sepsis, etc. Myalgia occurs either in robust patients who have undergone unusual strain, or in the debilitated in the course of their usual work.

4. Infant Binders .- Waring has become deeply impressed with the vast amount of harm and suffering caused by the discomfort and the constriction of the abdomen and thorax due to the use of infant binders. Among the results and conditions which may result from binder compression are the following: I. Discomfort. This may be so great as to cause restlessness, crying, and loss of sleep. Typical outward signs are lividity of the face, dilated temporal veins, and clenched fists. 2. Vomiting frequently results from undue constriction, being enhanced by flatulent distention, and being more of the nature of a regurgitation. 3. Inguinal and umbilical hernia. The increase in both the intraabdominal and intrathoracic pressures caused by the binder throws the whole pressure on the inguinal region, and leads to the occurrence of inguinal hernia. The frequent slipping upwards of the binder uncovers the umbilicus, and thus tends to produce umbilical hernia. 4. Prolapsus ani, following hæmorrhoidal distention of veins. 5. Thoracic deformities, due to arrest of the growth and development of the chest. Happily, such a contracted chest may subsequently expand to normal proportions. Thoracic constriction in pulmonary disease is obviously most harmful, as it hampers respiratory movements and impedes free entry of air and oxygenation. 7. The cerebral circulation may be so disturbed by severe constriction as to give rise to convulsions. 8. Asphyxia due to "overlying" by the mother, may be rendered fatal if the child has on a tight binder, constricting the movements of the chest.

LANCET.

June 13, 1908.

Septicæmia (Malta Mediterranean Fever), (Melroy Lectures, I), By J. W. H. Eyrr.
The Dangers and Treatment of Myoma of the Uterus (Ingleby Lectures, II), By C. Martin.
A Contribution to the Bacteriology of Cerebrospinal Meningitis,

Melroy Lectures, III,
By W. J. Wilson.

Meningitis,
The Treatment of Intractable Hay Fever and Paroxysmal Corrya by Resection of the Nasal Nerve,
By E. S. Yonge.
By A. E. Morison.
A Case in which Occlusion of the Abdominal Aorta
Took Place,
By C. H. CATILE.
The Treatment of Gangrene in Strangulated Hernie
at St. Thomas's Hospital, 1901 to 1905.
By E. M. CORNER.
A Case of Dissecting Aneurysm of the Pulmonary

8. A Case of Dissecting Aneurysm of the Pulmonary Artery; Patent Ductus Arteriosus; Rupture into the Pericardium, By L. Durno and W. L. Brown.

2. Myoma of the Uterus.—Martin, in his second Ingleby lecture, takes up the treatment of myoma uteri. Nonsurgical treatment. Ii a patient has only a small myoma which is not growing, and not causing pain, severe hæmorrhage, or interference with her health or comfort, an operation should not be advised. But careful watch should be kept over the case. A fibroid which is not actively growing may yet vary in size from time to time, being larger and more vascular just before the period and smaller after it. So that all examinations should be made at the same corresponding time each month. A patient with a troublesome myoma should rest as much as possible, and should stay in bed during the period. If there is a tendency to flooding, the foot of the bed should be raised twelve inches or more. All strain and fatigue and all violent physical exercise should be avoided as tending to bring on sudden and alarming bleeding. Suitable measures should be taken to prevent conception. Sexual intercourse is very apt to start hæmorrhage in all cases of polypus and most submucous fibroids, and should then be forbidden. No corsets should be worn, as they tend to press the tumor down into the pelvis, and keep up a condition of chronic venous congestion by obstructing the abdominal veins. The wearing of a light abdominal belt is sometimes beneficial, especially where the tumor is of large size. It is sometimes useful to support the uterus from below by means of a pessary. Drug treatment is unsatisfactory, and resolves itself into the alleviation of symptoms. Of these, hæmorrhage is the most important. Ergot is our chief remedy for the control of the bleeding and is often of great value. But beyond checking the bleeding, its effect on the myoma is not good. The uterine contractions which it excites tend to convert an interstitial fibroid into either a subserous or submucous one, and the tendency to flooding is increased. The prolonged use of ergot predisposes to degeneration and necrosis of the fibroid by interfering with its blood supply. Hydrastis is often prescribed with ergot. Calcium chloride increases the coagulability of the blood and is often of undoubted service. Bromide, iodide, and chlorate of potassium have all failed to be of service in the writer's hands. In cases of anæmia care should be taken in ordering iron as a tonic, as it may excite dangerous hæmorrhage. The organic preparations are safer than the inorganic. The bowels should be kept well open, as straining at stool may cause hæmorrhage, and also fibroids frequently cause hæmorrhage from pressure. Plugging the uterus and vagina is of great help in controlling dangerous bleeding. Electrolysis as a means of treatment has been given a careful trial and has been abandoned as futile and dangerous. Surgical treatment. Among the contraindications to operation are: (1) Where the tumor is smaller than an orange, is causing no symptoms, and is not growing; (2) where the patient is past the change of life and the myoma is quiescent and causing no trouble; or (3) where the patient is gravely ill from some other condition, such as pulmonary tuberculosis, heart disease, or nephritis, which will of itself prove fatal before long. On the other hand, an operation is called for: (1) Where there is severe bleeding, uncontrolled by rest and ergot; (2) where there is rapid or persistent growth of the tumor; (3) where there are signs of degeneration, necrosis, or malignant disease; (4) in many cases complicated with pregnancy; (5) in cases complicated with gross lesions of the ovaries and tubes; (6) where there are marked symptoms of pressure on the urinary organs; (7) where the tumor is very large and from its great bulk and weight becomes a burden; (8) in some single women where the tumor, from its size, leads to unfounded suspicions of pregnancy and causes the patient much unhappiness; and (9) in cases of sterility due to the presence of a myoma which can be removed without sacrificing the uterus. The vaginal operations for myoma may be classified as follows: Curetting. This should be performed after the removal of a fibroid polypus or a submucous myoma, in order to cure the accompanying endometritis. It is seldom of more than temporary benefit, and is dangerous in cases complicated with pyosalpinx or ovarian abscess. Removal of polypi. These should be removed as soon as discovered, beng either twisted off with volsella, or by crushing and ligating the pedicle. Vaginal myomectomy. This is the operation par excellence for the removal of submucous growths, which are usually single. Ligature of the uterine arteries has never found much favor in England. Vaginal hysterectomy is the best operation to perform in cases of small myomata, as it removes the whole of the disease, does not involve an abdominal scar, and the risk to life is but moderate. It may be very dangerous if the uterus is larger than a three months' pregnancy, if it be fixed by adhesions, or if the case be complicated by pyosalpinx or ovarian abscess. The more important abdominal operations for myoma fall under three headings: (1) Removal of the uterine appendages, where the tubes and ovaries are taken away, but the uterus is left behind. This operation has been abandoned. (2) Hysterectomy, where the tumor with most or all of the uterus is removed. This may be intraperitoneal or extraperitoneal. (3) Abdominal myomectomy, where all the tumor itself is removed but the uterus itself is saved. This is the operation of the future. The writer has performed it seventy-three times, with one death; low as that death rate is, it should be reduced to zero.

LA PRESSE MEDICALE.

May 20, 1908.

Characteristics of the Passive Immunity Conferred by Serum Therapy, By B. WEILL-HALLE and HENRI LEMAIRE.

May 23, 1008.

1. Prophylaxis of Syphilis in the Army By C. H. Lemoine. By R. Romme. Apropos of Infusions of Oxygen,

1. Prophylaxis of Syphilis in the Army.-Lemoine reprints the figures given by Fournier after a statistical study of the morbidity in the different European armies showing the consequences of prostitution. The German army showed a morbidity of 5.7 per 1,000, the Belgian 6.7 per 1,000, the French (including the troops in Algeria) 6.8 per 1,000, the Bavarian 9 per 1,000, the Russian 12 per 1,000, the Italian 13 per 1,000, the Roumanian 16 per 1,000, the Austrian 19 per 1,000, the English, metropolitan troops, 75 per 1,000, colonial troops, 139 per 1,000. The minimum was found in Germany, the country in which prostitution is most severely regulated, the maximum in England, in which prostitution is not

regulated. The natural conclusion from these figures is in favor of regulation of prostitution as a means of reducing the number of syphilitics.

May 27, 1908.

r. Spontaneous Sporotrichosis of the Dog. Subcutaneous Gumma, Granular Peritonitis, and Hepatic Gumma, By Gougerof and Caraven.

By MAURICE LETULLE. Lumbar Appendicectomy, By F. LEGUEU.

- Spontaneous Sporotrichosis in Dogs.— Gougerot and Caraven describe very elaborately the lesions present in three dogs, all of the same litter, that suffered from sporotrichosis which had not been artificially induced. The course of the disease in each dog is described, and after that the histological condition of the tissues and organs. Finally they state that this proves the spontaneous occurrence of sporotrichosis in dogs, and that this disease may appear in at least two forms, one marked by suppurating cervical gummata and diseases of the joints. This form is sometimes fatal, sometimes curable, but leaves behind it rhachitic, bony deformities, and entails a retardation of development. The other, much more serious, is characterized by a granular peritonitis, hepatic gummata, and pulmonary involvement. The discovery of spontaneous sporotrichosis in animals explains one manner in which the diffusion of the Sporotrichum Beurmanni takes place, and suggests the possibility of transmissibility from the ani-
- 3. Lumbar Appendicectomy. Legueu describes in detail the removal of the appendix through an incision in the lumbar region, an operation which he thinks is preferable to the usual one through the abdominal wall.

LA SEMAINE MEDICALE. May 20, 1908.

I. Adrenalin and Osteomalacia,

By Professor R. DE Bovis.
Conditions of Admission of Foreign Students into the French Faculty of Medicine

Adrenalin and Osteomalacia.—De Bovis has collated the French, Italian, and German literature on this subject, but does not seem to add anything of importance.

May 27, 1908.

Mucous Colic,

By L. CHEINNISSE.

Mucous Colic.—Cheinisse, after a review of the literature on this subject, declares that this diagnosis can be made positively only after prolonged and minute observation of the patient. The condition is one of a periodic mucous hypersecretion, while during the intervals the stools remain free from mucus.

BERLINER KLINISCHE WOCHENSCHRIFT May 18, 1908.

- Periosteal Fibrosarcoma of the Left Os Innominatum with Metastases Almost Exclusively in the Bony System, By Kohsaku Nunokawa.
- Concerning the Substances in the Blood Serum Which
 Promote Phagocytosis, By Kurt Mever.
 Concerning New Methods of the Investigation of Im-
- By Weichardt. By Unschuld.
- Treatment of Exophthalmic Goitre with the Antithyreoidin of Mocbius, By Walther Baumann.
 The Keating-Hart Fulguration Treatment of Cancer,
 By E. Rosenkranz.
 A Method for the Disinfection of Stomach Tubes in Daily Practice,
 By E. Fuld.

The Connection between Diseases of the Nose and of the Nasopharynx with Those of the Eye (Concluded),
 Criminal Abortion,
 By A. Onodi. By Hugo Marx.

2. Substances in the Blood Serum Which Promote Phagocytosis.—Meyer says that the opsonin of the normal serum has the same structure as the bacteriolysin, i. e., it is made from two components, one thermostabile, the other thermolabile and acting as a complement. It may be that the amboceptor and complement are loosely united, or that the union between bacteria and amboceptor can be easily dissolved. Further investigations are necessary to determine whether, on account of this behavior, an identification of the opsonin with the bacteriolysin is inadmissible.

5. Treatment of Exophthalmic Goître with the Antithyreoidin of Moebius.—Baumann states that he effected a complete cure of a well marked case of exophthalmic goitre in a woman, twenty-seven years of age, by the administration of the antithyreoidin of Moebius. Eight drops were given three times a day at first, then ten drops three times a day. Only thirty c. c. was given, and the

treatment lasted only three weeks.

7. Disinfection of Stomach Tubes.—Fuld recommends to place the tube in fifty per cent, glycerin, heat it to a temperature of 70° C., and maintain this temperature for twenty minutes. He alleges that this surely kills all pathogenic germs, is a convenient precedure, and does not injure the tubes.

8. Connection between Diseases of the Nose and Nasopharynx and Those of the Eye.—Onodi deals in his long paper wholly with the ocular symptoms and diseases produced by inflammation of the

accessory sinuses of the nose.

9. Criminal Abortion.—Marx makes the interesting statement that criminal abortion and child murder have a certain inverse ratio to each other. In the large cities, where the opportunities are greater, criminal abortion is the more common, while in the country, where such facilities are more lacking, child murder is proportionately more common.

Proceedings of Societies.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.

(Concluded from Vol. LXXXVII, page 1265.)
The Intrapelvic (Supplied) vs. the Ardoninal meti

THE INTRAPELVIC (SUBPUBIC) VS, THE ABDOMINAL METH-OD OF DEALING WITH MECHANICAL OBSTRUCTION TO DELIVERY.

Dr. E. REYNOLDS, of Boston, stated that if extraction was possible in a given case without hard pulling, Cæsarean section would not be indicated. In cases in which a severe labor was clearly probable, the Cæsarean section was indicated. A low maternal mortality was the prime consideration, and should determine the choice of operative method. In the Cæsarean section at the beginning of labor the maternal mortality should not exceed one per cent. In neglected labors the maternal mortality rate from this method increased rapidly. In any case, the mortality was influenced by the condition of the mother when the operation was performed. The risks for the child were greater than for the mother. In neglected labors the Cæsarean section should be limited to cases in which delivery by the natural route was not possible. The mechanical

difficulties likely to be encountered in a given case could usually be predicted. Cases of difficulty by the natural route meant danger for the child and disease for the mother. The results of primary Cæsarean section in multiparæ could be foretold with considerable accuracy, but with less accuracy in primaparæ, for the injury to the soft parts in the latter was a matter for careful consideration. With soft parts which were not readily dilated, the prospects were often unfavorable for both mother and child. In general, it might be said that intrapelvic operations were suitable for strong, young primaparæ, and the Cæsarean section for old primaparæ. The Cæsarean section was an operation which was not usually within the province of the general practitioner.

Dr. R. C. Norris, of Philadelphia, believed that modern results of elective Cæsarean section justified the extension of the limit of the absolute indication. If the conjugata vera measured no more than 71/2 to 8 centimetres, the indication for section was absolute. Cases in which a section would probably be required should be carefully examined and studied. The high mortality from section in neglected labors was due to infrapubic sepsis. In examining a patient the relations of the fœtal head to the maternal brim should be ascertained by suprapubic pressure, the bony prominences should be noted, and the condition of the soft parts ob-The external measurements were not always of great importance, but the reverse was true as to the height of the sacral promontory and the symphysis pubis. The mortality and morbidity in all cases were influenced by the duration of the first stage of labor as well as by the conditions of delivery. It was not necessarily true that in any given case an abdominal operation would be tolerated as well as a subpubic one. In the majority of cases, the patient should have the benefit of the test of labor, but the duration of this test should be short, after which the question as to the form of operative procedure should be considered. More favorable than Cæsarean section was the induction of labor from two to four weeks before term.

Dr. E. H. GRANDIN, of New York, preferred the premature induction of labor in the lesser degrees of contraction, if the head could be made to enter the brim: otherwise the Cæsarean section, with the consent of the parents. Version was still an approved operation with the speaker in cases in which dilatation was proceeding slowly; it was preferable to the high application of the forceps. Symphysiotomy rather than pubiotomy was recommemded for cases in which version was impracticable. If the birth canal was obstructed by tumors, whether solid or cystic, they should be removed early in the labor. The tentative use of the forceps was not advisable. Abdominal Cæsarean section was advocated when the conditions were unfavorable for other operative procedures. The vaginal Cæsarean section was indicated in cases in which there was toxæmia or hæmorrhage, but manual dilatation and forceps delivery was to be preferred to that operation.

Dr. B. C. Hirst, of Philadelphia, was an advocate of the induction of labor during the ninth month in cases in which normal labor was improbable. This was preferable to publiotomy or symphysiotomy. Cæsarean section was advisable under favorable conditions within twenty-four hours of the time for labor, but it was allowable even after labor had progressed for hours, especially if no other operation had been attempted. The fœtal mortality of induced labor amid favorable surroundings was less than ten per cent. The speaker's technique for Cæsarean section, with careful preparation of the vulva, vagina, and abdominal wall, was described.

Dr. A. Lapthorn Smith, of Montreal, believed that Cæsarean section had reached such a degree of perfection that it should have no more mortality for mother or child than normal labor when performed as an operation of election and by an experienced operator. This could not be said concerning the prolonged use of the forceps or of even

the best of the subpubic methods.

Dr. E. P. Davis, of Philadelphia, urged the necessity of examining patients before labor began, but admitted that it was not always practicable. Owing to the variety in the different classes of patients, the element of chance would always be significant. In hospital cases in Europe, the consideration for the child was often not so great as that for the mother; this was especially true with unmarried women. This distinction was a bad one, and should not obtain. A child of such parentage might develop into a good and useful citizen. Doctors were often at fault in hurrying labor by instrumental means, especially in primiparæ. As to the Cæsarean section, its mortality, even in the neglected cases, was not necessarily high, especially if the forceps operation or version had not been attempted; when it was employed as a last resort, the mortality rate would always be high, and the same must always be true when the Porro operation was performed. The possibilities of the suprasymphysial operation must not be forgotten as an alternative to the Cæsarean section.

Dr. F. PFANNENSTIEL, of Kiel, Germany, stated that the German law required the consent of a patient or those who were responsible for her before a serious operation was performed, but, having obtained this consent, one could do what seemed indicated. In cases of moderately contracted pelvis, he would recommend nebotomy or symphysiotomy, reserving Cæsarean section for the higher degrees of contraction. Pelvimetry he considered essential, especially the mensuration of the conjugata vera. Löhlein's measurements, both for the conjugata vera and the transversa were approved.

vera and the transversa, were approved.

Dr. R. A. Murray, of New York, thought the weak point in the obstetric teaching of the day was the failure to impress upon students the lesson that Nature should be given a chance before interference was attempted. Practitioners were constantly making complications by interference with normal labor, sufficient time not being allowed for moulding and the mechanism of labor. He was almost in favor of abandoning version and the high forceps operation upon the unengaged head and for primaparæ. He would favor Cæsarean section after twenty-four hours of test labor, in preference to symphysiotomy, especially in view of the dangers from sepsis and hemorrhage in the latter.

Dr. M. McLean, of New York, advocated giving Nature more time, and he was not in favor of premature delivery. If Nature failed after a test labor of sufficient duration, he would advise Cæsarean section.

Dr. H. D. FRY, of Washington, was a convert to the advocacy of Cæsarean section, if a test labor showed that Nature had failed, and he believed this would be the advice of the obstetrician of the future. Version he regarded as an undesirable operation.

Dr. A. Lapthorn Smith said he had been unable to induce women who had borne dead children to submit to the induction of premature labor, and also to induce them to live upon a spare diet to minimize the development of the fœtus. To require that parents should be asked before doing an obstetric operation was often impracticable; the mother might be in agony or unconscious, and the father unable to judge as to the merits of the situation. This society should formulate the opinion that the elective Cæsarean section under proper conditions had no death rate. He believed it was much superior to accouchement forcé. Even in infected cases in which the Cæsarean section was performed the mothers could usually be saved if they were placed in the Fowler position with a large drainage tube in the uterus.

The Development of the Technique of the Gynæcological Operations.—Dr. A. MARTIN, of Berlin, Germany, reviewed the progress of the art during the past fifty years. The basis of the increasing value of gynæcological operations consisted in the more perfect knowledge of normal and pathological anatomy and of diagnosis. As to the vaginal and abdominal routes of attack, each method had its defenders. Much difficulty would arise from either method in the presence of adhesions. These must always be treated cautiously and intelligently, lest great injury be done to surrounding structures. The use of oil and other substances in the peritoneal cavity for the prevention of adhesions was not advisable. As to drainage, the method which used the vagina if possible was the most efficacious. Vaginal operations were preferable when the question of shock was of major importance. As to anæsthesia, it should always be as brief as possible. The vaginal route was valuable, but should not be used exclusively; it was not usually the best route to overcome dense adhesions, but it had the decided advantage that it could be abandoned if necessary, and an operation finished through an abdominal incision. The vaginal route was valuable in the treatment of displacements of the uterus, including prolapsus and its complica-tions, but it must not be forgotten that in many of the cases of displacement no operation was necessary. The vaginal route was also useful in the treatment of acute inflammations of the pelvic organs, and such treatment would often have a favorable bearing upon the question of subsequent pregnancy. In tubal gestation the abdominal route was preferable, especially after the third month; previous to that time the vaginal route could be used, especially if the tissues involved were encapsulated. Hæmorrhage in the pelvis should be treated by whichever method one could use to best advantage. In the treatment of cancer of the cervix the vaginal method was advocated, a wide dissection being made after Sehauta's plan. The abdominal route

gave the greater advantage in the inspection and treatment of the appendix, but disease of that organ was far less common in Europe than it seemed to

be in America.

Abdominal and Vaginal Cœliotomy for Gynæcological Operations; their Indications and Technics.-Dr. F. PFANNENSTIEL, of Kiel, Germany, stated that either method was available for the majority of gynæcological operations. That one should be preferred which in the judgment of the surgeon would give the best chances for life and health to the patient, primarily and secondarily. In all intraperitoneal diseases, the abdominal route offered the best opportunity for either radical or conservative work. Thus, in aseptic cases, this route would ordinarily be chosen for tumors, extrauterine gestation, chronic inflammations, malformations, etc. In septic cases in which the infectious material could be completely removed, the vaginal route was preferable, unless it was desirable that the entire operative field should be exposed to view. Disease of the appendix and cancer, except in very early invasion of the cervix, should be treated by the abdominal route. The vaginal route was also preferable for conditions of descensus and prolapse and for movable retrouterine displacements, colporrhaphy being a portion of the operative procedure. Either the anterior or posterior vaginal incision, or both, might be used, as occasion required. For the abdominal incision the method first suggested by the author, namely, the transverse incision, had been eminently satisfactory

D. C. P. Noble, of Philadelphia, in discussing the previous papers, stated that with suppurating ovarian tumors he preferred to operate radically by the abdominal incision primarily, rather than to evacuate and drain by the vagina, and subsequently remove the cyst. He agreed with Pfannenstiel in the eligibility of the vaginal route for myomectomy, if the myoma was smaller than a feetal head. He approved of the Pfannenstiel incision, and thought the recti muscles with that method would act as an effi-

cient support to the wound.

Dr. C. CLEVELAND, of New York, had found the Pfannenstiel incision useful in many cases, and thought it enabled one to get at the pelvic organs more readily than by the vertical incision. It also enabled one to protect the intestine sufficiently and to get at the appendix, which he always removed if it was abnormal in the slightest degree. The Pfannenstiel incision was especially useful with fat women, and often enabled one to obviate infection at the lower depression of the abdominal wall. In his technique he made use of the peritoneal suture and overlapped the fascia.

Dr. I. S. Stone, of Washington, believed that many of the problems in abdominal surgery could be worked out only by means of the abdominal incision, especially in cases in which any portion of the digestive tract was involved. In the tuberculous cases, which were extremely important, it was very difficult to do effectual work through the vagina. The Pfannenstiel incision had appealed to him in

many cases of abdominal disease.

Dr. J. R. Goffe, of New York, found it very interesting to hear the views of the two distinguished visitors, after their many years of experience. He admitted that he had reached the conclusion that

the scope of the vaginal route was not so great as he had long supposed. It was certainly to be preferred for the treatment of pelvic abscess and also hæmatocele, when infected. In fibroid tumors it was available unless the tumor was larger than a fœtal head. It had no advantage over the abdominal incision, unless the diseased organs were the more readily attacked by the vaginal route. He had found it a satisfactory avenue, not only for the plastic work of the vagina, but for the chronic inflammatory diseases of the pelvic organs, complicated with displacements. He preferred the anterior to the posterior vaginal incision, and the opening could be made as large as the vulva. The conservative work upon the pelvic organs could be done by this route, the tubes being spared when necessary. Drainage with gauze in such operations was effective.

Dr. H. J. Boldt, of New York, stated that he seldom operated upon the Falloppian tubes when in the acute stage of inflammation, but if it terminated in abscess pointing in the pelvis, he incised them through the vagina. In seventy-five per cent. of the cases of pelvic disease the appendix was involved, and it could best be reached through the abdomen. He made use of vaginal operations less frequently than formerly. If the round ligaments required shortening, he preferred Alexander's

operation.

Dr. R. L. Dickinson, of Brooklyn, had found that by using the Pfannenstiel incision with fat women, suppuration was not likely to occur. As to the vaginal or abdominal route, it was largely a question of personal skill and preference. It was quite possible to remove small ovarian and parovarian cysts by the vagina. In cases with adhesions, the abdominal route was preferable.

Dr. S. C. Gordon, of Portland. Me., advocated the drainage of tubes which were in an acute stage of inflammation by the vagina, and this was about all the use he had for the vaginal route. He adhered to the vertical median abdominal incision, and for closing the wound he still had faith in interrupted sutures of worm gut, closing the fascia with catgut. He was too old to go back to the

vaginal incision.

Dr. H. A. Kelly, of Baltimore, still persisted in the abdominal method, notwithstanding the excellent vaginal work which had been done by others. The vaginal route was proper enough for the injuries to the pelvic floor and the minor cases of pelvic disease. For the severe inflammatory diseases of the pelvis he preferred the abdominal way of attack, especially in the cases of large fibroid tumor and disease of the appendix. It also gave one a good opportunity to examine the gallbladder. The Pfannenstiel incision was useful, as already stated, for fat women.

Dr. C. C. FREDERICK, of Buffalo, thought there was a distinct field for each variety of incisions. He agreed with those who treated acute pelvic inflammation by the vaginal incision and drainage, but he never used this route for chronic pelvic disease. When ovaries were diseased only in part, he removed only the diseased portion. In the case of small fibromata or small ovarian cysts he operated through the anterior vaginal fornix.

(To be concluded.)

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

An Index of Treatment. By Various Writers. Edited by ROBERT HUTCHISON, M. D., F. R. C. P., Physician to the ROBERT HUCHSON, M. D., F. K. C. F., Filystella to the London Hospital and Assistant Physician to the Hospital for Sick Children, and H. STANSFIELD COLLER, F. R. C. S., Surgeon to St. Mary's Hospital, etc. Revised to Conform with American Usage by WARREN COLEMAN, Conform with American Usage by Warren Coleman, M. D., Professor of Clinical Medicine and Instructor in Therapeutics in Cornell University Medical College, etc. New York: William Wood & Co., 1908. Pp. xv-888.

This is a practical presentation of therapeutics, partly medical and partly surgical. For the most part the headings are the names of morbid conditions, though a few of them are those of remedial measures, all arranged alphabetically, with a liberal system of cross references. Some of the articles are wholly therapeutical, but in many of them considerable space is taken up by matter more or less irrelevant to treatment. It is probably on this account that it was thought necessary to resort to the extensive use of very small type to prevent the volume from becoming unwieldy. The result is that it is not easy to read; however, it is not meant for continuous reading, but rather for reference. Another device for saving space is the printing of prescriptions in two columns. Had the page been made double columned, the book would, we think, have gained in appearance.

The contributors are seventy-two in number, and necessarily the articles vary greatly in value. Many of them will be found decidedly helpful by the general practitioner, and it is always well to avail ourselves of light from as many sources as possible. Among the best of the articles, in our opinion, are those on nephritis, by Dr. J. Rose Bradford and Dr. Samuel West. Some diseases appear to have been omitted, such as acidosis, kraurosis vulvæ, and amœbic dysentery. We do not find symmetrical gangrene entered under its own head, and the student who is not familiar with the literature of the subject may imbibe from the book the notion that Raynaud's disease is but another name for chilblains.

Some remedial measures more or less esteemed seem to have escaped notice. For example, we find no mention of yeast in the article on boils or in the one on leucorrhœa; high frequency currents appear to have eluded the author of the article on electrotherapeutics; if there is any mention of radium, the x rays, and the Finsen light treatment, we have failed to find it; the salts of cotarnine are not referred to in connection with uterine hæmorrhage; alcohol does not figure in the treatment of carbolic acid poisoning; and cerium oxalate and ipecac find no place in the article on the vomiting of pregnancy. This, we must say, is a weighty list of omissions.

At least one subject is considered more than once. Mammary abscess is treated of on page 4 and again on page 484, and in addition there is an article on mastitis. In the article on pruritus vulvæ we find this rather astonishing statement: "Pediculi pubis may be the cause of pruritus, but probably only

when their presence is accidental rather than habitual." We congratulate the editors on their reference of "enteric fever" to typhoid fever. The term enteric fever has never found favor in this country, and our opinion is that it does not deserve recognition.

We have noted some faults of expression, such as these: "At right angles to the anus" (page 3), "this" [Lister's method of anæsthetizing with chloroform] "consists in drawing the corner of a towel through a safety pin till a mask is formed reaching from the chin to the root of the nose," and "although tetanus is one of the few organisms," etc. We find the following inconsistent statements in the article on blackwater fever: "Ouinine is useless, and in some instances has caused the attack. If the parasites of malaria continue to be present during the attack, quinine is necessary." As a rule, the prescriptions are printed with unusual accuracy. On page 7, however, we find the following directions: "Fiat Chartula No. j. Every four hours." How can one and the same powder be taken every four hours?

Dr. Coleman's appendix is exceedingly useful. It contains "brief descriptions of preparations in common use in Great Britain, but comparatively unknown in America." Many of these preparations are proprietary.

Life Insurance and General Practice. By E. M. Brock Bank, M. D. (Vict.), F. R. C. S., Honorary Assistant Physician, Royal Infirmary, Manchester, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1908. Pp. xiv-288.

Intended primarily for the use of life insurance examiners, this recent addition to the excellent series of Oxford medical publications cannot fail to interest a much larger circle of medical readers. It really contains a well written exposition of all the practical points in physical diagnosis, and in the section on impaired lives considers in an adequate manner the important subjects in relation to life insurance of tuberculous disease, cancer, alcoholism, syphilis, and other organic diseases. There are brief but interesting chapters on deformities and abnormities, sea and war risks, and the special dangers incident to life in the tropics and dangerous climates. The physician will find in this modern work of Dr. Brockbank's many familiar facts discussed from a novel view point.

BOOKS, PAMPHLETS, ETC., RECEIVED

Electrical Treatment. By Wilfred Harris, M. D., F. R. C. P., Physician to Out Patients, Physician to the Department for Nervous Diseases, and Lecturer on Neurology, St. Mary's Hospital, etc. Illustrated. Chicago: W. T. Keener & Co., 1908. Pp. x-383.

Keener & Co., 1908. Pp. x-383.

Subcutaneous Hydrocarbon Protheses. By F. Strange Kolle, M. D., Author of The Recent Rönigen Discovery, etc. New York: The Grafton Press, 1908. Pp. 153.

Diseases of the Nervous System. By H. Campbell Thomson, M. D. (Lond.), F. R. C. P., Physician to Out Patients at the Middlesex Hospital Medical School, etc. With Eight Colored and Twelve Black and White Plates, and One Hundred and One Figures in the Text. Chicago: W. T. Keener & Co., 1908. Pp. xv-480.

The True Way of Life. By Dr. Nanny Randolph Ball Baughman. Burlington, Iowa: Published by the Author, 1968. Pp. 108

Bauginnan. Durington, 168a. Familier of the Scientific Process Pp. 168

The Heart and Sudden Death. By Theodore Fisher, M. D., F. R. C. P., Assistant Physician to the East London Hospital for Children, etc. London: The Scientific Proc., Lumited, 1668 Pp. 53 (Price, 2s.)

Miscellany.

How to Enter the Army Medical Corps.—The following is the substance of recent circulars of information:

The Medical Corps now consists of a surgeon general with the rank of brigadier general, fourteen colonels, twenty-four lieutenant colonels, one hundred and five majors, and three hundred captains or first lieutenants with rank, pay, and allowances of officers of corresponding grades in the cavalry.

Vacancies in the Medical Corps are filled by appointment to the junior grade (first lieutenant). After three years' service lieutenants, upon passing an examination to determine their fitness, are promoted to the grade of equite in

moted to the grade of captain.

Promotion to the grades of major, lieutenant colonel, and colonel is by seniority, but there is an examination for that of major and another for that of lieutenant colonel. Advancement to the grade of colonel takes place without further examination. The surgeon general is selected by the President from among the officers of the corps.

To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by ten per cent. for each period of five vears' service until a maximum of forty per cent. is reached. A first lieutenant receives \$2,000 per annum, or \$166.66 monthly. At the end of three years he is promoted to the rank of captain and receives \$2,400 a year. In two years more he receives an increase of ten per cent. for five years' service, making \$2,640, or \$220 a month. Aften ten years' service the pay would be \$2,880 annually, or \$240 a month. The pay attached to the rank of major is \$3,000 a year, which, with ten per cent. added for each five years' service, becomes \$3,600 after ten years' service, \$3,000 aften fifteen years' service, and \$4,000 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier general is \$375, \$416.66, and \$500, respectively. Officers, in addition to their pay proper, are furnished with a liberal allowance of quarters according to rank, either in kind or, where no suitable government building is available, by commutation; fuel and light therefor are also provided. When traveling on duty an officer receives mileage for the distance traveled, including the travel performed in joining his first station after appointment as first lieutenant; the amount allowed is usually sufficient to cover all expenses of the journey. On a change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below that of brigadier. Horses and horse equipments are furnished by the government for all mounted officers below the grade of major. Groceries and other articles may be purchased from the commissary at about wholesale cost price. Instruments and appliances are liberally supplied for

the use of medical officers in the performance of their duties. Well selected professional libraries are supplied to each hospital, and standard modern publications on medical and surgical subjects are added from time to time; current issues of a number of representative medical journals are also furnished for the use of medical officers.

Leave of absence on full pay may be allowed at the discretion of the proper authority at the rate of one month a year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay.

Medical officers are entitled to the privilege of retirement after forty years' service or at any time for disability incurred in the line of duty. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three fourths of the pay of their grade (salary

and increase) at the time of retirement.

When medical officers with the rank of captain approach the period of their examination for promotion to a majority, they are usually assigned to duty as attending surgeons at or near the principal medical centres of the United States, to enable them to become familiar with the practice of the leading physicians and surgeons of this country, and to attend medical lectures, meetings of medical societies, etc. These assignments are made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the advantages thereby afforded. At the end of this tour of duty they are required to make a detailed report to the surgeon general, showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advance-

Appointments to the Medical Corps of the army are made by the President after the applicant has passed a successful examination before the Army Medical Examining Board and has been recommended by the surgeon general. Due notice of the meeting of the board is published in the medical journals.

Permission to appear before the board is obtained by letter to the adjutant general of the army, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character, and habits.

An applicant for appointment in the Medical Corps of the army must be between twenty-two and thirty years of age, a citizen of the United States, and a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, in evidence of which his diploma will be submitted to the board at the time of his preliminary

examination.

Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are essential, and an applicant will be expected to present evidence that he has had at least one year's hospital experience or the equivalent of this in practice.

The examination will consist of two parts—a preliminary examination and a final, or qualifying, examination, as hereinafter described, with a course of instruction at the Army Medical School intervening.

Preliminary examination will be required as follows:—

(a) Physical. The physical examination must be thorough. Candidates who fall below 65 inches in height will be rejected. Each candidate is also required to certify that he labors under no physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required. Errors of refraction, if vision is not below 20/40 in either eye, are not causes for rejection, provided they are not accompanied by ocular disease and are entirely corrected by appropriate glasses.

(b) Written examination on the following subjects: Mathematics (arithmetic, algebra and plane geometry), geography, history (especially of the United States), general literature, Latin grammar, and the reading of easy Latin prose. English grammar, orthography, and composition will be determined from the applicant's examination papers.

This examination may be omitted in the case of applicants holding diplomas or certificates from reputable literary or scientific colleges, normal schools, or high schools, or of graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

factory to the faculty of the Army Medical School.

(c) Written examination in the following subjets: Anatomy, physiology and histology, chemistry and physics, materia medica and therapeutics, surgery, practice of medicine, obstetrics, and gynæcology.

The preliminary examinations will be conducted by boards of medical officers at the larger military stations in the United States, the questions in the several subjects being sent from this office. Formal invitations will be extended to eligible applicants to appear at the most convenient points at which boards are convened and a date fixed for such appearance, which will be uniform throughout the country. No allowances can be made for the expenses of applicants undergoing preliminary examinations.

Applicants who attain a general average of not less than 80 per cent, in the preliminary examinations will be appointed to the Medical Reserve Corps with the rank of first lieutenant and ordered to the Army Medical School, Washington, D. C., for instruction as candidates for admission to the Medical Corps of the army. If, however, a greater number of applicants attain the required average than can be accommodated at the school, the requisite number will be selected according to relative standing in the examination. An applicant thus selected will, before entering the school, be required to make an agreement to accept a commission in the Medical Corps if found qualified in the final examination, and that he will serve at least five years thereafter, unless sooner discharged. Candidates undergoing instruction at the Army Medical

School will receive the pay and allowances of first lieutenants, including travel pay from their homes to Washington.

An applicant failing in one preliminary examination may be allowed another after the expiration of one year, but not a third; withdrawal from examination during its progress, except because of sickness, will be deemed a failure.

The course of instruction at the Army Medical School will be of eight months' duration, commencing on the first of October next succeeding the pre-liminary examination; it will consist of lectures and practical work in such subjects as are peculiarly appropriate to the duties which a medical officer of the army is ordinarily called upon to perform. During this course of instruction the candidates will be held under military discipline, and character, habits, and general deportment closely observed; if for any reason a candidate should be deemed undesirable, he may at any time, on the reommendation of the surgeon general, be honorably discharged by the President.

The final examination shall comprise the subjects taught in the school, namely: Duties of medical officers, Medical Department administration and customs of the service, military hygiene, clinical microscopy and bacteriology, military surgery, military and tropical medicine, sanitary chemistry, Hospital Corps drill, operative surgery, ophthalmology and optometry, and x ray work. It will be preceded by a thorough physical examination.

Candidates who, in their final examination, obtain a general average of 80 per cent. and upward shall be given certificates of graduation at the school, and those whose aptitude, as determined by the faculty, is deemed satisfactory and who, in addition to their final examination, pass a successful clinical examination, will be selected for commission in the Medical Corps. Candidates professing a knowledge of ancient or modern languages, higher mathematics, or scientific branches, other than medical, may be given a special examination therein.

The relative standing of the candidates thus selected for commission will be determined by the total number of points obtained in the professional subjects of the preliminary examination as well as in the final, clinical, and special examinations, and for antitude

Candidates who fail to receive commissions because of lack of vacancies in the Medical Corps at the time of graduation may receive them in the order of their standing as vacancies occur before the graduation of the next class. The remaining qualified candidates, if any, will be preferred for selection for volunteer commissions and for assignment on active duty in the Medical Reserve Corps.

Any candidate who, at his final examination, fails to qualify mentally shall not be entitled to a reexamination. Any candidate who qualifies mentally, but fails physically, shall, upon the recommendation of the surgeon general of the army, be given an opportunity to be reexamined physically with the next class, and if then found qualified may be commissioned without further mental examination, his standing in the class being determined by the aggregate of the marks obtained in the examinations already passed by him.

The act approved April 23, 1908, gives an increase in the corps of six colonels, twelve lieutenant colonels, forty-five majors, and sixty captains or first lieutenants. The increase in the higher grades insures promotion at a reasonable rate all through an officer's military career. The first advancement to the grade of captain takes place after three years instead of five, as heretofore, and this rapid promotion, together with the liberal pay now given all officers of the army, offers such manifest advantages to young physicians that the very best and most representative graduates of our medical schools should be attracted thereby. As accepted candidates for the Medical Corps are appointed first lieutenants of the Medical Reserve Corps during their service and instruction at the Army Medical School, there is no delay in receiving the pay of lieutenant, and no final loss of relative rank in the corps to those who successfully pass through the school, as no appointments are made to the Medical Corps except from the successive graduating classes from the school.

The period of instruction at the school, although an anxious time for the candidate, is looked back upon by the graduates as a most pleasant and profitable part of their service. The time of all students is fully occupied, but those who work steadily and faithfully and are well grounded in medicine need

not fear failure at the end.

The large number of vacancies created by recent legislation makes it certain that all successful candidates will be recommended for commission for several years to come.

It will be to the advantage of the candidate to pass the required examination and secure a com-

mission at as early a date as possible.

Applications for permission to appear for examination, prepared in accordance with requirements before mentioned, should be sent to the adjutant general of the army, and when completed will be filed until the next succeeding preliminary examination shall have been decided upon, when formal invitations to appear before a board will be issued. Applicants are advised to file the necessary papers as early as practicable, in order that the places of examination may be arranged most conveniently to applicants, due regard being had to the interests and necessities of the service.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending June 26, 1908 Smallhor-United States

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| Places. | Date. Cases. De | a1 |
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| Germany—General | May | 0.16 | 32 | |
| Great Britain—London | May | 23-30 | 1 | |
| Great Britain-Southampton | . May | 22-30 | 2 | |
| India-Bomlay | . May | 12-19 | 41 | |
| India—Calcutta | .May | 2-9 | 16 | |
| Italy-General | .May | 22-31 | 16 | |
| Italy—Naples | . May | 23-30 | 2 | |
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| Peru—Lima Portugal—Lisbon Russia—Moscow Russia—Moscow Russia—Gdessa Russia—Riga Russia—St. Petersburg Russia—Warsaw | May May May May May May April | 20-27. 9-30. 16-23. 16-23. 16-30. 9-16. 18-25. | 10 29 3 9 52 | 12 10 |
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Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and noncommissioned officers of the United States Public Health and Marine Hospital Service for the seven days ending June 24, 1908:

Berry, T. D., Passed Assistant Surgeon. Placed on waiting orders, from June 1, 1008.

CLARK, E. S., Assistant Surgeon. Granted leave of absence for ten days, from June 11, 1908.

GARDNER, C. H., Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Wilmington, N. C., assuming command of the service

Wilmington, N. C., assuming comments at that port.

LAVINDER, C. H., Passed Assistant Surgeon. Relieved from duty at Wilmington, N. C., and directed to proceed to Stapleton, N. Y., reporting to the medical officer in command, for duty and assignment to quarters.

MANNING, H. M., Assistant Surgeon. Directed to report to the chairman of a board of examiners at the bureau, Washington, D. C., July 6, 1908, for the purpose of determining his fitness for promotion to the grade of termining his fitness for promotion to the grade of passed assistant surgeon; granted leave of absence for

Seven days.

Mason, M. R., Pharmacist. Granted leave of absence for twenty-eight days, from July 15, 1908.

RUSH, J. O., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from July 1, 1908.

STODDARD, C. S., Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 27, 1908.

WATERS, M. H., Pharmacist. Granted leave of absence for thirty days from July 1, 1908.

for thirty days, from July 1, 1908.

White, M. J., Passed Assistant Surgeon. Granted extension of leave of absence for fifteen days, from July I, 1908.

WILLIAMS, L. L., Surgeon. Granted leave of absence for one month, from July 15, 1908.

Board Convened.

A board of medical officers was convened to meet at Seattle, Wash., for the purpose of examining alien immigrants. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon F. R. Underwood, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending June 27, 1908:

GRISSINGER, J. W., Captain. Leave of absence extended to

July 24, 1908.
GRUBB, R. B. Captain. Left Fort McIntosh, Tex., for Leon Springs, Tex.
HARRIS, H. S. T., Major. Leave of absence further ex-

tended one month.

tended one month.

HEYSINGER, J. D., Captain. Ordered from Key West Barracks, Fla., to Chickamauga Park, Ga., for duty.

LA GARDE, L. A., Lieutenant Colonel. Assigned to duty as attending surgeon, Denver, Col., in addition to duties as chief surgeon, Department Colorado.

LEWIS, W. F., Major. Left Fort Sill, Okla., with troops for Leon Springs, Tex.

Morris, S. J., Captain. Granted leave of absence for two months, to take effect about August 15th.

REYNOLDS, C. R., Captain. Ordered to duty as commanding officer of Company C, H. C., Army General Hospital, Washington Barracks, D. C.

WICKLINE, W. A., Captain. Left Army General Hospital, San Francisco, Cal., with one half of Company B, H. C., for duty at Leon Springs, Tex.

H. C., for duty at Leon Springs, Tex.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the sock and a June 27, 1008.

ALLEN, D. G., Assistant Surgeon. Ordered to the naval medical school, Washington, D. C. BLACKWELL, E. M., Passed Assistant Surgeon. Ordered to the Naval Academy, Annapolis, Md. Bogan, F. M., Passed Assistant Surgeon. Detached from the naval recruiting station, Minneapolis, Minn., and or-

dered to the Wisconsin.

Brown, H. L., Passed Assistant Surgeon. Detached from the naval station, Cavite, P. I., and ordered to the

CLARK, G. F., Assistant Surgeon. Ordered to the

ENGLAND, S., Pharmacist, retired. Detached from the navy yard, Mare Island, Cal.
KERR, W. M., Assistant Surgeon. Ordered to the Naval Hospital, New York.
LANDO, M. E., Assistant Surgeon. Ordered to the naval

recruiting station, Minneapolis, Minn.

McClurg, W. A., Medical Director. To be placed on the retired list, September 1, 1908, upon his own application, with completion of thirty years' service, in accordance with a provision of the naval appropriation

act of May 13, 1908. RANDALL, J. A., Passed Assistant Surgeon. Detached from

the Denver and ordered to the Rainbow.
RODMAN, S. S., Passed Assistant Surgeon. Detached from the Rainbow and ordered home.

the Rambow and ordered home.

SMITH, C. W., Assistant Surgeon. Ordered to the Naval Hospital, Portsmouth, N. H., and to additional duty at the naval prison at that yard.

STALNAKER, P. R., Assistant Surgeon. Ordered home and granted leave for two months.

TAYLOR, J. L., Assistant Surgeon. Ordered to the Naval Hospital, New Fort Lyon, Col.

TRIBLE: G. B., Assistant Surgeon. Detached from the Naval Hospital Nava Land Col. and ordered to the

Naval Hospital, Mare Island, Cal., and ordered to the

WHELER, W. M., Surgeon. (Orders issued by Commander, Third Squadron, Pacific Fleet.) Detached from the naval station, Cavite, P. I., and ordered home.

Births, Marriages, and Deaths.

Born.

Purnell.—In Fort Mackenzie, Wyoming, on Saturday, June 20th, to Dr. Harry S. Purnell, United States Army, and Mrs. Purnell, a son.

Married.

BARROWS—ROBERTSON.—In Denver, Colorado, on Wednesday, June 17th, Dr. Frank Barrows and Dr. Bessie B. Robertson.

CHILES—HOWARD.—In Pulaski, Virginia, on Wednesday, June 17th, Dr. Joseph Haskell ('hiles and Miss Ida Miller

FREEMAN-MARKS-In Louisville, Kentucky, on Wednesday, June 17th, Dr. John A. Freeman, of Beard, and Miss Edna Marks.

HAGEN—CRANDALL.—In Troy, New York, on Thursday, June 18th, Dr. Joseph J. Hagen and Miss Leona Crandall. MULHOLLAND—DODIN.—In New York, on Tuesday, June 16th, Dr. Joseph A. Mulholland and Miss Josephine Dodin. Norris—Horsey.—In Crisfield, Maryland, on Wedness Level 18th, Dr. Description

day, June 24th, Dr. Rastus Ransom Norris, of Baltimore, and Miss Lillian Horsey.

ROSENKRANZ-HAYMES.-In Philadelphia, on Wednesday, June 17th, Dr. Otto H. G. Rosenkranz and Miss Inez

SHOEMAKER—GILMAN.—In New York, on Thursday, June 4th, Dr. Harlan Shoemaker, of Philadelphia, and Miss

Grace Clyde Gilman, of Redlands, California, Strong—McMillan,—In New York, on Wednesday, June 17th, Dr. Cyrus Strong and Mrs. Helen Frisbie Mc-

VAN KIRK—JORDAN.—In New York on Wednesday, June 24th, Dr. Harry Hill Van Kirk, United States Army, and Miss Henrietta Clark Jordan.

Weber—Baker.—In Hyattsville, Maryland, on Saturday, June 20th, Dr. Frederick Clarence Weber, of Columbus, Ohio, and Miss Alice Louise Baker.

Donohue.—In Washington, District of Columbia, on Wednesday, June 24th. Dr. Florence Donohue.

Martin.—In Des Moines, Iowa, on Thursday, May 28th,

MARTIN.—In Des Moines, Jowa, on Thursday, May 2011, Dr. L. B. Martin, aged seventy-six years.

MILLERICK.—In Stoncham, Massachusetts, on Thursday, June 18th, Dr. Daniel E. Millerick, aged fifty-two years.

NEVILLE.—In Brooklyn, New York, on Monday, June 22d, Dr. Michael J. Neville, aged forty-nine years.

PRESTON.—In Baltimore, on Wednesday, June 17th, Dr.

George J. Preston, aged fifty years.
PURDY.—In Brooklyn, on Saturday, June 20th, Dr. James

Purdy, aged seventy-six years. REILLY.—In West Plains, Missouri, on June 17th, Dr. REILLY.

J. F. Reilly.

VAN DE VEER.—In Louisville, Kentucky, on Thursday,
June 18th, Dr. John G. Van De Veer.

Warrs.—In New York, on Monday, June 8th, Dr. Robert

Watts, Jr., aged forty-two years.

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NEW YORK, JULY 11, 1908.

WHOLE NO. 1545.

Original Communications.

A REVIEW OF THE COURSE IN OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA.

Being the Final Lecture to the Graduating Class.

By Barton Cooke Hirst, M. D., Philadelphia.

It is difficult to review in an hour what we have learned in two years, but I can sketch an outline that will refresh your memory. We began with the diagnosis of pregnancy; its difficulties and the liability to serious error without a systematic, methodical examination of the patient. An ovarian cyst and a fibroid tumor were operated on before the class, the opportunity being taken to illustrate the differential diagnosis between the commonest pathological abdominal tumors and by far the commonest physiological tumor, pregnancy.

Next we took up the management of normal

pregnancy.

In a course designed to be as systematic as our clinical material permits, we next presented examples of the commonest complications of pregnancy, especially the two toxemias and the premature interruption of pregnancy. We learned that there are two toxemias of pregnancy, that of the first half and that of the second half, the former characterized by vomiting and ptyalism; a strong neurotic element; low blood pressure; possibly degeneration of the liver; but no functional or organic disease of the kidneys; and only such anomalies in the urine as can be found in any case of starvation and excessive vomiting-namely, a disarrangement of nitrogen partition and concentration. Death, if the disease is fatal, comes only after days of progressive exhaustion. The toxemia of the latter half is characterized by high blood pressure; both functional and organic disease of the kidney; albumin, casts and blood in the urine; secondary degeneration of the liver and all the viscera due to multiple hæmorrhages; convulsions; coma; cedema of the brain and lungs, with a fatal issue or recovery as a rule within forty-eight hours,-obviously two distinct diseases. We indulged in some speculation-it can be nothing more at presentabout the ætiology of these two diseases, believing that the first was a syncytial poisoning of the maternal organism, and that the second was due to toxines from feetal metabolism. Numerous demonstrations were given of the treatment of the toxæmia of late pregnancy by eliminative and sedative remedies, and measures to reduce the blood pressure. One demonstration was given to the class of the ultimate treatment of toxemia of early pregnancy—the induction of abortion by dilating the cervix, crushing the ovum, removing a portion of it, packing the uterus, and evactuating it on the following day.

The treatment of incomplete abortion by the instrumental evacuation of the uterus was illustrated several times, and you were warned of the danger of perforating the uterus in this minor and common operation. After exhibiting some examples of the rarer complications of pregnancy we passed to the

management of normal labor.

Next came in natural order the care of the puerperium. As an essential item in the management of a puerpera we insisted that three examinations should be made: One in the first week to detect lacerations of the birth canal; another at the end of three weeks to learn the position of the uterus; and the third at the end of six weeks-the conclusion of puerperal convalescence-to determine the condition of the vulvar orifice, the pelvic floor, and the anterior vaginal wall; lacerations, erosions and eversions of the cervix; the involution of the uterus; its position; the condition of the appendages and broad ligaments; the abdominal walls, and the appendix; the position of the kidneys; and the condition of the coccyx. Numerous cases of complicated and obstructed labors have been exhibited to this class; post partum hæmorrhage requiring an intrauterine pack; placenta prævia requiring an enormous vaginal tampon temporarily and, when everything is ready for it, podalic version, or possibly, in exceptionally favorable cases of cephalic presentations, the application of forceps. Premature detachment of the placenta, concealed hæmorrhage, and the evacuation of the uterus demanded by it, and abdominal sections for cases of ruptured uterus.

You have been shown the commonest types of contracted pelves, the simple flat, the rachitic, and the justo minor; and the methods of diagnosticating them by pelvimetry. Also the methods of comparative ante partum feetometry; that is, the estimation of the relative size of feetal head and maternal pelvis

before birth.

Every kind of obstetrical operation required for obstructed labor has, I think, been witnessed by this class. Numerous inductions of labor by instrumental dilatation, bougies and bags: many forceps operations; version; pubiotomy. Cæsarean section; craniotomy; section of the clavicle, decapitation; have all been exhibited. You have had the opportunity to observe the operative and aseptic tech-

nique, to learn the indications for the operations, the precautions necessary, and in some instances the difficulties occasionally encountered.

We have been able to illustrate the various infections of the puerpera, many examples of which

are referred to the hospital.

You have seen numerous cases of mastitis, and have become familiar with the best operative technique for mammary abscess; namely, numerous small incisions which do not subsequently disfigure the breast and extensive counter drainage; the new treatment by Bier's vacuum apparatus has been given a trial, but the results have not been so good as are obtained by our own method of treatment. In each instance in which the local hyperæmia by vacuum was tried, we were obliged ultimately to resort to multiple incisions and counter drainage.

The infection of the genital tract has engaged our attention off and on during both years. The differential diagnosis between the fever of streptococcic, staphylococcic, gonococcic, or other wound infection and the accidental febrile complications of the puerperium has been studied in many cases. have learned the value of the bacteriological examination of the blood and of the lochia, the leucocyte count, the character of the fever, and of the pulse; the importance of the physical examination by abdominal palpation, combined vaginal and abdominal examination, and the inspection of the genital tract, in the diagnosis of puerperal sepsis. You have also seen the gratifying success of the treatment of puerperal infection in a larger proportion of cases than would seem possible in view of the dangerous character of the disease, by stimulation and support; by injection of salt solution to stimulate elimination; by leucocytoccic action of protonuclein; by surgical intervention when indicated; possibly by streptococcic vaccines; certainly in some cases by antistreptococcic serum, and by the instrumental evacuation and the disinfection of the uterine cavity. Let me dwell a moment on the There is an easily underlast statement. stood prejudice in the profession against what is called curettage of the puerperal uterus for infection, due to the fact that the ill informed and unskillful physician has too often perforated the soft wall of the uterus after childbirth or has broken through the barrier of granulation cells under the infected endometrium with his curette, thus converting a localized into a general infection. But we have learned that curettage is an incorrect term to use in describing the instrumental exploration of the uterine cavity in cases of infection. The curette, if used at all, is a dull curette employed with the utmost gentleness; as a matter of fact, the curette forceps of Emmett is the better instrument, and one that can do no harm if skillfully employed. On the contrary, the exploration of the uterine cavity, the removal of necrotic decidua, the irrigation of the uterus with alcohol, water, and tincture of iodine or with formalin, glycerin, and water is often essential to success.

Finally in concluding our review of the conditions demonstrated during the third year, I must remind you of cases of puerperal insanity, unusual sequelæ of eclampsia, such as gangrene of the lungs; an extreme case of chorea, in pregnancy, end-

ing fatally; pyelitis gravidarum with demonstrations of cystoscopy and catherization of the ureters; so called inspiration pneumonia in the new born; appendicitis in pregnancy and puerperal hæmorrhages, all of which have been shown you. The last named, you recollect, usually indicates the retention of secundines in the uterus, but there are other causes, among them a possibility of chorionepithelioma, which must not be forgotten.

I have been obliged to trust to your collateral reading for the information you should possess about the mechanism of labor, including anomalies of presentation and position with their treatment, which cannot be demonstrated clinically, but which must be understood to intelligently supervise normal labor or to successfully perform the obstetrical operations. In fact if you have not covered the whole subject of obstetrics at least once in some textbook my course is a comparative failure.

In the studies of the fourth year, I have endeavored to fulfill a part of my duty to you which is too often neglected in the obstetrical depart-

ments of American medical schools.

Until the present generation the obstetrical departments of the best medical schools of this country were ridiculously ill equipped. There was not a bed nor a patient; the incumbent of the chair had no hospital training or facilities, so that he was incompetent to teach a most important part of his subject. It is universally acknowledged that obstetrics includes not only the act of delivery, but all the consequences and complications of the child bearing act at all periods, most of which demand surgical treatment. This, I say, is generally admitted; and in the great medical schools of Europe, well equipped with adequate hospital facilities, the professor of obstetrics has taught his subject in its entirety. If you consider what this means you will see the reason why in all the best medical schools of Europe, that is to say, the medical schools of the most highly civilized portions of the world, the professor of obstetrics has necessarily been charged with the treatment of the diseases of women, for if you subtract the consequences and complications of the child bearing act from the diseases of women there is nothing left. Here, on the contrary, it was necessary for a time to create a special department covering this branch of obstetrics, because the incumbent of that chair had neither the training nor the facilities to do his whole duty by the subject. Recently this discreditable condition of affairs has been remedied. In the last few years it has been possible to raise this department in our medical school to a parity with similar departments in the best medical schools in the world, with the single exception that we have not yet accumulated a sufficient amount of clinical material, although the two thousand women a year under my control, available for clinical teaching, an imposing total for America, is respectable anywhere, and every year witnesses a gratifying increase.

Now, therefore, I am at last able to present my subject to you as it should be and is presented in the best medical centres. In justice to my subject, in justice to you, and in justice to myself I must do this. But in doing so I necessarily duplicate a certain amount of the teaching of my colleague, the

professor of gynæcology, just as the three professors of surgery and the three professors of medicine necessarily duplicate to a certain extent one another's teaching. This, however, is no disadvantage to you. On the contrary, if there should be differences of opinion and different methods it is distinctly to your advantage to hear and see them. It shows the same subject from different points of view. It develops the critical faculty in you which must be exercised during the whole of your professional life. Moreover, in this clinic you may see better illustrated than it can be elsewhere the immediate relationship between the child bearing process and the numerous ills peculiar to womankind dependent upon it. Most important of all, we are in a position here to demonstrate to you the preventive treatment of the vast majority of the diseases of women, and it is in this direction that all medical progress tends.

Let me now recapitulate what we have learned

this year.

You have had the course in obstetrical operations on the manikin; the independent clinical training in the South Eastern Dispensary service; the ward classes, and during the last half of the year, the clinics. In the ward classes and clinics, I have followed a plan which is the result of some experimentation and considerable reflection. The keynote of it is the restoration to the normal of the woman after childbirth and the best surgical treatment for the prevention of conditions which are quite unnecessarily invaliding a large proportion of our adult female population.

The commonest diseases of women are the results of lacerations of the birth canal. We have taught you—or, better, we have given you the opportunity to learn for yourselves—how to recognize the existence and the extent of any of them anywhere. Not by a cursory examination directly after child-birth, with the tissues swollen, bruised, distorted, and stretched so that no one could possibly make a correct diagnosis, but a few days after labor, with the patient arranged in the position necessary for any accurate gynaeological diagnosis, with a good

light and the aid of a speculum.

To any reasonable mind it is plain that this plan is better than the old one and must supersede it. You remember the logical order of this examination: The inspection of the vulva to detect injury of the junction of the bulbocavernosus and of the transversus perinei muscles, by the gaping of the vulvar orifice; the test of the integrity or injury of the levator and muscles, (1) by sinking the forefinger, inserted to the second joint, first in one posterior sulcus and then in the other; (2) by sweeping the forefinger from one descending ramus of the pubis, around the curve of the muscle, to the other ramus; (3) by putting both forefingers at once in the posterior sulci; and (4) by palpating the whole breadth of the muscle in each sulcus between the forefinger and the thumb, one externally on the labium, the other internally. If there is a complete tear, through the sphincter, it is usually recognized at a glance, with the patient in the dorsal gynæcological position. If there is any doubt about it the forefinger in the rectum and the thumb in the vagina determine the thickness of tissues between and the rupture of the ring of the sphincter muscle. You recollect the method of diagnosticating injuries of the anterior wall in its lower third by pressing the palmar surface of the forefinger upward and outward in the anterior sulci, where the muscle of the urogenital trigonum is often ruptured. You recall the surest way to recognize injuries, erosions, and eversions of the cervix, not by palpation, but by inspection, preferably through a bivalve speculum.

Next for the lessons we have learned in the surgical technique of the repair of injuries in each of these localities: In the sulci of the posterior wall the closest apposition of the edges of the torn levator ani muscle is secured by the double tier suture of chromicized gut; the bulbocavernosus and the transversus perinei muscles are rejoined by a deep insertion of a curved needle threaded with silk worm gut.

If for a special reason—prolapsus uteri—in a woman not expected to bear any more children, it is desired to narrow the vagina and build up a pelvic floor of unusual strength, the whole posterior third of the vaginal wall is denuded and the raw surfaces joined in the middle line—a procedure known as "Hegar's operation."

In the repair of a complete tear, if you bear in mind certain cardinal principles, you will have uniform success. Otherwise you must expect the fifty per cent. of failures to which even some specialists confess. Stretch the sphincter; denude so that the sphincter pits are exposed; dig a strong tenaculum to the bottom of each sphincter pit and bring the end of the muscle to the surface in plain sight; join the ends firmly with at least two unabsorbable sutures; keep the bowels fluid for three weeks after the operation and soft for three months.

In the repair of the anterior wall we have a more complicated problem, but a problem that is solved. We had first to learn what happened to the anterior vaginal wall in labor that weakened its support, and it took us an unconscionable time to find it out, but thanks to the anatomical investigations of Waldeyer and careful clinical observations by numbers of us practical workers, we know now that three distinct kinds of injury are inflicted upon the anterior vaginal wall and the subjacent tissues which support it, by the passage of the fœtal head through the birth canal: One is an elongation of the longitudinal ligaments, principally the uterovesical; the second is a lateral separation of the fascial plates under the vaginal wall, analogous to the separation of the recti muscles in the abdominal wall; and the third is a laceration of the muscle and fascia of the urogenital trigonum in the anterior vaginal sulci, the only support possessed by the lower third of the anterior vaginal wall. It is possible to repair a part of this damage in the early puerperium, by uniting the urogenital trigonum muscle, and possibly by bringing together the outer thicker portions of the fascial plates. If this should prove insufficient to prevent a cystocele, or if we see a patient in whom a cystocele has developed, because there has been no attempt to prevent it, we have recently perfected

an operative technique based on correct anatomical and clinical knowledge, which as surely and permanently cures a cystocele as Emmet's or Hegar's operations cure a rectocele; namely, the severance of the uterovesical ligament, the exposure and junction of the fascial plates, and the repair of the urogenital trigonum muscle. This procedure must replace the old oval and circular denudations with a puckering stitch—mere empirical devices, with a huge percentage of failures.

In the cervix we find only two injuries: An annuar detachment and longitudinal lacerations. The first is a spontaneous amputation and requires no further surgical treatment, unless it is incomplete, when it may be necessary to amputate a tab of cervical tissue left behind. The second, no matter how extensive or numerous, may be repaired by the appropriate plastic operation at any time after the fifth day of the puerperium. Before that time there is too much danger of infection of the endometrium.

The second in frequency among the pathological consequences of the child bearing process, the second in frequency among the diseases of women, is retrodisplacement of the uterus. Lacerations of the birth canal and backward displacements of the uterus constitute in point of numbers three fifths of all the diseases of women. We have learned the necessity of a careful pelvic examination at three weeks and again at six weeks after childbirth, to determine the position of the uterus. If a retroflexion or version is discovered, you recall, no doubt, the scheme of treatment advised; reposition and the knee chest posture twice a day until the sixth week; in the wealthy, leisure classes, if the displacement persists in spite of postural treatment, a pessary, Swedish exercises, and massage for eight weeks. If the displacement still persists, the choice between a pessary indefinitely and radical cure by operation, the physician naturally preferring and advising the latter course. In the poorer, working classes nothing but an operation need be considered. Of the numerous (more than fifty) operations for these displacements, my personal opinion is that there are only four worth attempting: The Alexander operation, as modified by Edebohls; ventrosuspension; Mayo's modification of the Gilliam operation; and the operation proposed independently and coincidently by Webster and Baldy. You have seen each of these operations in this clinic and have heard them described. You must decide which one of them appeals most to your reason. If my opinion of their relative merits is of any value to you, I unhesitatingly express a preference for shortening the round ligaments in the inguinal canals; but the displacement must be uncomplicated, which is not often the case. Ventrosuspension has been the most available operation in my practice, though it is unnatural and unanatomical, and I hope will be superseded by something better. The Gilliam and Mayo operations I am not so well pleased with after a trial of two or three years. Baldy's and Webster's operation looks promising, but I am only beginning to try it in corpore vili-that is, on my ward patients; I have confidence in the judgment of its authors. I like it as far as I have personal experience

with it, and Dr. Baldy, who has utilized it for four years, assures me the results are permanent.

Next in importance among the pathological sequelæ of childbirth, to lacerations of the birth canal and retrodisplacements of the uterus, is septic infection. We have already referred to this subject. It only remains to remind you of the indications for and the surgical technique of the operative treatment. If physical signs of inflammation, in exudate, enlargement and fixation of the pelvic organs accompany the other symptoms of infection, abdominal or vaginal section is indicated; not otherwise. If the abdomen is opened the following principles should be observed; remove only infected and necrotic structures; tie the bloodvessels separately; let the broad ligaments gape to drain the pelvic connection tissue; put a curved glass drainage tube into Douglass's pouch, from above, pack the whole pelvic cavity with gauze with the patient in the Trendelenburg posture and the rest of the abdominal cavity walled off with gauze pads; remove the pads; close the wound carefully and seal it; suck out the glass tube once a day for four or five days, with every aseptic precaution; remove it; withdraw the gauze gradually, beginning about the fifth or sixth day, and getting it all out on the tenth or eleventh. You have seen a number of women saved by this technique in spite of a most discouraging pelvic condition. You must take my word for it that no other plan will give as good results. I have tried many other methods in the past and failed. Many cases of infectious salpingitis of less severity than the acute streptococcic variety have been treated by salpingectomy without drainage. Several interesting cases have been presented to you illustrating the differential diagnosis between ectopic gestation, cornual gestation, and inflammations of the uterine appendages. One case admitted to my service was ensanguine. The blood was flowing steadily from an erosion in the ectopic gestation sac near the uterine cornu. The woman's life was saved by an immediate operation. An hour or two more would have given her ample time to bleed to death. A commentary on the proposition to wait for reaction in these cases before operating!

Finally, the rarer complications of the puerperium requiring surgical treatment are diastasis of the recti muscles, coccygodynia, and floating kidney. Separation of the recti muscles is rare if an abdominal binder is carefully adjusted by a competent nurse and tightened progressively with the involution of the uterus. Its treatment when encountered is a binder, massage, electricity, and gymnastic exercises for some weeks, if the patient can afford it. A radical cure is always possible by Webster's operation, which you have seen. Coccygodynia should be allowed six months for a spontaneous recovery, unguentum iodi and petrolatum being applied from time to time over the coccyx. Coccygectomy is indicated if the disease persists and demands relief. You have seen this operation also in the clinic.

Floating kidney as a sequel of childbirth is usually accompanied by ptosis of the other abdominal viscera due to a relaxed abdominal wall. It requires the same palliative treatment as diastasis of the recti muscles. If it resists other treatment Edebohls's operative technique will cure it.

¹⁸²¹ SPRUCE STREET

A PLEA FOR MORE SANATORIA FOR THE CON-SUMPTIVE POOR IN ALL STAGES OF THE DISEASE.*

By S. Adolphus Knopf, M. D., New York.

Without depreciating the value of climate as a precious adjuvant in the treatment of tuberculosis, I state that the sanatorium treatment, also known as hygienic and dietetic treatment in special institutions and in many homes, is feasible in nearly all of our home climates; but, alas! not in all homes. Therefore, I wish to say that, while advocating the treatment at home for those who cannot or those who do not wish to enter an institution, I plead with all my heart and with all the earnestness I am capable of with you physicians and through you with your wealthy philanthropic friends or patients, and the legislators of our own and all the States of this great land, for the establishment of more State and municipal sanatoria for the treatment and care of the great number of consumptive poor in all stages of the disease who by reason of their unhygienic environments or extreme poverty cannot be treated at home.

In face of the indisputable fact that tuberculosis is a curable disease, it should be a matter of deep humiliation to our statesmen, municipal authorities, and philanthropists that there are at this moment thousands and thousands of our fellow citizens suffering from tuberculosis, many of them in the prime of life, and that they must continue to suffer and die not because their disease is incurable, but because there are no places to cure it.

It is my intention to embrace the opportunities offered to me as professor of phthisiotherapy of this great institution to appeal to the physicians coming to us from all over the United States, from hamlets, towns, and cities, to enlist every one as a crusader against the great white plague in their respective homes. I trust that the physicians having attended the lectures on phthisiotherapy at the Postgraduate Medical School and Hospital will all become apostles of the gospel of the prevention and curability of tuberculosis, and that they will forever bear in mind that the crusade is one against tuberculosis and not against the tuberculous, for we as physicians must never allow phthisiophobia to become the result of the antiphthisis campaign. On the contrary, we should forever preach and put in practice the principle that the honest, conscientious consumptive, taking care with his expectoration, is not a source of infection, and is as safe an individual to associate with as anybody else, and that he should be treated with the utmost kindness and consideration.

Those who as official authorities or private citizens oppose the establishment of sanatoria or special hospitals for consumptives must be convinced of their error. Show them the great educational value of a sanatorium for consumptives. Tell them that any patient who has been in a sanatorium, if even only for a few months, must of necessity on

account of the training he will have received become a hygienic factor in the community to which he may return, improved or cured. If this simple assurance does not suffice to convert them from their unjustified prejudice against the establishment of a tuberculosis institution, show them the statistics of this country and Europe, which prove that the mortality from tuberculosis among the inhabitants of villages or towns where sanatoria for the tuberculous are situated has always been considerably reduced after the establishment of those institutions. The cleanly and sanitary habits involuntarily imitated by the villagers have resulted in diminishing consumption in their own midst. Thus the well conducted and well equipped sanatorium for consumptives serves not only as an institution to cure, but also as an institution to prevent the spread of consumption. It can even be demonstrated that the prosperity of the community which harbors a sanatorium for the consumptive poor has always been improved thereby. By the cures accomplished in such a sanatorium, wealthy invalids are almost invariably attracted to the locality.

To prevent the spread of consumption by teaching practical and feasible hygiene, to overcome the prejudice against institutions for the treatment of the tuberculous and the prejudice against those who are afflicted with the disease, to cure when cure is possible, to do what we can to arrest the disease, prolong life and render comfortable when absolute cure seems impossible, to relieve the sufferings of the consumptive individual, be it mental, physical, or social, should be our only aim as true workers in the field of modern phthisiotherapy.

16 WEST NINETY-FIFTH STREET.

THE SIGNIFICANCE OF A BLOOD ANALYSIS IN APPENDICITIS.

Can We Depend upon the Leucocyte and Distinctive Polynuclear Counts as a Positive Indicator for or against Immediate Operation?

> By C. C. Sichel, M. D., New York.

Attending Surgeon, Washington Heights Hospital.

There is probably no subject on which more has been written than on when to operate in appendicitis, a subject of vital importance to the general practitioner as well as the surgeon; and yet it remains a much mooted question.

The solution of this question, I believe, lies in the province of the pathologist, the careful study of the blood. The writer of this communication, having found in every case of appendicitis a typical blood picture, makes a special plea to all those coming into frequent contact with cases of appendicitis to give the blood count a careful study. The diagnostic value of a leucocyte and polynuclear counts in this paper has been based on the study of some fifty odd cases.

Although there is much yet to be done in the study of the blood, when infection is present in the human body, and beside the fact that locality, virulency, and stage of infection are known to show widely divergent results in polynuclear and leuco-

^{*}The concluding remarks of Dr. Knopt's mangural address as professor of phthisiotherapy in the New York Postgraduate Medical School and Hospital. The address has for its title How to Adapt Sanatorium Methods to Treatment of Consumptives at Their Homes, and was delivered before the Clinical Society and matriculates of the sanath June 19, 1908

cyte counts, still, when an infection is present, and absorption starts in appendicitis, blood change will Furthermore, absorption in inevitably take place. this condition is the rule, and only in old cases with dense adhesions might there be an exception. say might advisedly, as even these cases show typical blood findings, for though the infection may be walled off from the peritonæum, it is not so thoroughly so from the circulation.

With the start of infection in appendicitis, the blood picture is similar to those seen in infections elsewhere, except that the counts are not always as

high as those in other localities.

Leucocytosis varies from 12,000 upwards, sometimes reaching 25,000 to 30,000. Polynuclear counts show eighty per cent. to above ninety per cent., usually in the neighborhood of eighty-three per cent. One or two per cent. eosinophiles are found early in the attack, but often disappear in later examinations to return when the source of infection is removed. In fact, the reappearance of the eosinophiles is a sign of improvement in the patient's condition. In reference to the latter, however, at least 400 or 500 cells should be counted.

It is not in the well developed cases of appendicitis, after perforation or abscess formation, where the physical signs of the patient make the picture clear to the physician, that blood examination will be of the most service. It is at the beginning of the case, or in those cases where the symptoms are masked, that blood analysis will positively indicate

or counterindicate operation.

It is in this class or state of appendicitis that often a marked absence of alarming symptoms will give the physician a sense of security, will induce him to believe that a mild enteritis or catarrhal condition There is no greater of the appendix is present. chance of error, often fatal error, in the whole gamut of ills to which the human body is heir.

How many cases are seen daily, where there is general abdominal pain, of greater or less severity, with tenderness in the right iliac fossa, with little or no other symptoms? And let me state here there are many of these cases with very little or no rigidity or tympanities, temperature no higher than 100° F., with leucocytes of over 15,000 and distinctive polynuclear counts above eighty-four per cent. It seems there should be more pronounced temperature, with fairly high blood counts, but, nevertheless, there often is not.

How many of these cases have we seen that in twenty-four hours result in abscess, perforation, peritonitis, and often death? These are the cases in which the blood findings will indicate immediate operation. These are the cases in which we need not wait to see whether there is on a second examination an increased leucocyte count or polynuclear percentage. With the first leucocytosis, and increase of the distinctive polynuclear percentage, operate.

I realize in placing this absolute diagnostic value to the blood picture in cases of appendicitis I shall meet no little opposition. However, in all my cases, the blood findings have been diagnostic, and this valuable aid to diagnosis has been a source of great satisfaction to me.

The following are a number of cases, particularly bearing on this subject, which the author wishes to report, as they diverge from the ordinary run of

Case I.—Mr. I. L.; nativity, Italy; age, twenty years. Previous history: For the past three months patient had had pains through the abdomen which increased in proportion with the patient's work

Present history: Pain became sharp and localized about McBurney's point on the day previous to being brought to the hospital. On admission, the temperature was 99.2° F., pulse 70, respiration 22. Abdomen not distended or tympanitic, and but slightly rigid over the right rectus, tender on pressure over McBurney's point; no nausea, no vomiting; bowels constipated. Blood count: Leucocytes, 21,000; distinctive solvanders girkty research received in the control of th

distinctive polynuclear, eighty per cent.; eosinophiles, one

Operation: Appendix distended and adherent to the pos-terior abdominal wall. There were two diverticulæ in the appendix, each containing an enterolith; appendix removed by circular cuff method, after carefully separating adhesions; no drainage. Patient made an uneventful recovery.

Case II.—Mr. J. C.; nativity, Italy; age, twenty-one

Previous history: Four days before admission pains started in the epigastric region, with nausea, vomiting, and constipation. Pain localized at McBurney's point. On admission, temperature was 100.6° F., pulse 100, respiration admission, temperature was 100.6° F., pulse 100, respiration 24. There was some tenderness at McBurney's point, with slight rigidity of the right rectus. Blood count: Leucocytes, 23,000; distinctive polynuclear count, eighty-one per

cent.; eosinophiles, one per cent.

Operation: Appendix found tightly adherent to the lateral abdominal wall, distended, and full of pus. were broken up, appendix removed by circular cuff method; abdomen drained. Patient made an uneventful recovery.

CASE III.-Master W. L.; nativity, United States; age,

fourteen years.

Previous history: Had had the ordinary diseases of childhood, with frequent attacks of gastroenteritis. Considerable pain in the abdomen for three or four days be-

fore admission.

On admission there was severe pain all over the ab-domen, with marked tenderness at McBurney's point. Bowels constipated. There was no distention, but moderate rigidity of the right rectus. Temperature was 101.1° F., pulse 112, respiration 24. Before operation, temperature fell to 90° F., pulse to 100, respiration to 23. Blood count: Leucocytes, 19,000; distinctive polynuclear count, eightytwo per cent.; eosinophiles absent.

Operation: Appendix was found running upwards and

backwards, the tip adherent to the posterior abdominal wall beneath the liver. The appendix was over seven inches in length, distended with pus, which was pointing at one or two places. Adhesions were fairly dense. It was removed by the circular cuff method, and the abdomen drained.

Patient made an uneventful recovery.

Attention is called to the fact of the general improvement of the symptoms in this case before the

operation.

All the other cases follow along similar lines, the diagnosis indicated by blood pictures being confirmed by operation. All cases that showed a leucocytosis and a polynuclear increase were operated on, without finding a single case in which there was a purely catarrhal condition. All interval cases or those not showing a leucocytosis, etc., which were operated on showed that no acute process was in progress.

The author of this communication strongly advocates operation as indicated by blood findings in all cases of appendicitis. When leucocytosis and polynuclear increase is present, operate at once. there is no increase in the counts watch the blood picture in repeated examinations and be guided by the findings plus the patient's general symptoms.

The author wishes to thank Dr. G. Reese Satterlee

for the blood work done in these cases. 50 WIST SIVENTY-SEVENTH STREET.

THE MANAGEMENT OF CHRONIC ENDOCAR-DITIS DURING THE STAGE OF COMPENSATION.*

By Sydney A. Stein, M. D., New York.

Profound interest has been manifested in the diagnosis, treatment, and prognosis of heart disease, and especially of valvular heart disease, by all prominent clinicians since the very earliest attempts at physical diagnosis, thus proving its eminent importance in the practice of medicine. No branch of medicine has been less affected by modern preventive medicine, bacteriology, and serum therapy, yet in the last twenty-five years an enormous amount of literature, of great value to the practising physician, on both the diagnosis and treatment, has been produced. With the bacteriology and other ætiological factors, it is not in the province of this paper to deal.

After all, what is compensation? Briefly, it is that state of the circulation in which a physical defect of the heart has been so corrected as to enable the heart to perform its functions normally. All

compensation is, of course, relative.

In the management of all cardiac diseases there are a few general and special considerations entering into every case. Alcohol is a chronic heart poison; its use should be prohibited or limited, unless specially indicated. Tobacco, tea, and coffee are milder poisons; their use should also be limited or interdicted. Hygiene and hygienic laws are of importance in health, but still more so in disease, and the same care and attention paid to fresh air and diet that we give in tuberculosis must be given in these cases; save with this difference, that cardiac disease is more apt to attack the robust and otherwise apparently strong than is tuberculosis. Therefore, we may have the obese cardiac. To reduce superfluous adipose tissue and thereby render breathing and heart's action easier if often extremely difficult. The fat renders such patients peculiarly liable to attacks of angina, and flesh reduction is safely accomplished only by the greatest care in diet, exercise, and drug treatment.

It is a matter of course that all complicating diseases be treated, but, as any disease or disturbance of function is liable to complicate cardiac trouble, I will content myself with mere mention that the digestive organs, the lungs, the kidneys, and all the emunctuories must be kept in the best possible condition. The nervous system is peculiarly liable to disturbances, the necessary shock of hearing that they are sufferers from an incurable disease, the dread of sudden death, which, among the laity, is believed to be so frequently an outcome, the disturbances arising from the malnutrition of the central nervous system, all tend to subject them, in a marked degree, to hysteria, neurasthenia, and mental instability, which occasionally leads up to in-

sanity.

Rest in the recumbent position, and sleep, are the only two means by which the work of the heart can be reduced physiologically to its natural minimum. It is, therefore, imperative that the period of rest, no matter what method of treatment is being pur-

sued, must be much longer than that which the normal individual requires. They should rest in bed nine hours out of the twenty-four, more if possible. Sleeplessness is due to an infinite variety of causes, yet may often be corrected by simple measures, e. g., if due to flatulence or gastric disturbance, by eating only the lightest and most digestible food at night; on the other hand, some are relieved by eating immediately before retiring a light meal of some sort, such as a cup of milk or chocolate, a glass of kumyss, or a scraped meat sandwich. Hydrotherapy here is of great assistance, both as a hypnotic and as a regulator of cardiovascular condi-The cold pack, full hot bath, the Nauheim baths with carbonic acid gas, can all be given to patients in their homes without the aid of extensive apparatus or trained intelligence. All that is requisite is a little explicitness in directions as to the temperature, length of time, and method of giving bath. Finally, we may be compelled to resort to drugs. Of these, codeine, in combination with one of the urea group of hypnotics, is most generally useful. The bromides may be of service, but must not be too long continued on account of the danger of upsetting the digestive organs and their generally depressing effect; the sodium and ammonium salts are preferable to the potassium as being somewhat less depressing. Chloral is well borne when compensation is good, and is very efficient, but the danger of the habit must be kept in view. trional veronal group will, however, in most instances, serve our purpose. As a last resort morphine may be required, and is, of course, especially efficient in cardiac disease.

Aside from the special and general considerations already mentioned, there remain two great factors in the treatment of chronic endocarditis. These are the heart itself, its special lesion and muscular condition, and second, the condition of the arteries. The arteries themselves, whether contracted or not, their tension, and the amount of blood pressure, are important elements both in prognosis and treatment. Blood pressure is rarely raised above the normal in uncomplicated heart disease, save in aortic insufficiency, in which there is frequently a marked rise above the normal during systole, with a rapid fall below the normal during diastole; and in some cases of hypertrophy. Yet the arteries, by their condition of contraction, may give rise to considerable additional work to the heart muscle. It is therefore a good rule that, as nearly all the cardiac stimulants act as vasoconstrictors, one of the vasodilators mentioned below be given in combination with them. Of these there are two groups, the iodides and the nitrites. The iodides, in addition to their dilating power, act also by decreasing the viscosity of the blood, and as absorbents of chronic inflammatory products, at the same time diminishing, or, at any rate, retarding, the arteriosclerotic processes, which so often complicate chronic endo-The principal iodides in general use are the sodium and potassium salts, and some of the newer proprietary drugs. They may be given almost continuously for long periods, the sodium salt preferably, and in cases of special idiosyncrasy one of the proprietaries may be substituted.

Of the more active vasodilators, amyl nitrite, ni-

[&]quot;Real before the Metropolitae Medica" Some

troglycerin, and sodium nitrite are the most efficacious. The first should only be used occasionally
when rapid action is necessary. When demanded,
its action is much enhanced by the subcutaneous
use of morphine. Nitroglycerin is also a powerful
dilator and stimulant. The latter action is rather
a drawback than an advantage in a compensated
case, when its use should never be long continued,
overstimulation leading to rapid heart action, and,
finally, to irregularity. For continued use the nitrites of sodium and potassium in small doses are
most valuable and least dangerous. I have prescribed them for a month at a time without any but
beneficial results.

The therapy of the heart itself falls naturally into two divisions. The first, and of least importance in the stage of compensation, is drug therapy; the second, treatment other than drugs, especially hydrotherapy and physical therapy. In regard to drugs, those directed to the heart muscle are either stimulant or sedative. Of the former, the least said the better. They are rarely useful and often harmful. There is no more pernicious practice than that which is still too prevalent of prescribing digitalis, strophanthus, convallaria, or strychnine in every case of chronic cardiac disease. Their long continuance is like perpetual goading to a horse. When the real time for their use arrives, like the blows. they have lost their effect. The other group of drugs, the cardiac sedatives, is of great value, and its usefulness very wide, and, I think, in many instances, somewhat neglected. The most important is opium and its derivatives. Since Albutt's classical essay in 1869 on the hypodermatic use of morphine in chronic endocarditis, the powerful stimulant and sedative action of small doses of morphine has been widely appreciated. But the great danger of habit in its constant use has made it important that for ordinary sedative action a less dangerous substitute should be at our command. This we have in codeine, the most useful single drug in the treatment of heart disease in the stage of compensation. It may be given for almost any length of time in small or large doses, and yet the patient not become addicted to it. I have given it almost steadily for two years to a diabetic, and then stopped suddenly without any evil effect. In heart cases I have given it for months at a time without the formation of a habit.

Lastly, we will speak of the mechanical treatment of compensated heart disease. In this I will include all treatment other than drugs - hydrotherapy, Nauheim baths combined with passive motion or massage, and exercises, varying from light calesthenics to the severer forms recommended by Oertel, with the purpose of maintaining compensation. With regard to the Nauheim baths, which are especially useful in hearts with weak muscle and beginning dilatation, I shall not go into details, as they have so recently been ably presented to the New York medical profession by the late Dr. Newton Hememan. His papers were followed by a lengthy discussion on the subject in all our Amertreatment acre explained in a paper written by a member of this society and discussed here.

The method of choice from amongst these me-

chanical means must be influenced by age, physical condition, and social status of the patient. At both extremes of age, naturally, the severer forms of exercise are excluded. Before the age of puberty there is nearly always present a strong tendency to rapid hypertrophy, and frequently, as rapid a degeneration of the hypertrophied muscle, making the prognosis bad in most of these cases, so that the physical activity and restlessness should be curbed rather than added to. At the other extreme, overexertion, being less likely to occur, and activities being naturally lessened, once compensation is established, the natural hygiene of old age will be that of the accompanying endocarditis, which is, as a matter of experience, very well borne.

In between these two extremes, we have, afflicted with chronic valvular troubles, individuals of every variety of physical status. Up to the present time, we have had comparatively little to guide us with regard to the variety, or, rather, the severity of exercise to which a well compensated heart muscle should be subjected, in order to retain what has been gained, in many instances, entirely by the ef-

forts of nature.

Modern instruments of precision, the manosphygmograph, the sphygmograph, and the orthodiagraph combined, have placed within our hands the means of testing the blood pressure and size of the heart during rest, and we can test, at any rate, with a fair degree of accuracy, the functional power of the heart. Every heart, normal or otherwise, on continued severe exertion, reaches a stage when compensation fails, and even, on extreme overexertion, death can take place in asystole. Functional tests are not only useful in diagnosis, but I have endeavored to use them as a means for testing the limits of exertion to which an individual with compensated valvular disease should be subjected.

For this purpose I have used the test proposed by Gräupner, of Nauheim, which is based upon the following phenomena: Given a normal heart, subject it to moderate exertion for a short period of time, and the result will be as follows: First, there is a rise in frequency of the pulse rate; coincidently there is a increased force, and, when measured, an increase of the blood pressure. If the exertion is continued, there is a further acceleration of the pulse rate, coincident with which there is a fall in blood pressure. If at this stage exertion is stopped there is a gradual retardation of the pulse rate, and gradual increase in the blood pressure, which increase is maintained and continues to even beyond the normal after the pulse has returned to its normal rate. This increase does not ensue on extreme overexertion or in functionally weak hearts, or in any heart strained beyond its natural powers. We know that a dilated heart muscle will respond to physical stimulation, as in the passive motion or massage in the Nauheim treatment, so that, if we take a patient with compensated heart disease and subject him to a series of tests of increasing severity, we can accurately determine the grade of exercise to which his heart will respond by a normal increase in blood pressure. Such exercise can only be useful in maintaining the nutrition of the heart. I think we have by this method a test whereby we can make a selection on a little more than empiric

grounds of the form of exercise which we should give the individual. In this way we can determine whether we can employ gentle massage and passive motion in the borderline cases just on the verge of failing compensation, or go on up to graduated hill climbing or calesthenics in those cases which have good compensation and good heart muscle with good reserve force. In testing the functional power of the heart by blood pressure measurements the usual clinical methods of the effects of exercise, on pulse, breathing, and the ratio of pulse and breathing, and especially the effect on the area of cardiac dulness, are of paramount importance, of recognized value, and must not be neglected. No instruments can replace clinical acumen and medical sense, yet these instruments are aids which help us in eliminating certain errors to which the tactile sense, sight, and hearing of all human beings are liable, and it is the sum of the findings of ordinary clinical methods plus instrumental methods which will add to our accuracy, both in our diagnosis and, what is more important to the patient, in treatment.

To conclude this short résumé of our present methods of maintaining cardiac compensation, during the past twenty years enormous advances have been made in the treatment of chronic diseases. tuberculosis has become not nearly so hopeless as heretofore in our estimation, diabetics have their lives prolonged, tabetics have been made to walk again; these successes have been accomplished by painstaking attention to the smallest details of treatment and of methods of living-but in no chronic disease is the importance of individualizing more marked than in the one under discussion this evening. Every patient reacts differently to drugs, to dosage, to different preparations of the same drug, and to the different forms of mechanical stimulation. Care and attention to all these factors will find our efforts amply rewarded by prolonging the life, the ease, and pleasure of living of our pa-

158 EAST SEVENTY-SECOND STREET.

A PRACTICAL CONSIDERATION OF DELIRIUM TREMENS, WITH SPECIAL REFERENCE

TO ITS TREATMENT.*

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Delirium tremens is a condition perhaps infrequently encountered by the average practitioner; yet all of us will occasionally be required to deal with an alcoholic intoxication, either as an entity in itself or as a complication of some other condition, medical or surgical, which, if improperly managed, may develop delirium tremens. Many of our patients are addicted to the habitual use of alcohol, and delirium tremens being only an incident in the course of a chronic alcoholism, it is distinctly to our advantage to recognize the premonitory warnings of this condition and institute proper prophylactic treatment, rather than be com-

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pelled to fight the disease itself. The treatment of the latter is necessarily radical, and this, together with the extreme gravity of delirium tremens, may seriously embarrass our efforts in other directions.

In a series of one hundred and four cases of delirium tremens, and a large number of instances in which it seemed imminent unless speedily checked. I have had an opportunity to test various methods of treatment and analyze the results obtained from each. This disease will always have a high mortality, in spite of any method of treatment, but by classifying our cases clinically and prescribing accordingly the mortality may be materially reduced.

cordingly the mortality may be materially reduced. We must remember that in a chronic alcoholic patient delirium tremens may be precipitated in one of two ways: either by a temporary excess or by the abrupt withdrawal of alcohol. I have found the latter to be by far the most common cause, which is particularly of note because we are so apt to forget it. This is especially true in hospital practice. A patient may be accustomed to take a considerable amount of alcohol daily without ever becoming "drunk," but if suddenly and entirely deprived of it may develop delirium tremens. It has been my experience that this is the cause of the majority of cases, and usually the physician is, although unintentionally, the most important factor in their development. For instance, suppose we see a case of rheumatism in a patient who is an habitually heavy drinker. Naturally, the first order given is restricted diet and total abstinence; or suppose the same individual is admitted to a hospital with a fracture of the femur; he is confined to bed and his accustomed daily amount of "stimulation" cut The result is the same.

The clinical picture of delirium tremens is well described in all the textbooks. But there has been a marked dissimilarity between the clinical picture of the textbooks and the clinical manifestations in the greater number of cases that have come under my observation. Only a relatively small number of patients demonstrated the commonly described hallucinations. For convenience, let us divide our cases into three clinical groups:

I. Those that evidence prodromal or warning symptoms, the attack itself having not yet developed; characterized by restlessness, apprehensive feelings, tremor, depression, insomnia, anorexia, constipation, and a coated and tremulous tongue. These symptoms may be present for a day or two, and then gradually merge into those of one or the other of the two groups following. Or the patient may recover without a true attack having been developed.

2. Those in which delirium tremens itself has appeared, but are melancholy and comparatively quiet; characterized by unconsciousness, increased tremor, talking or mumbling incoherently, picking at the bed clothes, cold sweat, muttering delirium, dilated pupils, and incontinence of urine and fæces. There is usually some elevation of temperature, and the pulse is soft and rapid. This is the clinical picture the majority of cases present, and by far the most common type of the disease.

3. Those that appear maniacal; characterized by incessant talking, constant insomnia, paræsthesia, illusions, hallucinations of sight and hearing, wild

shrieking, struggling, and maniacal delirium. The temperature may rise as high as 104° F., and the pulse is rapid and of high tension, as a rule. This is the ordinarily described, but most infrequently occurring, type.

Either of these last two types may persist for from three to eight days, at the end of which time the symptoms will either gradually abate, or there will be a reaction with softening and compressibility of the pulse, pulmonary cedema, cardiac fail-

ure, and death.

Few of the textbooks mention the complications of delirium tremens. Osler states that pneumonia often precipitates an attack. But I have observed that when these two occur together, delirium tremens is generally the primary disease and pneumonia the complication. This was noted in thirty-six of my one hundred and four cases. Acute nephritis is another disease to be constantly on guard for. Usually there is also something present which has necessitated the patient's confinement to bed and deprivation of alcohol; this may be an accident, injury, or disease.

Delirium tremens will always tax the skill and judgment of the physician, for although good nursing is absolutely essential, the proper choice of remedial agents is of equal importance. The fact that warm weather tends to increase the mortality

should be given due consideration.

Never forget that we are dealing with a cardiovascular system far below par in delirium tremens. This point cannot be too strongly emphasized. Three of my patients died in an almost identical manner. In each instance the symptoms had apparently cleared up, the mind was clear, and the patient was allowed to get up. Each had been out of bed for from three to five days, and was permitted to not only walk about, but to even do light work in the hospital ward. And each one suddenly laid down on his bed, the pulse gradually softening and weakening, and died within ten minutes, in spite of all attempts to revive them. These cases were an object lesson to me which I shall never forget. I am firmly convinced that had I kept these patients in bed for a week during convalescence and enforced complete rest these deaths would not have occurred.

The treatment resolves itself into that appropriate for each of the three clinical groups re-

spectively.

I. The treatment for this group should be essentially prophylactic. If the patient is an alcoholic, allow him a certain amount of alcohol each day, irrespective of any injury or other disease being present. This amount may be gradually decreased as the nervous symptoms clear up. Give 20 grains of compound jalap powder, with 5 grains of calomel, immediately, and follow with half an ounce of magnesium sulphate in the morning. The patient should be isolated in a light, airy room, if possible, and his mind diverted from himself. The diet, on general principles, should be nutritious and easily digested. The details of the diet will depend largely on any other coexisting condition. The bladder should be carefully watched and catheterized every eight hours if the patient does not void. Al lowing the bladder to remain full for any length of time may cause a reabsorption of toxines. I have experimented with four methods of treatment which have been considered appropriate for this stage: Large doses of digitalis; morphine and hvoscine; bromides and chloral; and strychnine and digitalin. I have never observed that a patient derived any benefit from the large doses of digitalis, at one time so strongly recommended. I gave this method a fair trial, and the result was either a cumulative action of the digitalis or over stimulation of the heart, with an undesirable reaction necessarily following. I shall disregard this method hereafter, as I do not deem it worthy of further consideration. The morphine and hyoscine combination is too radical for this stage. I have proved to my own satisfaction that the bromide and chloral mixture will prevent a larger number of these cases from further development than any other method, but of the cases that do develop, a greater proportion die. When using this combina-tion I generally give 5 grains of sodium and 5 grains of potassium bromide, with 15 grains of chloral, every four hours. More chloral than bromides, because a cerebral rather than a nervous sedative effect is to be desired. When the patient's general health is good I have found this to be a very satisfactory plan. The dose is to be repeated every four hours until the desired effect is produced. If, however, the patient's condition is poor, and the heart not what it should be, I have found the strychnine and digitalin combination efficacious; 1/30 of a grain of strychnine sulphate and 1/100 of a grain of digitalin, by hypodermatic injection, with half an ounce of whiskey by mouth, every four hours. As the patient improves, the strychnine is reduced to 1/60 of a grain, then eliminated, followed by cutting out the digitalin, and finally the whiskey is gradually withdrawn. A larger proportion of patients so treated will suffer from a true attack than with the bromide and chloral mixture, but the mortality is materially re-Provided there is no other serious associated condition, I must confess that I would favor this mode of treatment, as the attack, should it come on, is usually mild, and the majority of cases recover. The emunctories should always be kept active. If the condition is due to an excess, it is well to give 1/10 of a grain of apomorphine hydrochloride as soon as possible, to empty the stomach of all the alcohol, as well as any other débris it may be accommodating.

2. Good nursing is a very important item in the treatment of the cases comprising this group. The patient should be kept scrupulously clean, the bed linen changed frequently, and any involuntary excretion removed as soon as possible. Should a bed-sore appear, get a new nurse. The degree of restraint necessary, and the manner of its accomplishment, depends upon individual circumstances. When some one can be in constant attendance, most cases of this class require nothing further. The ordinary "strait jacket" and the restraining sheet covering the whole bed are either insufficient or cruel. If additional restraint is indicated I prefer two adjustable leather wrist bands which may be fastened to the bedstead on each side by means of straps. These allow a limited movement of the

arms, and do not constrict the chest. Should the patient be exceptionally restless, they may be reinforced by ankle bands and straps of the same These patients require nourishment, and the diet should not be too restricted. But we must not forget that approximately seventy per cent. have an associated alcoholic gastritis. Should feeding by the mouth be impracticable, he may befed by the rectum. In fact, where there is a severe gastritis, I prefer to feed this way. The excretory organs must be kept active, but not at the expense of the patient's vitality. The results that I have obtained from the use of the hot pack have been anything but desirable. There is nearly always a cold sweat that serves to dispose of as much waste as the patient's welfare permits. Increasing this quantity puts an extra tax on the heart, which is already overstrained. We should endeavor to give these patients and their nervous systems rest and sleep. It may be often accomplished by generous doses of bromides and chloral, either by the mouth or by the rectum. It is best to begin with moderate doses, and gradually increase them, watching the heart carefully. If this does not produce the desired effect in two days discontinue it. The morphine and hyoscine combination, 1/4 of a grain of morphine sulphate and 1/100 of a grain of hyoscine hydrobromide, by hypodermatic injection, every four hours, will sometimes prove efficient when the bromide and chloral mixture has failed. But don't ever use this method of treatment in the summer months! The mortality is frightful. In warm weather it is safer to employ the strychnine and digitalin as described for the first group. The duration of the attack is lessened and more cases recover.

3. This group demands energetic remedial measures. Left to themselves, the severity and maniacal characteristics tend to run a progressive course. There is a constant extraordinary strain on the heart, which finally rebels, and death soon ensues. Rest is the all important element to be desired. All will require complete restraint; best accomplished by reinforcing the before mentioned straps with a rolled up sheet passed behind the neck, under the arms on each side, and fastened to the head of the bed. Either the bromide and chloral mixture or the morphine and hyoscine combination, in full doses, is indicated. When these measures do not effectually control the situation, I have obtained excellent results from deep ether anæsthesia. This is usually followed by a peaceful sleep and restoration to consciousness, which the patient appreciates so much that he will frequently request that it be repeated. I have often used it as many as four times in twenty-four hours. Every case in which ether was given recovered.

I have endeavored to confine myself solely to the clinical aspects of delirium tremens, purposely avoided theoretical discussion, and have not attempted to elaborate upon the various methods of treatment and physiological action of the drugs used to any extent.

Subsequent to convalescence being established and the patient on the road to recovery, I would suggest that he be confined to bed for at least a

The medication is to be gradually decreased and the diet correspondingly increased.

There will often be an indication for medicinal agents other than those that I have mentioned. For instance, in the presence of pulmonary cedema, atropine and strychnine, in conjunction with cupping, will be found valuable. Occasionally there will be indication for the ammonium salts, ergot, camphor, elaterium, infusion of digitalis, etc. I have found a mixture containing tincture of nux vomica, tincture of capsicum, and compound tincture of gentian very useful for the gastritis.

2030 BROADWAY.

ON SOME BIOCHEMICAL AND ANATOMICAL CHANGES INDUCED IN DOGS BY POTASSIUM CYANIDE.

BY WILLIAM H. WELKER A. C., AND NORMAN E. DITMAN, M. D.,

New York, (Fr. m. t. g. Laboratories of Biological Chemistry and Pathon sy of Colombia University, at the Cologs of Physicians and Surgeon New 1 ork.) I .- Introduction.

In connection with an investigation that was lately conducted by us in this laboratory, on diminished oxidation under certain pathological conditions, it was desirable to ascertain the effects of such diminished oxidation on elimination of various nitrogen containing products in the urine. Potassium cyanide. which induces diminished oxidation, was selected for the purpose, and the six experiments described in this paper were accordingly carried out. These experiments were also intended to furnish fundamental data for investigations of the influence of guanidin, methyl guanidin, creatin, and creatinin under conditions of diminished oxidation. We have conducted preliminary experiments along these lines, and hope to conduct them before long to com-

It had been our intention to carry out several additional experiments before making our data public. but the recent appearance of a paper on this particular subject, which presented results (of only a few experiments) that are not in harmony with those obtained in this study, induced us to publish at once the observations we have made, especially as it will be some time before we shall be able to resume the work in this connection.

2.- Conduct of the Experiments.

Animals and environment.—These experiments were conducted on six dogs by the general metabolism methods used in this laboratory.1 Each animal was apparently healthy and normal in all respects at the beginning of the experiment in which it was used. The form of the cage² in which the dogs were confined was very well adapted to the collection of the excreta and allowed rapid substitution of urine receivers, when vomiting very closely followed the elimination of urine or vice versa. The cage as well as the room was well ventilated.

¹Mead and Gies: American Journal of Physiology, v, p. 106, 1901; also Gies and Collaborators: Biochemical Researches, i, p. 410, (Reprint No. 21), 1903.

*Gies: American Journal of Physiology, NN, p. 403, 1905

*Berg and Welker: Jeurnal of Biology, NN, p. 404, 1906; Welker: American Journal of Physiology, NN, p. 258, 1905

The animals were thoroughly accustomed to their surroundings and apparently contented before they

were subjected to experimental treatment.

Food.—The daily diet consisted of hashed lean meat, cracker meal, lard, bone ash and water. The raw meat was preserved by refrigeration, according to the usual method in this laboratory.' The bone ash was mixed with the food to give the fæces a desirable consistency.

Periods, weights.—In the records of the experiments, each day ended at 11 a.m. Just before that time the animal was weighed and the weight recorded for the day. At that time also the excreta were removed from the cage and urine receiver.

The food was then given.

Injection of potassium cyanide.—The potassium cyanide used in these experiments was a sample of Kahlbaum's purest ("K"). Whenever used, the cyanide was rapidly weighed and a I per cent. solution prepared. This solution was protected from direct light when not in use. Only fresh solutions were employed. The injections were made subcutaneously in the lumbar region. The animals were in no instance put deeply under the influence of the cyanide by the amounts injected.

Analytic methods.-No analyses were made of the food materials used in these experiments, but great care was taken to secure a sufficient supply of each of the various ingredients to last throughout an entire experiment. Uniformity of diet from beginning to end of each experiment was thus assured.

The amount of ammonia in the urine was determined daily in all experiments except the fifth, in which experiment the dog was on a relatively high plans of protein nutrition. In the case of that animal, it was found by experiment that the urine which was preserved with thymol, showed little tendency to undergo change of ammonia content even after several days, and ammonia was accordingly determined in combined daily urines. The remaining determinations were made on "period urines." These period urines were prepared by combining aliquot fractions of the daily volumes. In the case of the first dog the volumes of the "period urines" were so low that they were diluted with equal quantities of water, in order that the usual amounts could be used for the various determinations. The method used for the determination of ammonia in the urine was Folin's.6

Total nitrogen was determined by the use of the Kjeldahl method. The urine was decomposed by means of concentrated sulphuric acid and small quantities of copper sulphate, a method long in satisfactory use in this laboratory. The digestion was continued for thirty to forty-five minutes after the mixture had assumed a true greenish tint. On coolmg, in each case the mixture was colorless.

The alloxuric nitrogen was determined by preliminary precipitation according to the Salkowski' method, I llowed by treatment of the washed precipitate, together with the nitrogen-free filter paper,

Col aborator Brockennod Researches 1, p. 69 (Reprint No. 1).

by the Arnstein method for the removal of ammonia nitrogen, i. e., by adding water and magnesium oxide to the paper and precipitate, and boiling the mixture. To facilitate matters this was done in a large Kjeldahl flask. After all the ammonia had been driven off, the residual nitrogen was estimated by the usual Kjeldahl method.

Urea was determined by the Folin' method; allantoin by the Loewy10 method; uric acid by the Folin-Shaffer method; creatinin by the Folin method.

Summaries of observations and results in the experiments with animals on medium planes of protein nutrition (Tables I-IV.)

Table I.—First Dog.

Preparatory period.—The daily diet of this animal consisted of meat, 97 grammes; a cracker meal, 26 grammes; lard, 20 grammes; bone ash, 10 grammes; water, 225 c.c. The initial weight of the animal was 6.5 kilos. The preparatory period continued for seventeen days.

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| 5 | 5.92 | 125 | 24 | Amphoteric. | 0.1034 | 15 | |
| 6 | 5.96 | 95 | 28 | Acid. | 0.0926 | 21 | |
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| 22 23 24 | 5.88 5.90 5.96 5.86 | 90 40 160 90 170 | 23 29 23 | Acid. Faintly alkaline. Acid. CFFECIS OF POTA: | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY | 18 23 8 25 | 153 163 |
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| 23 24 25 | 5.88 5.90 5.96 5.86 1 RIOD. CREAS | y Large 90 40 160 90 170 Furth ED Dose 160 | 23 29 23 11 R E | Acid. Faintly alkaline. Acid. Friering of Potal | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY 6, 1907. 0.1166 | 18 23 8 25 (NIDE | 113 163 173 153 |
| 23 24 25 1. 11.11.11.11.11.11.11.11.11.11.11.11.1 | 5.88 5.90 5.96 5.86 1 RIOD. CREAS 5.86 5.81 | 90 40 160 90 170 FURTH ED DOSE 160 | 23 29 23 11 R E | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Forecis of Pora- | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY 6, 1907. 0.1166 0.0723 | 18 23 8 25 (NIDE | 163 173 183 183 (IN |
| 23 24 25 1. HE H 1 26 27 28 | 5.88 5.90 5.96 5.86 1 RIOD. CREAS 5.86 5.81 5.85 | y Large 90 40 160 90 170 Furth ED Dose 160 | 23 29 23 11R F 28), Jt | Acid. Faintly alkaline. Acid. Friering of Potal | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY 6, 1907. 0.1166 | 18 23 8 25 (NIDE | 103 163 173 153 (IN |
| 23 24 25 1. 11.11.11.11.11.11.11.11.11.11.11.11.1 | 5.88 5.90 5.96 5.86 1 RIOD. CREAS 5.86 5.81 5.85 5.85 | 90 40 160 90 170 FURTH ED DOSH 160 120 60 | 23 29 23 11 R E | Acid. Faintly alkaline. Acid. CEFFCTS OF POTA- FAINTLY 30 TO AUGUST Faintly acid. Acid. Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY 6, 1907. 0.1166 0.0723 0.0940 | 18 23 8 25 (NIDE | 163 173 183 (IN |
| 22 | 5.88 5.90 5.96 5.86 5.86 5.81 5.85 5.85 5.85 | 90 40 160 90 170 FURTH ED DOSH 160 120 60 110 120 90 | 23 29 23 29 23 11R E 25 48 25 48 | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Acid. Acid. Faintly acid. Acid. Acid. Acid. Acid. Acid. Acid. Acid. Alkaline. Faintly alkanie. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 0.1166 0.0723 0.0940 0.1024 0.1024 | 18 23 8 25 (NIDE 13 24 10 | 113 163 173 183 (In 3-5 193-5 203-5 3-5 213-5 |
| 22 23 24 25 | 5.88 5.90 5.96 5.86 1 RIOD. CREAS 5.86 5.81 5.85 5.85 5.85 | Y LARGE 90 40 160 90 170 FURTH ED DOSE 160 120 60 110 120 145 | 23 29 23 29 23 11 R E 25), Jt 22 25 48 25 27 55 24 | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. FEFECTS OF POTA- LLY 30 TO AUGUST Faintly acid. Acid. Acid. Alkaline. Faintly alkanie. Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CY 6, 1907. 0.1166 0.0723 0.0940 0.1024 0.0900 0.1043 0.1390 | 18 23 8 8 25 (NIDE 13 24 10 20 18 10 25 | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 5.88 | Y Largi 90 40 160 90 170 FURTH ED DOSH 160 120 90 145 150 | 23 29 23 11 R E 25, Jt 22 25 48 25 27 55 24 20 | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Faintly 30 TO AUGUST Faintly acid. Acid. Alkaline. Faintly alkanie. Alkaline. Neutral. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM C) 6, 1907. 0.1166 0.0723 0.0940 0.1024 0.0905 0.11043 0.1390 0.1023 | 18 23 8 8 25 (NIDE 13 24 10 20 18 10 25 30 | 113 163 173 183 (In 3-5 193-5 203-5 3-5 213-5 |
| 22 | 5.88 5.96 5.96 5.86 FRIOD. CREAS 5.86 5.85 5.85 5.85 5.83 5.83 | y Largi 90 40 160 90 170 FURTH ED DOSH 160 120 60 110 120 90 145 150 RIOD.—A | 29 23 11 R EES), Jt 22 25 48 25 27 55 24 20 FTER | Acid. Faintly alkaline. Acid. Fraintly alkaline. Acid. Frecrs of Pota Faintly acid. Acid. Acid. Alkaline. Faintly alkanie. Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 6, 1907. 0.1166 0.0723 0.0940 0.1024 0.0900 0.1043 0.1390 0.1023 7 TO 16, | 18 23 8 25 (NIDE 13 24 10 29 18 10 25 30 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 11VEL 5.88 5.96 5.96 5.86 11RIOD. CREAS 5.85 5.85 5.85 5.85 5.83 5.83 5.83 5.83 | Y LARGI 90 40 160 90 170 FURTH 160 120 60 1120 90 145 150 RIOD.—A | 23 29 23 11R ES), Jt 22 25 48 25 27 55 420 FTER 25 | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Faintly 30 TO AUGUST Faintly acid. Acid. Alkaline. Faintly alkanie. Alkaline. Neutral. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 6, 1907. 0.1166 0.0723 0.0940 0.1023 0.1043 0.1390 0.1023 7 TO 16, 0.1276 | 18 23 8 25 NNIDE 13 24 10 20 18 10 25 30 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | TIVEL 5.88 5.90 5.96 5.86 7 RIOD. CREAS 5.85 5.85 5.85 5.85 5.85 5.83 5.85 5.83 5.85 | y Largi 90 40 160 90 170 FURTH ED DOSH 160 120 60 110 120 90 145 150 RIOD.—A | 29 23 11 R EES), Jt 22 25 48 25 27 55 24 20 FTER | ES), JULY 26 TO Acid. Faintly alkaline. Acid. FFERCE OF POTAL LY 30 TO AUGUST FAINTLY acid. Acid. Acid. History Alkaline. Alkaline. Neutral. PERIOD, AUGUST Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 6, 1907. 0.1166 0.0723 0.0940 0.1024 0.0900 0.1043 0.1390 0.1023 7 TO 16, | 18 23 8 25 (NIDE 13 24 10 29 18 10 25 30 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 11VEL 5.88 5.90 5.96 5.86 11 RIOD. CREAS 5.86 5.81 5.83 5.83 5.83 5.83 5.83 5.83 5.83 5.83 | Y Large 90 160 160 170 FURTHED DOST 160 120 90 145 155 125 115 1190 | 23 29 23 HR F2S), Jt 22 25 48 25 27 524 20 FTER 25 19 | ES), JULY 26 TO Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Acid. Acid. Acid. Alkaline. Faintly alkanie. Alkaline. Alkaline. Alkaline. Alkaline. Alkaline. Alkaline. Alkaline. Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 0.1166 0.0723 0.0940 0.1024 0.1023 7 TO 16, 0.1276 0.1831 0.1534 | 18 23 8 25 (NIDE 13 24 10 25 18 10 25 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 5.88 5.90 5.96 5.86 5.81 5.85 5.85 5.85 5.83 5.83 5.83 5.83 | y Largi 90 40 160 90 170 FURTH ED DOSH 160 120 90 145 150 RIOD.—A | 23 29 23 HFR ESS), Jt 22 25 48 527 55 24 20 FTER 25 18 35 9 26 | ES), JULY 26 TO Acid. Faintly alkaline. Acid. FFECES OF POTAS IF SOME AUGUST FAINTLY SO TO AUGUST FAINTLY SO TO AUGUST Alkaline. Alkaline. Alkaline. Neutral. PERIOD, AUGUST Alkaline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM CV 5 6, 1907. 0.1166 0.0723 0.1024 0.09040 0.1024 0.09043 0.1390 0.1023 7 TO 16, 0.1276 0.0815 0.1534 0.1343 0.0814 | 18 23 8 25 7 10 20 18 10 25 30 1908. 7 23 20 23 | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 11VEL 5.88 5.90 5.96 5.86 5.86 5.85 5.85 5.85 5.85 5.83 5.83 5.83 5.83 | Y Largi 90 40 160 90 170 FURDI 160 120 60 110 120 145 150 155 155 115 100 90 90 145 125 110 125 125 110 125 125 125 125 125 125 125 125 | 23 29 29 22 25 48 5 27 5 5 24 20 FTER 25 3 5 5 6 26 | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Acid. Alkaline. Faintly alkaline. Acid. Alkaline. Acid. Alkaline. Acid. Acid. Alkaline. Akuline. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM C) 0.1166 0.0723 0.0940 0.1024 0.0900 0.1023 7 TO 16, 0.1276 0.1815 0.1843 0.0815 | 18 23 8 25 (NIDE 13 24 10 20 18 10 25 30 1908. 7 23 24 20 25 30 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 11VEL 5.88 5.90 5.86 11RIOD. CREAS 5.86 5.85 5.85 5.85 5.85 5.83 5.80 5.80 5.80 5.80 5.80 5.80 5.80 5.80 | 90 40 160 90 170 FURTHED DOSH 160 120 90 145 150 AIDD.—A 135 115 190 110 110 110 110 110 110 110 110 110 | 23 29 21 R FESS), Ju 22 25 48 55 27 554 20 AFTER 25 19 26 23 | ES), JULY 26 TO Acid. Faintly alkaline. Acid. FFECES OF POTAS IF SOME AUGUST FAINTLY SO TO AUGUST FAINTLY SO TO AUGUST Alkaline. Alkaline. Alkaline. Neutral. PERIOD, AUGUST Alkaline. | 29, 1907. 0.0649. 0.0351 0.1183 0.0629. 0.1388 SSIUM CV. 0.166, 1907. 0.1166 0.0723 0.0940 0.1024 0.09040 0.1023 0.1024 0.09040 0.1023 0.1024 0.09040 0.1023 0.1024 0.09040 0.1023 0.1024 0.09040 0.1023 0.1024 0.1043 0.1043 | 18 23 8 25 10 10 20 18 10 25 10 25 10 27 23 24 10 25 10 25 10 25 10 25 10 25 10 26 10 27 10 27 10 27 10 27 10 27 10 27 10 27 10 27 10 10 10 10 10 10 10 10 10 10 10 10 10 | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | 11VEL 5.88 5.90 5.96 5.86 5.86 5.85 5.85 5.85 5.85 5.83 5.83 5.83 5.83 | Y Largi 90 40 160 90 170 FURDI 160 120 60 110 120 145 150 155 155 115 100 90 90 145 125 110 125 125 110 125 125 125 125 125 125 125 125 | 23 29 29 22 25 48 5 27 5 5 24 20 FTER 25 3 5 5 6 26 | Acid. Faintly alkaline. Acid. Fraintly alkaline. Acid. Fraintly acid. Acid. Acid. Acid. Alkaline. Alkaline. Neutral. Period, August Alkaline. "" Amphoteric. Alkaline. Amnhoteric. | 29, 1907. 0.0644 0.0351 0.1183 0.0629 0.1388 SSIUM C) 0.1166 0.0723 0.0940 0.1024 0.0900 0.1023 7 TO 16, 0.1276 0.1815 0.1843 0.0815 | 18 23 8 25 (NIDE 13 24 10 20 18 10 25 30 1908. 7 23 24 20 25 30 1908. | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 223 | 11VEL 5.88 5.90 5.96 7.810D. CREAS 5.86 5.85 5.85 5.85 5.85 5.85 5.85 5.85 | Y Largi 90 40 160 90 170 FURTI 60 120 60 110 120 150 150 150 150 150 115 115 115 115 11 | Dos | Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Alkaline. Faintly acid. Alkaline. Acutra Alkaline. Acutra Alkaline. Alkaline. Alkaline. Alkaline. | 29, 1907. 0.0644 0.0341 0.1183 0.0629 0.1388 SSIUM CV 6, 1907. 0.1166 0.0723 0.0940 0.1024 0.09040 0.1024 0.09040 0.1023 7 TO 16, 0.1276 0.1534 0.0814 0.0814 0.0643 0.0633 | 18 23 8 25 (NIDE 13 24 10 20 18 10 25 30 1908. 7 23 20 23 20 23 24 20 25 20 25 20 20 20 20 20 20 20 20 20 20 20 20 20 | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22 | TIVEL 5.88 5.906 5.86 11 RIGH. CREAS 5.81 5.82 5.83 5.83 5.83 5.83 5.83 5.83 5.83 5.83 | Y Largi 90 40 160 90 170 FURTHED DOST 160 120 90 145 150 RIOD.—A 135 125 115 125 115 126 110 110 1115 115 120 | 23 29 23 E E Dos 23 29 23 E E E E E E E E E E E E E E E E E E | ES), JULY 26 TO Acid. Faintly alkaline. Acid. Acid. Acid. Faintly alkaline. Faintly acid. Acid. Acid. Alkaline. Faintly alkanie. Alkaline. Neutral. Pertop, August Alkaline. Amphoteric. Alkaline. Amphoteric. Alkaline. Amphoteric. Alkaline. | 29, 1907- 0.0644 0.10351 0.11639 0.0629 0.0629 0.1063 0.1166 0.0723 0.0040 0.1023 0.1023 7 TO 16, 0.1276 0.0815 0.1276 0.0815 0.1244 0.1343 0.1343 0.0633 0.0633 | 18 23 8 25 7 NIDE 13 24 10 20 18 10 25 30 1908. 7 23 20 25 21 14 0 0 12 20 15 | 103 163 173 183 183 (IN 3-5 203-5 3-5 3-5 3-5 |
| 22. 23. 24. 25. 15 15 15 15 15 15 26. 27. 28. 20. 30. 31. 32. 33. 33. 4. 45. 46. 47. 48. 49. 40. 11. 44. 43. 44. 44. | 11VEL 5.88 5.906 5.86 11 RIOD. CREAS 5.81 5.82 5.83 5.83 5.83 5.83 5.83 5.83 5.83 5.83 | Y LARG. 90 40 160 90 170 60 120 60 110 120 90 145 150 115 120 90 145 115 120 110 110 110 110 110 110 110 110 110 | 23 29 23 HIR ET 25 25 48 5 27 26 26 21 29 24 20 29 24 20 20 24 20 20 24 20 20 24 20 20 24 20 20 24 20 20 20 20 20 20 20 20 20 20 20 20 20 | ES), JULY 26 TO Acid. Faintly alkaline. Acid. Faintly alkaline. Acid. Acid. Alkaline. Faintly alkanie. Acid. Alkaline. Faintly alkanie. Acid. Acid. Alkaline. Annhoteric. Alkaline. Amphoteric. Alkaline. Amphoteric. Alkaline. Amphoteric. Alkaline. Alkaline. Acid. Alkaline. Acid. Aci | 29, 1907- 0.0644 0.0331 0.0629 0.1183 0.0629 0.1388 SSSIV C 0.1386 0.1907- 0.1024 0.0940 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.1024 0.0813 0.0814 0.1643 0.0814 0.1643 | 18 23 8 25 (NIDE 13 24 10 20 18 10 25 30 1908. 7 23 20 14 0 0 12 20 15 504. | 103 163 173 183 183 (IN 203.55 203.55 213.55 213.55 213.55 213.55 |

Supervised vist Gr. Inversion bounded Physiology 88, 0 (13, 1907).

Each Fett shift for physiologische Chame, 8880, p. 161, 1908, subsecoski Physiologische, leist, p. 268, 1913.

Aus Sun Zeitschigh für physiologische, heime 880, p. 11, 1897, p. 11, 189

^{**}NNM, B. 333, 1902; XXXVII, D. 548, 1903.
**Placewy: Joehn fur experimentalle Pathologic and Pharmakologo
44, D. 19, 1900.
**IFolin and Shaffer: Zeitschrift fur physiologische Chome XXXII.

1 552, 1901.
**Polin: Diidem, xli, p. 223, 1904.
**Until 15 grammes per kilo; approximately o 33 gramme of integer oper kilo.

Table 11.—First Dog. Summary of Analytic Totals.

| | | | | URINAR | NURBBER | | | | Undete |
|------|-------------|----------|----------|-----------|------------|-------------|-------------|------------|-----------|
| | Period. | Total | Ammonia, | Urea. | Allantoin, | Urne acid. | Purin bases | Creatinin, | 11 15 () |
| Ac. | Conditions. | grammes. | grammes. | grammes. | gramme. | £1.4111-1-c | gramme. | gramme. | grammes. |
| | Normal | 29.4046 | 1.0326 | 25.31.8 | 0.3636 | 0.0462 | 0.0002 | 0.6315 | 2.0087 |
| 11 | Dosage | 35.8040 | 1.3504 | 30.9750 | 0.4294 | 0.0470 | 0.0530 | 0.7332 | 2.2160 |
| III | Dosage | 13.2500 | 0.4192 | 11.1690 | 0.2072 | 0.0166 | 0.0076 | 0.2442 | : 1925 |
| 17. | ., | 25.3814 | 0.8215 | 21 4370 | 0.2616 | 0.0358 | 0.0000 | 0.4275 | 2.39 |
| 1. | Recovery | | 1.0879 | 26.4427 | 0.3054 | 0.0590 | 0.1451 | 0.5835 | 3.1054 |
| 1 | Mecareti | 31.7290 | 1.00/9 | 20.442/ | 0.3034 | 010390 | | - 0 00 | 0 - 1 |
| | | | | Daily . | WERAGES. | | | | |
| I. | Normal | 3.2672 | 0.114," | 28125 | 0.0404 | 0.0051 | 0.0010 | 0.0702 | 0.2232 |
| II. | Dosage | 2.9833 | 0.1125 | 2 5813 | 0.0358 | 0.0039 | 0.0044 | 0.0611 | 0.1847 |
| III. | | 3.3141 | 0.1048 | 2.7922 | 0.0518 | 0.0042 | 0.0019 | 0.0607 | 0.2982 |
| 17. | 6.6 | 3-17-27 | 0.1027 | 2.6797 | 0.0327 | 0.0045 | 0.0000 | 0.0534 | 0.2996 |
| 1. | Recovery | 3.1729 | 0 1088 | 2.6443 | 0.0305 | 0.0059 | 0.0145 | 0.0584 | 0.3105 |
| | | | REI | AHON T II | IF TOTAL N | 118 475 8 | | | |
| | | Per | Per | Per | Per | Per | Pers | £* | Per |
| | | cent. | cent | cent | ent | < 111 | cost | 1 * | cent. |
| I. | Normal | | 3-51 | 80,10 | 1.24 | + 16 | 103 | 2.15 | 6.83 |
| 11. | Dosage | | 3-77 | 86.52 | : 20 | + 1.3 | 0.15 | | 6.20 |
| III. | Liosage | | 3 10 | 84.30 | 1.56 | 1,13 | 1 16 | : 84 | 8.99 |
| IV. | 4.1 | | 3.24 | 84.45 | 1.03 | + 14 | 1,00 | 1.68 | 0.45 |
| 1. | Recovery | | 3 43 | 4333 | 3,06 | 0.10 | 0.45 | 1.54 | 9.79 |
| , | Meccelet? | | 2 43 | | | | *** | | |

Table III.—Second Dog.

Preparatory period.—The initial weight of this animal was 8.87 kilos. The preparatory period continued for 13 days. The daily diet consisted of the following: Meat, 135 grammes; 23 cracker meal, 36 grammes; lard, 27 grammes; bone ash, 10 grammes: water, 315 c.c.

FIRST PERIOD .- NORMAL CONDITIONS OF TOBER 2: 1 - 20 14

| Day No. | Body weight, kilos, | Utine, Volume, c. c. | Urine. Sp. gr., Loxx. | Urine. Reaction, litmus. | Urine. Ammonia nitrogen, grammes. | | Porassum evan per kilo, miligramue - |
|---------------------------------|--|--|--|--------------------------------|--|--|--|
| 2 | 8.36 | 405 359 | 16 | Acid | 0.1997 | 30 | |
| 3 | 8.34 | 330 | 17 | 6.6 | 0.1844 | 18 | |
| 4 | 8.35 | 290 | 16 | 4.5 | 0.1573 | 17. | |
| 5 | 8.35 8.30 | 330 | 18 | 14 | 0.1081 | 30 | |
| 7 | 8.32 | 305 | 17 | 6.1 | 0.1537 | | |
| 8 | 8.28 | 420 | 16 | 4. | 2 1772 | 2,3 1.5 | |
| 9 | 8.35 | 382 | 15 | ** | 0.1716 | 30 | |
| SECOND PERIOD I | Tanacac | D | | | | | |
| | TELECTS | OF PO | TASSIU M | CANNI | DE, OCTO | BER : | (1) I |
| | 2 | VOLEMBE | R 6, 19 | 07. | DE, OCTO | BER (| (-) T |
| 10 | 8.28 | VOVEMBE 300 | R 6, 19 | Acid | 0.1913 | 3 | : |
| 10 | 8.28 8.28 | 309 360 | 18 17 | 07. | 0.1913 | 18 | 1.5 |
| 10 | 8.28 | VOVEMBE 300 | R 6, 19 | Acid | 0.1913 | 3 | : |
| 10 | 8.28 8.28 8.29 8.26 8.30 | 309 360 365 365 365 320 | 18 17 16 16 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 | 18 6 40 16 | 1.5 |
| 10. 11. 12. 13. 14. | 8.28 8.28 8.29 8.26 8.30 8.25 | 309 360 365 365 365 320 425 | 18 17 16 16 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 | 18 40 40 16 | 1 1.5 0 2 2.25 2.5 |
| 10 | 8.28 8.28 8.29 8.26 8.30 8.25 8.30 | 309 360 365 365 365 320 425 335 | 18 17 16 16 16 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 | 18 0 40 16 16 28 | 1.5 0 2.25 2.5 2.7 |
| 10 | 8.28 8.28 8.29 8.26 8.30 8.25 8.30 8.30 | 309 360 365 365 320 425 335 340 | 18 17 16 16 16 16 16 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 0.1932 | 18 6 40 16 16 28 27 | 1 1.5 0 2 2.25 2.5 |
| 10 | 8.28 8.29 8.26 8.30 8.30 8.30 8.30 | 309 360 365 365 320 425 335 340 PERI | 18 17 16 16 16 16 16 17 17 17 17 18 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 0.1932 | 18 6 40 16 16 28 27 | 1.5 0 2.25 2.5 2.7 |
| 10 | 8.28 8.28 8.29 8.26 8.30 8.25 8.30 8.30 | 309 360 365 365 320 425 335 340 ER PERI 284 | 18 17 16 16 16 16 16 19 17 OD. Nov. 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 0.1932 7 1) 12, | 18 6 40 16 16 28 27 10 27 | 1.5 0 2.25 2.5 2.7 |
| 10 | 8.28 8.29 8.26 8.30 8.30 8.30 8.30 | 309 360 365 365 365 320 425 335 340 ER PERI 284 387 | 18 17 16 16 16 16 16 19 17 16 Nov. 16 14 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 0.1932 7 1) 12, 0.1385 0.1526 | 18 6 40 16 16 28 27 | 1.5 0 2.25 2.5 2.7 |
| 16 | 8.28 8.28 8.29 8.26 8.30 8.25 8.30 8.30 8.30 | 309 360 365 365 320 425 335 340 ER PERI 284 | 18 17 16 16 16 16 16 19 17 OD. Nov. 16 | Acid | 0.1913 0.1779 0.1640 0.1620 0.1245 0.1723 0.1652 0.1932 7 1) 12, | 18 40 16 16 28 27 10 77 | 1.5 0 2.25 2.5 2.7 |

| | | Table | 11 500 | and Dog. | Summa | ant of 4 | nativité 16 | tais. | |
|-------------|---|---|---|---|---|---|--|---|---|
| No. | Period. Condition. Normal Dosage Recovery | Total, grammes, 48.1456 43.6395 27.9053 | Ammonia. grammes 1.6435 1.3504 0.8521 | Urinary Urea, grammes. 38.9304 37.8996 24.6448 | NIIR. 61N. Allantoin, gramme. 1.0943 0.7130 0.5049 | Unic acid. gramme. 0.0426 0.0342 0.0245 | Purin bases, gramme 0.0258 0.0696 0.016: | Creatinin, gramme. 0.8482 0.7900 0.5600 | Undete mined, gramme. 5.5608 2.7827 1.3029 |
| | | | | DWLY | AVERAGES. | | | | |
| II. III. | | 4.6509 5.4549 5.3495 | 0.1420 0.1688 0.1820 | 4 3256 4 7374 4 1075 | 0.1216 0.0891 0.0841 | 0.0047 0.0043 0.0041 | 0.0028 0.0087 0.0027 | 0.0942 0.0988 0.0933 | 0.6179 |
| | | | R | ELATION TO TH | E TOTAL NI | ITROGEN. | | | |
| | | | l'er cent | Per cent. | Per cent. | Per cent. | Per | Per cent. | Per |
| II. III. | Normal Dosage Recovery | | 3.41 3.09 3.05 | 80.90 86.86 88.35 | 2.27 1.63 1.81 | 0.09 0.08 0.09 | 0.05 0.16 0.00 | 1.76 | 0.37 4.6 |

"The urine of this period contained a small quantity of the liquid portion of the vomit.
"Womited sixteen minutes after injection. A few c. c. of the liquid part of the vomit were unavoidably mixed with some of the

Discussion of the chemical results of the experiments with animals on medium planes of protein nutrition (first and second dogs, Tables

The injection of small doses of cyanide in the case of the first dog (Period II, Tables I and II) caused a decrease in the average daily excretion of total nitrogen in the urine. There was a corresponding decrease in the amounts of all the various forms of nitrogen named in the Tables (I and II), except that of the purin bases, which was increased.

The analytic results for the third period (Tables I and II), in which the daily doses of the cyanide were 3 mgs. per kilo, are not uniform enough to tell a definite or concordant story. The period was perhaps comparatively too short for the full registration of the effects that may have been induced by the cyanide. Then, too, contamination of the urine with vomit may have introduced some of the apparent uncertainties of significance in the results.

In the fourth period, during which the doses of cyanide were $3\frac{1}{2}$ mgs. per kilo, the average daily excretion of total nitrogen was less than that of the first or normal period. This was also true of the various other forms of nitrogen, except the "undetermined nitrogen," which increased in amount in this period. The daily amount of nitrogen in purin bases, which had risen considerably in the first dosage period and fallen in the next, was so small as to be practically nil in the third dosage period.

If cyanide has a tendency, as claimed by previous observers, to increase nitrogenous elimination, we

urine in the receiver. The solid vomitus we afterward when offered to the animal 16 Vomited twenty minutes after injection. Womited seven minutes after injection. The solid vomitus was eaten again, shortly Ate all vomitus late

should expect to find an exhibition of this effect in the fourth period, during which comparatively large doses of cyanide were given, unless the cyanide treatment in the preceding periods had altered the basis for further comparisons. As indicated above, however, decrease rather than increase was the rule, except in the third period. In the after period slight increases in most of the figures in the tables are to be noted.

During the period of cyanide injection in the experiment on the second dog, the average daily quantities of total nitrogen, of the nitrogen of urea, of that of purin bases, and of creatinin, were increased, while the quantities of nitrogen of ammonia, allantoin, uric acid, and the undetermined fraction were decreased.

The average dose of cyanide for this dog was only about 2 mg. per kilo. No vomiting ever occurred, and from all outward appearances the effects of the treatment were much less marked than in the case of the first. In spite of this fact, however, the total nitrogen elimination from this dog increased, but from the first dog decreased, with cyanide treatment.

Histological-First and second dogs.

Microscopical examination of the viscera of these dogs showed the following:

First dog. Kidney-The uriniferous tubules contained a large amount of degenerated cellular matter, which was granular in appearance. epithelium of the convoluted tubules was slightly swollen and irregular in outline, with a few areas of degeneration. There was slight proliferation of connective tissue along the course of the small bloodvessels.

Liver—This was the seat of a degenerative process of irregular intensity in its distribution, with no definite relation to the periphery of the lobule or the central vein. The degeneration was albuminous in type and moderate in intensity-many liver cells being simply the seat of extreme vacuolization. The nuclei were unchanged.

Heart-Normal. Spleen-Normal. Normal.

Second dog. Kidney-There was moderate albuminous degeneration of the tubular epithelium, which was most marked in the convoluted tubules. Some contained casts. There were numerous areas of small round cell proliferation along the bloodvessels and about the glomeruli. A few of these areas were infiltrated with pus cells.

Liver-There was well marked albuminous degeneration, uniform in distribution, with marked vacuolization of the cells. There was no congestion. The nuclei were unchanged.

Heart-Normal. Spleen-Normal. Pancreas-Normal.

²⁸Vomited twenty minutes after injection. Ate all vomitus later.

¹⁹Vomited repeatedly, beganning eighteen minutes after injection, ending fifteen minutes afterward. Ate all vomitus later.

²⁰Vomited eighteen, and again thirty-four minutes after injection. Ate all vomitus later.

²¹Vomited several times thirty minutes after injection. Ate all vomitus shortly afterward.

²²Diarrhoca occurred near the end of the day.

Summaries of observations and results in the experiments with animals on low planes of protein nutrition (Tables V-X).

Table V .- Third Dog. Preparatory Period.

Table showing the decreasing quantities of meat fed the animal daily in bringing it gradually down to a low plane of protein nutrition. (Initial daily diet: Meat, 96 grammes; cracker meal, 32 grammes; lard, 24 grammes; bone ash, 8 grammes; water, 280 c.c.)

| | Body weight, | Weight of meat |
|---------|--------------|------------------|
| Date. | kilos. | grammes. |
| July 10 | 8.00 | 96 |
| July 11 | 8.00 | 96 |
| July 12 | 7.93 | 96 |
| July 13 | 7 9- | 96 |
| July 14 | 8 00 | 19 |
| July 15 | 8 00 | 86 |
| July 16 | 7.92 | 81 |
| July 17 | 7.88 | 76 |
| July 18 | 7.90 | 71 |
| July 19 | 7.90 | 66 |
| July 20 | 7.92 | 61 |
| July 21 | 7.86 | 56 |
| Inly 22 | 7.82 | ²⁵ 56 |

The only ingredient in the diet that was subject to quantitative change during the preparatory period was the meat. Two days previous to the beginning of the fore period and from then on to the end of the experiment, the quantity of meat fed daily was 56 grammes. The other ingredients were as follows: Cracker meal, 32 grammes; lard, 24 grammes; bone ash, 8 grammes; water, 280 c.c.

Table VI.—Third Dog.

First Period .- Normal Conditions, July 23 to 28, 1907.

| Day No. | Body weight, kilos, | Urine. Volume, c. c. | Urine. Sp. Gr. 1.0xx. | Urine. Reaction, litmus, | Utine. Ammonia nitrogen. grammes. | dry, | Potassium eyan per kilo, milligrammes. |
|-------------|--|--|-----------------------------|--------------------------------|--|---------------------------------|--|
| 3 4 5 | 7.81 7.78 7.74 7.82 7.81 7.73 | 290 260 290 195 245 340 | 10 13 10 11 | Acid. | 0.1135 0.1211 0.1191 0.1122 0.0973 0.0978 | 10 27 11 8 22 18 | |
| SECOND P | FRIOD. | -EFFECT | | Potassium | CYANIDE, JU | LY 29 | 9 TO |

Acid.

0.2946

7.67 7.65 7.65 7.65 20 23 39 Alkaline 295 255 1.4606 0.1986 Alkaline

THIRD PER TER PERIOD, AUGUST 10 13. 7.58 Acid. 0.1404 Alkaline. 0.0501 0.1803 0.0982 Acid.

²⁸About 15 grammes per kilo; approximately 0.53 gramme of nitrogen per kilo.

²⁸About 12 grammes per kilo; approximately 0.42 gramme of nitrogen per kilo.

²⁸About 12 grammes per kilo; approximately 0.42 gramme of nitrogen per kilo.

²⁸This quantity of potassium cannot caused vomiting about one-half hour after injection, also mild diarrhea, followed by marked prostation. Later the animal appeared to be normal and ate all of the vomitin.

Table VII. Third Dog. Summary of Analytic Totals.

| | | | | URINARY | NITROGEN. | | | | Undete |
|--------------------|------------------------------|-------------------------------|----------------------------|-------------------------------|----------------------------|----------------------------|--------------|----------------------------|----------------------------|
| | Period. Condition. | Total, grammes. | Ammonia, grammes. | Urea, grammes. | Allantoin, gramme. | Uric acid, gramme. | Purin bases. | Creatinin. gramme. | mined, gramme. |
| I. II. III. | Normal Dosage Recovery | 13.7550 20.8930 18 5440 | 0.6825 2.2241 0.9647 | 11.8405 10.5367 15.6654 | 0.2119 0.0962 0.2709 | 0.0279 0.0467 0.0461 | | 0.3062 0.3225 0.4287 | 0.6260 1.6368 1.1682 |
| | | | | Divies | AVERAGES. | | | | |
| I. III. III. | Normal Dosage Recovery | 2.2925 2.6116 2.3180 | 0.1138 0.2780 0.1206 | 1.9734 2.0671 1.9582 | 0.0353 0.0120 0.0339 | 0.0046 0.0058 0.0057 | | 0.0610 0.0403 0.0536 | 0.1043 0.2046 0.1460 |
| | | | Re | LATION TO TM | E TOTAL NI | TROGEN | | | |
| | | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| I. II. III. | Normal Dosage Recovery | | 4.96 10.64 5.21 | 86.10 79.30 84.50 | 1.54 0.46 1.46 | 0.21 0.22 0.25 | | 2.66 1.54 - 31 | 4.55 7.85 6.30 |

Table VIII .- Fourth Dog.

Preparatory Period, October 11 to November 2. 1907.

Table showing the diminishing quantities of meat fed to the animal in bringing it gradually down to the low nitrogen plane. (Initial daily diet: Meat, 160 grammes; cracker meal, 40 grammes; lard, 30 grammes; bone ash, 10 grammes; water, 350 c.c.)

| Pate, | Body weight, kilos. | Meat, grammes. | Date. | Rody weight, kilos. | Meat, grammes. |
|---|--|--|---|--|--|
| Oct. 11 Oct. 12 Oct. 13 Oct. 14 Oct. 15 Oct. 16 Oct. 16 Oct. 16 Oct. 16 Oct. 17 Oct. 18 Oct. 19 Oct. 19 Oct. 19 Oct. 19 Oct. 19 Oct. 20 Oct. 21 | 9.48 9.26 9.05 9.10 9.06 8.90 8.89 8.87 8.73 8.79 | 160 28155 150 145 140 135 130 125 120 115 | Oct. 22. Oct. 23. Oct. 24. Oct. 25. Oct. 26. Oct. 27. Oct. 28. Oct. 29. Oct. 30. Nov. 1 | 8.76 8.64 8.75 8.61 8.58 8.53 8.57 8.59 8.39 | 105 29100 95 90 85 80 75 70 70 |

The meat was the only ingredient that was subject to quantitative change during the preparatory period. At the beginning of the fore period, and throughout the whole experiment thereafter, 70 grammes of meat were given daily with the following amounts of the remaining ingredients of the diet: Cracker meal, 40 grammes; lard, 30 grammes; bone ash, 10 grammes; water, 350 c.c.

Table IX.—Fourth Dog.

FIRST PERIOD -NORMAL CONDITIONS, NOVEMBER 3 TO 7, 1907.

| | | | | | | | 9 |
|----------|----------------|----------------|--------|-------------------|---|-----------------|--------------|
| | lit, | | | | | | cyani re, |
| | E. | | | ei . | .E . | dry | Ē.Ē |
| ž | ≥ | 2 E | 28.2 | 5.55 | Urine. Ammonia nitrogen, rammes. | m. | cilo |
| Day | Body kilos, | Unine Volum | -£0.1 | Reac | Urine. | Faces, gramm | \$ T.E |
| De | Bo | Ēŏ J | Sp. | 525 | Urine. Ammor nitroge gramme | E R | - 2.6 |
| 1 | 8.41 | 423 | II | Acid. | 0.2085 | 19 | |
| 2 | 8.52 | 200 | | Faintly alkaline. | 0.0412 | 28 | |
| 3 | 8.48 | 360 | II | Acid. | 0.1637 | 14 | |
| 4 | 8.39 | 394 | 10 | 44 | 0.1545 | 19 | |
| 5 | 8.33 | 386 | 12 | | 0.1945 | 15 | |
| SECOND P | ERIOD | -Effect | | POTASSIUM CYA | NIDE, NO | VEMB | er S |
| | | | TO I | 3, 1907. | | | |
| 6 | 8.29 | 300 | II | Acid. | 0.1440 | 29 | 1 |
| 7 | 8.28 | 335 | 10 | 6.6 | 0.1233 | II | 1.5 |
| 8 | 8.25 | 335 | II | 4. | 0.1360 | 30 | 2. |
| 9 | 8.20 | 254 | 07 | 44 | 0.0654 | 18 | 31 2 . 5 |
| 10 | 8.29 | 311 | 13 | 44 | 0.1545 | 15 | 3-2 832 |
| I I | 8.23 | 366 | 11 | ** | 0.1905 | 20 | 0-2 |
| THIRD | | D.—AFT | ER PER | | 14 TO 20, | | |
| 12 | 8.22 | 310 | 10 | Acid. | 0.1596 | 20 | |
| 13 | 8.21 | 316 | 09 | 66 | 0.0987 | 6 | |
| 14 | 8.13 | 370 | 1.2 | | 0.2006 | 14 | |
| 15 | 8.16 | 307 | II | 44 | 0.1228 | 9 | |
| 16 | 8.14 | 360 | 10 | | 0.1400 | 11 | |
| 17 | 8.16 | 285 | 06 | Faintly acid. | 0.1376 | 36 | |
| 18 | 8.19 | 386 | 05 | Acid. | 0.1267 | 15 | |

Table X. Fourth Dog. Summary of Analytic Totals.

| | Period. | | | URINAR | Y NITROGEN. | | | | Undeter- |
|-------------------|--------------------------------|-------------------------------|----------------------------|-------------------------------------|---|----------------------------|----------------------------|----------------------------|----------------------------|
| | Condition. | Total, grammes. | Ammonia, gramme. | Urea, grammes. | Allantoin, | Uric acid, gramme. | Purin bases, gramme. | Creatinin, gramme. | mined, gramme. |
| 11. 111. | Normal Dosage Recovery | 14.6555 16.1440 18.4113 | 0.7624 0.8143 0.9860 | 12.7303 13.0203 15.5368 | 0.2934 0.3541 0.5753 | 0.0294 0.0317 0.0323 | 0.0194 0.0209 0.0503 | 0.3033 0.3802 0.6284 | 0.5173 1.5225 0.6022 |
| I. II. 111. | Normal . Dosage Recovery | 2.9311 2.6907 2.6302 | 0.1525 0.1357 0.1409 | DAILY 2.5461 2.1700 2.2195 | AVERAGES. 0.0587 0.0590 0.0822 | 0.0059 0.0053 0.0046 | 0.0039 0.0035 0.0072 | 0.0607 0.0634 0.0898 | 0.1035 0.2538 0.0860 |
| | | | R | ELATION TO T | HE TOTAL NI | TROGEN. | | | |
| | | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| II. III. | Normal Dosage Recovery | | 5.20 5.06 5 36 | 86.90 80.60 84.40 | 2.01 2.19 3.12 | 0.20 0.20 0.18 | 0.13 0.13 0.27 | 2.07 2.36 3.42 | 3.53 9.42 3.27 |

³⁷The differences between the results of the determinations of the alloxuric nitrogen and the uric acid were so slight as to warrant the conclusion that the uric acid nitrogen was the only purin nitrogen eliminated in quantities sufficiently large for consideration.

[&]quot;About 17 grammes per kilo; approximately 0.6 gramme of nitrogen per kilo.

²⁹About 11.5 grammes per kilo; approximately 0.4 gramme of nurogen per kilo.

³⁰About 8.25 grammes per kilo; approximately 0.3 gramme of nitrogen per kilo; average per lation of the first half hour after injection. Refused all offers of vomitus, but ate the same with the regular meal, on the following da Vomited within twenty minutes after injection. Ate all of vomitus later:

"Vomited about fifteen minutes after injection. Ate the vomitus with the meal on the following day."

Discussion of the chemical results of the experiments with animals on low planes of protein nutrition (third and fourth dogs, Tables V-X).

The average daily total urinary elimination of nitrogen in these two experiments failed to show a concordant tendency. In the case of the third dog (Tables VI-VII) there was a slight increase during the cyanide period, while, on the other hand, there was a decrease in the case of the fourth dog (Table IX-X) during the cyanide period. nitrogen of ammonia was markedly increased in the case of the third dog during the cyanide period (Tables VI-VII), but was diminished slightly in the experiment on the fourth dog (Tables IX-X). The average daily elimination of urea was very slightly increased during the cyanide period in the experiment on the third dog, but in terms of per cent. of the total nitrogen it decreased markedly. During the same period in the experiment on the fourth dog, however, the average daily amount of urea nitrogen, as well as its per cent. of the total nitrogen, decreased decidedly. The other notable result of these two experiments was the sharp increase in the average daily amount of the undetermined nitrogen in each experiment. The remaining results of these two experiments are diametrically opposed to each other.

Histological. Third and fourth dogs.

The microscopical examination of the viscera of these dogs showed the following:

Third dog. Kidney-There was congestion of the cortical area and slight swelling and irregularity of outline of the cells of the convoluted tubules.

Liver-This was the seat of a diffuse degenerative process, uniform in intensity in all parts of the liver lobules. The nuclei were intact, but the cytoplasm was the seat of an extreme albuminous degeneration, which was so excessive that only a few areas of granular cytoplasm remained and the outlines only of the cells persisted. There were irregular areas of congestion.

Heart-Normal. Spleen-Normal. Pancreas-

Normal.

Fourth dog. Kidney-There was slight swelling of the epithelial cells of the cortical tubules, with irregularity of outline. There was a little exudate. Scattered irregularly through the cortex were areas of small round cell infiltration. Most of these areas contained a number of pus cells. They occurred along the course of the bloodvessels, but the glomeruli were not involved.

Liver-There was well marked albuminous degeneration, uniform in distribution, with marked vacuolization of the cells. There was no congestion.

The nuclei were normal.

Heart-Normal, Spleen-Normal, Pancreas-Normal.

Summaries of observations and results in the experiments with animals on high planes of protein nutrition (Tables XI-XVI).

Table XI.—Fifth Dog.

Preparatory period.—Table showing the increas-

ing quantities of meat fed the animal in raising it to the high nitrogen plane.

(The initial diet of this animal consisted of meat, 120 grammes; cracker meal, 32 grammes; lard, 24 grammes; bone ash, 10 grammes; water, 280 c.c.)

| | | Body weight, | Weight of meat, |
|-------|----|--------------|-------------------|
| Date. | | kilos. | grammes. |
| tuly | | 8.25 | 243.20 |
| July | 6 | 8,21 | 1441 |
| July | | 8.08 | 160 |
| July | 8 | 7.92 | 180 |
| July | 9 | 7.85 | 200 |
| July | 10 | 7.92 | 220 |
| Tuly | 1 | 7.90 | 240 |
| July | 12 | 7.94 | 240 |
| | 13 | 5.00 | 3.2.10 |
| July | 14 | 5 (1/) | 240 |
| July | 15 | | 260 |
| | 16 | 8.03 | 280 |
| July | 17 | | 300 |
| July | 18 | 8 13 | 3.26 |
| July | 19 | 8.17 | 340 |
| July | 20 | | 360 |
| | 21 | 8.31 | 380 |
| July | 22 | | ³⁶ 38n |

The meat in the daily diet was increased twenty grammes each day, excepting on July 12th, 13th, and 14th, ending with July 21st, when the daily amount was 380 grammes. The other ingredients remained constant in quantity throughout the entire experiment.

Table XII.—Fifth Dog. FIRST PORT D. NORMAL CONDITIONS, JULY 23 TO 29, 1907

| Dav No. | Body weight, kilos, | Urine Volume, e-e. | Urme Sp. Gr. Loxx. | Urine. Reaction | litmus. | Faces dry. grammes | Potassium evanide per kilo, milligrammes. |
|----------------------------------|--|---|--|--------------------|---------|--|---|
| 1 3 4 · · · · 5 · · · · | 8 37 8 40 8 30 8 8,48 9,53 8 8,58 8 8,63 | 540 418 450 410 400 475 440 | 25 27 23 27 27 24 24 | Faintly | acid. | 53 37 21 52 41 36 49 | |
| STONE | PERIOD | EFFECTS OF | Potas | SIUM CY | ANIDE. | July | 30 T |

| 20070 | PERIOD | POTASSIUM UST 2, 1907. | | July | 30 | To |
|-------|--------|---------------------------|---------|------|----|-----|
| 87 | 8 65 | | Neutral | 5.3 | | 8×1 |

THIRD PERIOD.—RECOVERY FROM EFFECTS OF POTASSIUM CYANIDE

| | | 221111 | 0 | | | |
|------|--------|---------------------------------------|----------|------------------|-----|--|
| 2 | . 8.57 | 195 ⁴² 92 ⁴³ | 33 32 | Alkaline Acid | 18 | |
| 13.4 | 8 65 | 340 | 36 | Alkaline | 68 | |
| 1.1 | 8.72 | 440 | 26 | Acid. | 0 | |
| . 5 | 8.86 | 30045 | 27 | ** | 40 | |
| . 6. | 00, | c m o 46 | 2.4 | Amulantaria | 4.0 | |

'Mout is grammes per kilo; approximately 0.53 gramme of ni-tionen per kilo.

'Mout is grammes per kilo, approximately 1.05 gramme of ni-tionen per kilo.

'Moot it grammes per kilo, approximately 1.58 gramme of ni-troren per kilo.

'The small doses of cyanide injected on the eighth and tenth days (July 30th and August 1st) set up violent disturbances (an-arently because of this high protein diet), so that it was impossible to continue the evanide treatment without decreasing the protein in the food. The daily quantity of meat was accordingly lowered to the food introgen per kilo), on the seventeenth day (August 8th), and this amount was fed daily thereafter to the end of the experi-

c apparent effects on iting occurred some time after feeding. All of the vomitus was eaten later

aten later.

**No agrant effects

**Vomital during the night No vomit in the urine

**Vomital during the night No vomit in the urine

**Vomital during the mild diarrhea.

**Vomital after feeding. Urine contained fluid vomit. Ate solid

emitis later
"Venuted - Urine contained true of fluid comit

| Fourt | MEA | RIOD | PREPARATO | RY PERIOD DIET, AU | WITH REDUCT | ED AMO | UNT OF | | | | | SIUM UNANIDE DE PIEMBER 4, 1907 4 | | Rr As |
|---|---------|---|---|---|---|---|--|-----------|--|---|---------------------------------------|---|---|--|
| | | | | | | | yan ale | | 8.97 8.98 8.97 | 415 510 500 | 22 21 23 | Veid | 24 35 40 | 45 2 2 |
| | | weight | | | | 2. | - i | 44 | 8.97 | 475 520 | 2 U 2 I | | 50 | 2 |
| S. S. | | wei | ž | - 4 | . 5 , | p sau | Star Tal | | ERIOD —] | NORMAT. C | ONDITION | NS. SEPTEMBER 5 | TO 10 | 100" |
| | | dy 08. | rine olume | S C S | i ta | Fæers, gramme | Ex Re | | 9.10 | | 26 | Acid | 1) | , -9-/ |
| Day | | Body kilos. | 2000 | D.S. | 구종표 | Fac | Per | 46 | 9.04 | 345 502 | 21 | Faintly alkaline | 55 | |
| 17 | | 8.75 | 420 | 23 | Amphoteric | 40 | | 4 | 9.06 | 505 | 21 | Faintly acid | 0 | |
| 18 | | 8.79 | 320 | 30 | 16 | 51 | | 18 | 9.10 | 500 435 | 22 | Acid | 23 50 | |
| 19 | | 8.85 | 432 | 19 23 | 6 | 48 | | :) | 9.10 | 485 | 20 | Amphoteric | 5.3 | |
| 20 | | 8.85 | 432 | 18 | ** | 51 | | Tours Dun | ron F | nnreme or | Ports | SIUM CYANIDE I | v 35 | DERATE |
| 22 | | | 390 | 25 | 44 | 37 | | TENTH TEN | Do: | SES, SEPTE | MBER 11 | TO 15, 1907 | 70 7486 | DEKAL |
| 23 | | 8.00 | 380 445 | 22 | Faintly acid | 57 37 | | | | | | | | 4 |
| 25 | | | 465 | 23 | 11 11 | 37 | | | | | | | | = |
| P | | | | | | | | | | | | | | |
| PIFTH | PR | 10DE | FFFCTS | | UM CYANIDE, | Avors | 1 1- 1 | | | | | | | y all |
| | | | | 18, 1907. | | | | | ght. | | | | * | L cyall |
| 26. | | 8.73 | 345 | 18, 1907. 21 | Alkaline | 22 | (*) 5 | 2 | reight, | , | | ė. | day. | um cyall |
| 26. 27 | | 8.73 8.88 | 345 440 | 18, 1907. 21 21 | Alkaline | 22 | (*) 5 0 | Ž | weight. | e. me, | 9 <u>9</u> % | r tion. | of day. | ssrum cyan kilo, vi mune |
| 26. 27 Six | | 8.73 8.88 ERIOD | 345 440 -Normal | 18, 1907. 21 21 Conditions | Alkaline . August 19 | 22 50 TO 23. | (*) 5 0 | ay No. | ody weight, los. | rine. olume, c. | rine. a. Gr. a. vx. | rine, eaction, mus | ammes | otassum cyan rr kilo, dhar muse |
| 26. 27 | | 8.73 8.88 ERIOD | 345 440 | 18, 1907. 21 21 | Alkaline August 19 Faintly acid Amphoteric | 22 | (*) 5 0 | Day No. | Body weight, kilos. | Urine. Volume, c. c. | Utine. Sp. Gr. | Urine. Reaction, litmus | Faces, dry, grammes | Potassnam cyan per kilo, mdhwi mune |
| 26. 27. 51\ 28. 29. 30 | | 8.73 8.88 ERIOD 8.89 8.90 8.90 | 345 440 -Normal 460 450 445 | 18, 1907. 21 21 CONDITIONS 21 21 20 | Alkaline August 19 Faintly acid Amphoteric | 22 50 10 23. 57 39 45 | *) 5 0 | Day No. | Body weight, 8 kilos. | 430 | 20 | Faintly acid | S. Faces, dry, | Potassum cyan per kilo, |
| 26. 27. 51. 28. 29. 30. 31. | н Р | 8.73 8.88 ERIOD 8.89 8.90 8.90 8.93 | 345 440 -Normal 460 450 445 455 | 18, 1907. 21 21 CONDITIONS 21 21 20 20 | Alkaline August 19 Faintly acid Amphoteric Faintly acid | 22 60 TO 23. 57 39 45 30 | (*) 5 0 19*** | 52 Day | Q 20 Q.20 | '430 410 | 20 24 | Amphoteric | 0.4 | Potassum cyan per kilo, |
| 26. 27 S1X 28. 29. 30. 31. 32. | н Р | 8.73 8.88 ERIOD 8.89 8.90 8.90 8.93 8.96 | 345 440 -Normal 460 450 445 455 430 | 18, 1907. 21 21 CONDITIONS 21 21 20 20 22 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric | 22 60 TO 23. 57 39 45 30 35 | (*) 5 0 | 52 | 9 20 9.20 9.21 | 430 410 393 | 20 | | | Potassum cyan per kilo, |
| 26. 27. 51. 28. 29. 30. 31. | н Р | 8.73 8.88 ERIOD 8.89 8.90 8.90 8.93 8.96 | 345 440 -Normal 460 450 445 455 430 -Effects | 18, 1907. 21 21 CONDITIONS 21 21 20 20 22 OF POTASS | Alkaline August 19 Faintly acid Amphoteric Faintly acid | 22 60 TO 23. 57 39 45 30 35 IN REI | (*) 5 0 19:** | 52 Day | Q 20 Q.20 | '430 410 | 20 24 25 | Amphoteric Faintly alkaline | 54 40 | Potassum cyan per kilo, cere e e milher mune |
| 26. 27 S1X 28. 29. 30. 31. 32. | н Р | 8.73 8.88 ERIOD.— 8.89 8.90 8.90 8.93 8.96 ERIOD.— SM 8.92 | 345 440 -Normal 460 450 445 455 430 -Effects All Doses | 18, 1907. 21 21 CONDITIONS 21 20 20 20 22 OF POTASS 5, AUGUST 2 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric IUM CYANIDE 14 TO 30, 1907 Alkaline | 22 50 TO 23. 57 39 45 30 35 IN Res | CONTRACTOR LATIVELY | 51 | 9 20 9.20 9.21 9.19 9.21 | '430 410 393 513 475 | 20 24 25 22 23 | Amphoteric Faintly alkaline Amphoteric | 54 40 48 33 | Potassum cyan per kilo, ter eete milber muse |
| 26. 27. 28. 29. 30. 31. 32. SEVEN | н Р | 8.73 8.88 ERIOD.— 8.89 8.90 8.90 8.93 8.96 ENIOD.— SM 8.92 9.00 | 345 440 -Normal 460 450 445 455 430 -Effects (ALL Doses 485 | 18, 1907. 21 21 CONDITIONS 21 21 20 20 22 OF POTASS 3, AUGUST 2 22 20 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric IUM CYANIDE 14 TO 30, 1907 Alkaline Amphoteric | 22 60 TO 23. 57 39 45 30 35 IN Res | (*) 5 0 1907 LATIVELY | 51 | 9 20 9.20 9.21 9.19 9.21 PERIOT | '430 410 393 513 475 | 20 24 25 22 23 PERIOD, | Amphoteric Faintly alkaline Amphoteric September 16 To | 54 40 48 33 | Potassum cyan per kilo, ter coc, milhyr mins |
| 26. 27. 28. 29. 30. 31. 32. SEVEN. | и Р | 8.73 8.88 ERIOD.— 8.89 8.90 8.90 8.93 8.96 ERIOD.— SM 8.92 | 345 440 -Normal 460 450 445 455 430 -Effects All Doses | 18, 1907. 21 21 CONDITIONS 21 20 20 20 22 OF POTASS 5, AUGUST 2 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric IUM CYANIDE 14 TO 30, 1907 Alkaline | 22 50 TO 23. 57 39 45 30 35 IN Res | CONTRACTOR LATIVELY | 51 | 9 20 9.20 9.21 9.19 9.21 | '430 410 393 513 475 | 20 24 25 22 23 | Amphoteric Faintly alkaline Amphoteric SEPTEMBER 16 To Acid | 54 40 48 33 | Potassum cyan per kilo, per co, mulhar mun |
| 26. 27. SIN 28. 29. 30. 31. 32. SEVEN 33. 34. 35. 36. 37. | и Р | 8.73 8.88 ERIOD.— 8.89 8.90 8.90 8.93 8.96 PERIOD.— SM 8.92 9.00 8.92 8.92 8.94 8.94 | 345 440 -Normal 460 450 445 455 430 -Effects (ALL Doses 485 490 525 455 320 | 18, 1907. 21 21 CONDITIONS 21 20 20 20 22 OF POTASS 5, AUGUST 2 22 20 15 13 23 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric LUM CVANIDE 4 TO 30, 1907 Alkaline Amphoteric Acid Faintly acid Acid | 22 00 10 23. 57 39 45 39 35 1N Rel 37 37 39 39 59 | 1.5 0 1.6 - 7 LATIVELY | 51 | 9 20 9.20 9.21 9.19 9.21 PERIOR 9.18 9.20 9.25 | '430 410 393 513 475 0.—After 485 455 420 | 20 24 25 22 23 Period, | Amphoteric Faintly alkaline Amphoteric SEPTEMBER 16 To Acid | 54 40 48 33 0 20, 52 35 29 | Potassum cyan per kilo, |
| 26. 27. SIN 28. 29. 30. 31. 32. SEVEN 33. 34. 35. 36. | и Р | 8.73 8.88 ERIOD.— 8.89 8.90 8.90 8.93 8.96 PERIOD.— SM 8.92 9.00 8.92 8.92 | 345 440 -Normal 460 455 455 430 -Effects ALL Doses 485 490 525 455 | 18, 1907. 21 21 CONDITIONS 21 20 20 22 OF POTASS A UGUST 2 22 20 15 13 | Alkaline August 19 Faintly acid Amphoteric Faintly acid Amphoteric August Canaline At 70 30, 1907 Alkaline Amphoteric Acid Faintly acid | 22 60 TO 23. 57 39 45 39 35 IN Rei | 100-7 100-7 100-7 100-7 100-7 100-7 100-7 100-7 100-7 100-7 | 51 | 9 20 9.20 9.21 9.19 9.21 PERIOT 9.18 9.20 | '430 410 393 513 475 0.—After 485 455 | 20 24 25 22 23 PERIOD, | Amphoteric Faintly alkaline Amphoteric SEPTEMBER 16 To Acid | 54 40 48 33 0 20, 52 35 | Potassum cyan |

| Table XIII. | Fifth Dog. | . Summary | of Analytical | Totals. |
|-------------|------------|-----------|---------------|---------|
|-------------|------------|-----------|---------------|---------|

| | | | | | | | - | | |
|---------------------------------|--|---|--|---|--|--|--|--|--|
| | | | | URINA | RY NITROGEN | | | | Undeter- |
| | mmonia, Conditions. | Total, grammes. | Period. grammes. | Urea, gramme | Allantoin, gramme | Uric acid, gramme. | Purin bases. gramme. | Creatinin, gramme. | |
| VI. VII. IX. X. XI. | Normal Dosage Recovery Dosage Recovery | 49.9520 66.8012 60.6486 47.5932 53.5932 | 1.7669 3.7047 2.1259 1.7958 2.0168 | 45.3227 59.5497 54.8448 44.4831 48.9210 | 0.3312 0.2028 0.4291 0.5206 0.3120 | 0.0364 0.0482 0.0456 0.0430 0.0369 | 0.0469 0.0383 0.0417 0.0389 0.0656 | 0.6130 0.7415 0.7445 0.5812 0.6074 | 1.8349 2.5159 2.4171 0.1306 1.6335 |
| | | | | DAILY | Averages. | | | | |
| VI. VII. IX. X. XI. | Normal Dosage Recovery Dosage Recovery | 9.9904 9.5430 10.1081 9.5186 10.7186 | 0.3534 0.5294 0.3543 0.3592 0.4034 | 9.0645 8.5071 9.1408 8.8966 9.7842 | 0.0662 0.0290 0.0715 0.1041 0.0624 | 0.0073 0.0069 0.0076 0.0086 0.0074 | 0.0094 0.0055 0.0069 0.0078 0.0131 | 0.1226 0.1059 0.1241 0.1162 0.1215 | 0.3670 0.3594 0.4028 0.0261 0.3267 |
| | | | Rε | LATION TO T | HE TOTAL NI | TROGEN. | | | |
| | | Per cent. | Per cent. | Per cent. | Pei cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| VI. VII. IX. X. XI. | Normal Dosage Recovery Dosage Recovery | | 3.54 5.55 3.51 3.77 3.76 | 90.73 89.14 90.40 93.50 91.25 | 0.66 0.30 0.71 1.09 0.58 | 0.07 0.07 0.07 0.09 0.07 | 0.09 0.06 0.07 0.08 0.12 | 1.23 1.11 1.23 1.22 1.14 | 3.67 3.77 3.98 0.27 3.05 |

Table XIV .- Sixth Dog.

Preparatory period.

Table showing the increasing quantities of meat fed the animal daily in raising it gradually to a high plane of protein nutrition.

(The initial daily diet was made up as follows: Meat, 108 grammes"; cracker meal, 36 grammes; lard, 27 grammes; bone ash, 9 grammes; water, 315 c.c.)

| 47Vomited | within the hour | following injection. | Some of the fluid |
|------------|------------------|----------------------|-------------------|
| | | . The treatment was | |
| a new norm | al period inaugu | rated on the twenty- | eighth day. |

"Vomited during the night. Urine contained fluid vomit.

⁵⁰About 13 grammes per kilo; approximately 0.46 gramme of ni-trogen per kilo.

| Date | Body weight, kilos, | Weight of meat, grammes. | Date. | Rody weight, kilos | Weight of meat, grammis |
|---|--------------------------------------|--|---------|--|--|
| Oct. 12 Oct. 13 Oct. 14 Oct. 15 Oct. 16 Oct. 17 | 8.10 8.09 8.00 8.00 8.00 | 148 148 168 188 208 228 | Oct. 19 | 7.95 8.04 8.00 8.00 8.07 8.10 | 268 308 308 328 34 34 5434 |

⁵¹About 16 grammes per kilo; approximately 0.56 gramme of nitrogen per kilo.

[&]quot;No analytical work was done on the urine of this period because of the contamination of the urine with fluid vomit.

SOn this day the bone ash was increased to 15 grammes. All the other ingredients except the meat remained constant.

About 32 grammes per kilo: approximately 1.12 gramme of nitrogen per kilo.

[&]quot;About 43 grammes per kilo; approximately 1.51 gramme of metrogen per kilo.

The daily portion of meat was increased 20 grammes per day ending with October 23d, on which day the weight of meat in the diet was 348 grammes. This weight of meat was fed daily, together with the weights of the rest of the ingredients as specified above, to the end of the experiment. The animal was fed this diet from October 23d to November 2d (eleven days), before the actual observation of normal conditions was commenced.

Table XV .- Sixth Dog.

PIRST PERIOD .- NORMAL CONDITIONS, NOVEMBER 3 TO 7, 1907.

| Day No. | Body weight, kilos. | Unine. Volume, c. c. | Urine, Sp. gr., 1.0xx | l'rine. Reaction, litmus. | Urine. Ammonia nitrogen, gramme. | Fæces, dry, grammes. | Potassium eyanule, per kilo, milligrammes |
|--------------------|--|---|--|---------------------------------|--|--|---|
| 1 2 3 4 | 8.78 8.71 8.73 8.74 8.80 | 345 448 413 503 390 | 25 24 26 23 26 | Acid. | 0.2747 0.2871 0.2751 0.3400 0.3076 | 33 53 43 11 41 | |
| Second P | ERIOD - | -Effect | | POTASSIUM (| YANIDE, No | OVEME | ER 8 |
| 6 \$ 9 10 | 8.80 8.81 8.95 8.92 9.00 8.96 | 467 432 355 423 302 457 | 25 25 26 24 27 25 | Acid. | 0.3147 0.3394 0.2594 0.4495 0.2448 0.3254 | 26 31 15 33 34 35 | 0.5 1.5 1.75 2.5 |
| THIRD | Perio | D.—AFTE | R PEF | tiod, November | R 14 TO 20, | 190; | |
| 12 | 8.94 9.00 9.09 9.20 9.20 9.09 9.21 | 470 365 415 275 380 572 339 | 23 28 26 29 28 23 23 | Acid. | 0.3141 0.3119 0.3433 0.1913 0.3768 0.4637 0.3306 | 19 20 26 29 37 37 23 | |

trogen fell slightly during the period (VII) in which relatively small doses of cyanide were injected, and also during the period in which comparatively moderate doses of cyanide (X) were administered. On the basis of its proportion of the total nitrogen, the urea nitrogen in the urine of the fifth dog fell slightly in the first of the two periods referred to, but rose in the latter period. During the cyanide period of the experiment on the sixth dog (Tables XV-XVI) the urea nitrogen rose in quantity.

The allantoin nitrogen was diminished after administration of comparatively small doses of cyanide in the fifth dog, but was increased after moderate doses in the same animal. The allantoin nitrogen was diminished during the cyanide period of the experiment on the sixth dog.

In the experiment on the fifth dog the uric acid nitrogen was fairly constant throughout, but in the case of the sixth dog the eliminated amount in the cyanide period was larger than that of the first period, while the excreted quantity in the after period was greater than the combined amounts of uric acid nitrogen in the fore period and the cyanide period.

In both experiments, creatinin nitrogen appeared to be diminished by the cyanide treatment.

The "undetermined nitrogen" was but little affected by *small* doses of cyanide in the fifth dog, but was decreased markedly in the same animal after treatment with *moderate* doses of cyanide. The same decrease in undetermined nitrogen ap-

Table XVI. Sixth Dog. Summary of Analytic Totals.

| | | | | URINARY | NITROGEN. | | | | ** 1 . |
|---------------------|---|---|--|--|---|---|---|---|--|
| | Period. Condition. Normal Dosage Recovery | Total, grammes. 52.0633 62.0987 73.8900 | Urea, grammes. 46.8047 57.8937 66.6083 | Ammonia, grammes. 1.4845 1.9332 2.3317 | Allantoin, gramme. 0.7120 0.7574 1.0550 | Uric acid, gramme. 0.0340 0.0706 0.1690 | Purin bases, gramme. 0.1481 0.1772 0.1963 | Creatinin, gramme. 0.8672 0.9486 0.8774 | Undeter- mined, grammes. 2.0128 0.3180 2.6523 |
| | | | | DAILY | Averages. | | | | |
| • I. II. III. | Normal Dosage Recovery | 10.4120 10.3496 10.5557 | 9.3609 9.6489 9.5155 | 0.2969 0.3222 0.3331 | 0.1424 0.1262 0.1507 | 0.0068 0.0117 0.0241 | 0.0296 0.0295 0.0280 | 0.1734 0.1581 0.1253 | 0.4026 0.0503 0.3789 |
| | | | RE | LATION TO TH | E TOTAL N | TROGEN. | | | |
| | | Per cent. | Per cent. | Per cent. | Per cent | Per cent. | Per cent. | Per cent. | Per cent. |
| II. III. | Normal Dosage Recovery | | 89.89 93.20 90.10 | 3.11 3.16 | 1.37 1.22 1.43 | 0.07 0.11 0.23 | 0.28 0.29 0.27 | 1.67 1.53 1.10 | 3.87 0.51 3.56 |

Discussion of the chemical results of the experiments with animals on high planes of protein nutrition (fifth and sixth dogs, Tables XII-XVI).

In both of these experiments the average daily total elimination of urinary nitrogen was diminshed during the periods of cyanide injection. In the experiment on the fifth dog the ammonia nitrogen rose markedly during the period (VII) in which small doses of cyanide were administered (Tables XII-XIII), and increased slightly during the period (X) in which moderate doses of cyanide were injected. There was a similar slightly increased elimination of ammonia nitrogen during the cyanide period in the experiment on the sixth dog (Tables XV-XVI).

In the experiment on the fifth dog, the urea ni-

peared after the cyanide treatment of the sixth dog.

Histological. Fifth and Sixth Dogs.

The microscopical examination of the viscera of these dogs showed the following:

Fifth dog. Kidney—There was marked congestion, with well marked albuminous degeneration of the epithelium of the convoluted tubules. The epithelium was swollen and in places disintegrating. The lumina of the tubules contained a large amount of granular matter. The nuclei were intact. Some glomeruli were much shrunken and were composed almost entirely of connective tissue cells. In the neighborhood of some glomeruli and along the course of some blood vessels were large areas, rather sharply circumscribed, of small round cell proliferation.

Liver.—This was the seat of mild parenchymatous degeneration, slightly more marked about the central vein than in the periphery of the lobule. The degeneration, which was albuminous in nature, was slight and accompanied by very moderate vacuolization of the cells. The congestion was not marked.

Heart-Normal. Spleen-Normal. Pancreas-Normal.

Sixth dog. Kidney-The cortex was much congested and the tubular epithelium was the seat of marked albuminous degeneration, which was most evident in the convoluted tubules. The cells were greatly swollen and granular, and irregular in outline. The lumina contained granular matter. No distinct proliferation of connective tissue could be made out. The glomeruli were normal.

Liver—There was mild albuminous degeneration of the liver cells, slightly more marked about the central vein than in the periphery of the lobule. There was very slight vacuolization of the cells. There was no congestion.

Heart-Normal. Spleen-Normal. Pancreas-

Normal.

Historical.

The first investigation of the influence of potassium cyanide upon nitrogenous metabolism was made by Loewy.35 In a preliminary communication he stated that on the day of poisoning, and on the day after, the nitrogen elimination was markedly increased. The cutput of amino-acid nitrogen also seemed to be decidedly increased.

In a second paper on this subject, Loewys stated that the total quantity of excreted nitrogen did not increase in all cases. He concluded that the plane of nutrition has some relation to the manner in which cyanide affects nitrogenous metabolism. That conclusion is in accord with the prior results obtained by Fränkel and Geppert⁸⁷ in their researches on diminished oxygen supply. tablished a similar relation between increased nitrogen elimination and the plane of nutrition. The increase of excreted nitrogen was always least in fasting animals, and invariably appeared later.

As the first series of experiments in this study were nearing completion, we were informed that a similar investigation was being conducted by Richards and Wallace. Their published results88 do not show any marked difference in the effects of cyanide on two dogs, on different planes of nutrition. Richards and Wallace observed an increase in the total of excreted nitrogen and urea nitrogen, with no increase of ammonia nitrogen in the urine. Creatinin was markedly diminished in the urine on the days of severe poisoning. The un-determined nitrogen increased in the urine on the days of severe poisoning.

Conclusions.

Potassium cyanide, injected subcutaneously in gradually increasing daily amounts from one half to three and a half milligrammes per kilo, through periods ranging from four to twelve days, failed to

*Loewy: Centralblatt für Physiologie, xix, p. 856, 1906. *Loewy: Buchemische Zeitschrift, iii, p. 450, 1907. *Frankel and Geppert. Cited by Loewy, lee. sit. *Richards and Wallace Journal of Biological Chemistry, iv. 1.

cause any marked increase in the total elimination of nitrogen in the urine. In six out of the nine cyanide periods, however, the total amount of nitrogen excreted in the urine was actually diminished. In the case of the three other periods the increase observed was very slight.

Possibly the urinary excretion of nitrogen was not materially increased in these experiments, after the cyanide injections, because the doses were too small to produce convulsions or to cause the associated conditions which may markedly augment catabolism, and which may have been largely responsible for the increased elimination of nitrogen that was observed by some of our predecessors in such studies.

The plane of protein nutrition seems to influence the degree to which subcutaneous injections of cyanide affect the elimination of some of the forms of nitrogen in the urine. A comparison of the results for urea and undetermined nitrogen in the urines of the animals on high and low planes of protein nutrition makes it evident that the percentage of urea nitrogen increased and that of the undetermined products decreased in the urines from the dogs on high protein nutrition planes, whereas the reverse in each case was noted for the urines from the dogs on low protein nutrition planes.

Further work will be necessary before the open questions that remain can be answered with assur-

We wish to express our most heartfelt thanks to Professor William J. Gies for his kind advice and guidance in the conduct of these experiments.

PAROXYSMAL HÆMOGLOBINURIA.

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Paroxysmal hæmoglobinuria was first recognized by Charles Stuart in 1794, and since only a limited number of cases have been reported, probably less than eighty (Stempel). The symptoms and histories of these patients were so interesting that they have been studied by numerous observers with considerable care and detail, hoping to reach an understanding of the obscure ætiology of the disease.

The following history is so typical and well marked that I think it worth reporting, with a brief review of some of the associated conditions and symptoms of disorders more or less closely related to this form of hæmoglobinuria.

CASE.—Mr. N., a railway contractor, aged thirty-nine, married, was referred to me on account of "blood in the first part of the urine when the patient became chilled."

The family history is as follows: Father living and at the age of seventy and in good health except "dyspepsia";

the age of seventy and in good health except "dyspepsia"; mother living, sixty-nine years of age, and in good health: one brother, two sisters, two half brothers and one half sister all living and apparently well. The patient had had the usual diseases of childhood and suffered much with backache and headache during his youth. There was no history of syphilis, although of seventy-seven cases previously reported twenty-three had unmistakable evidences of syphilis, eight were children with hereditary lues, two of them heigh sisters. of them being sisters.

Gonorrhœa was contracted one year ago, but was en-

tirely cured. Severe jolting caused pain in his sides over the kidneys; sometimes one side, sometimes the other. Fourteen years ago he had iritis and two days later facial paralysis. The patient insisted that the "strong medicine" used for his eye caused the paralysis. Ten years ago he had a band like sensation around the waist for about ten days. There was no pain, but only a feeling of slight constriction. There was sometimes a skin eruption, which resembled the itch (not urticaria). For seven years exposure to cold or the chilling of any part of his body immediately brought on an attack of hæmoglobinuria. No other influence seemed to have anything to do with these attacks, and driving in the cold with the body, legs, and feet warm and only the hands chilled produced the hæmoglobinuria. The attacks were very infrequent during the summer months, but invariably followed distinct chilling, no matter what the season. There were often several attacks a week during the winter, as the duties of the patient frequently subjected him to exposure during inclement weather. An approaching hæmoglobinuria could always be foretold by a feeling of fullness in the gastric region and by considerable eructation of gas from the stomach. After the patient had become thoroughly warmed the urine cleared up within three to eight hours, depending upon the extent and degree of exposure. For several hours there was a feeling of weakness or depression, which he described as being like that which follows sexual intercourse. When this had passed away he felt as well as

usual until further exposure to cold.

The patient's general health was excellent; he was a large, well developed, well nourished individual with a healthy, ruddy complexion and no evidence of anæmia from these frequent losses of hæmoglobin. The urine be-tween attacks was about normal; sp. gr. Lot8, acid in reac-tion, dark amber color, no albumin, no sugar, no casts, no indican; chlorides thirteen per cent, phosphates 0.05 per cent, sulphates 0.04 per cent; microscopically nothing of interest was observed. When first seen during an attack he was requested to void his urine into four glasses; this readily explained the reason for the statement earlier in the examination that the blood only came with the first part of the urine, as a much larger amount of brownish red sediment was passed into the first glass than in the subsequent ones, the fourth having very little sediment, but a clearer reddish look. The amorphous sediment in the first glass formed about one quarter the volume of the urine. An examination for hæmoglobin with freshly pre-pared tincture of guaiacum and old oil of turpentine gave a distinctly positive reaction. Albumin was present in considerable quantity, but no sugar and only a trace of bile and indican. The chlorides were 0.19 per cent., phosphates 0.07 per cent., and sulphates 0.04 per cent. Sp. gr. 1.020; reac-

Microscopically there were observed many hyaline and granular looking casts—the latter being very abundant and probably composed of the brownish amorphous sediment. There were occasional red cells, leucocytes, and epithelial cells. The patient said the urine was always diminished during these attacks.

Dr. J. N. LeConte kindly made the following report of the patient's gastric condition. It is only a partial examination, however, as the patient was extremely unreliable and irregular about returning, and we were unable to carry out many of the tests and examinations that would have made the report of additional value and interest.

The patient had slight recurrent symptoms of indigestion for eight or ten years, which seemed to accompany hæmoglobinuria.

Physical Examination.—Well nourished, thick, firm, abdominal walls, stomach in situ. So far as could be determined, liver, spleen, and kidneys are of normal size and positive.

Ewald-Boas test meal 60 c.c., poorly ground up, free hydrochloric acid to, total hydrochloric acid 28, total acidity 36, considerable mucus in chyme, no occult blood in chyme. Rennin and pepsin normal. Schmidt test diet not yet given. Ordinary formed brown stool, shaped, nothing abnormal except small amount mucus covering first portion of the local blood in against

Patient had deficient gastric secretion and probably mild gastric catarrh.

Cause.—The cause of paroxysmal hæmoglobinuria

causative factor, as has malaria. The latter, however, probably derived this distinction from confounding with the well known malarial hæmoglobinuria. Dapper in 1868 advanced the view that, since mental excitement and nervous irritation sometimes produce paroxysmal hæmoglobinuria, a vasomotor influence is a causative factor. Ehrlich thinks that in these subjects exposure to cold causes the development of "ferments" which dissolve the blood. Others allege that the red cells have an undue susceptibility or lack of resistance to cold. Cold is nearly always the chief provocative factor, although mental and physical exertions are sometimes the cause of hæmoglobinuria.

Clinical Picture.—Stempel' describes, essentially as follows, the general symptoms of typical attacks

of paroxysmal hæmoglobinuria:

The patient is usually pale, anæmic, weak, and poorly nourished, perhaps with a hæmic murmur of the heart, although many of the patients are rather pale, but otherwise well and strong. Beaumetz, Murri, and Kast describe their cases as being of a healthy, rosy color. A light icterus often exists, even in periods between attacks. In the large majority of cases certain prodromal signs precede the attack and enable the patient to foretell with certainty the approach of the hæmoglobinuria. These signs are exceedingly variable, and we find drawing pains in the kidney region (Greenhone, Eichbaum); frontal headache (Rosenbach, Murri); pain in the right breast, liver, and splenic region (Boas and Struburg); pain in the kidney region, anxious feeling about the heart, sense of exhaustion (Potain); belching gas, pain in the region of the stomach (Gillespie); pain in the back and feet (Frazer); shortness of breath, cyanosis, "things turning black before the eyes," drawing in the limbs, feeling of oppression (Wollf); frequently incessant yawning; especially characteristic is a pronounced feeling of ill ness, weakness, and heaviness in the limbs. There is usually a slight acceleration of the pulse, without a rise in temperature. The urine up to this time is clear; in some few patients the presence of albumin can already be detected. The typical attack is almost invariably introduced by chilliness, which varies from a slight feeling of cold to a hard shaking chill; sometimes it manifests itself only as cold feet, numbness of the fingers, or blue coloring of the field of vision (Bristance, Laycook). It is exceedingly seldom that the chilly symptoms are absent. During the shaking chill, or perhaps very soon after it passes off, the temperature rises usually to considerable height, the severity of the attack. of course, causing an extreme variation in it. The liver and spleen may be somewhat enlarged and tender, but pressure over the kidney very rarely produces pain. A short time after the shaking chill the urine assumes its characteristic appearance. quantity of the hæmoglobin varies exactly with the severity of the attack. The color of the urine varies from a delicate rose color to reddish brown, brownish black, or a deep black. The hæmoglobin appears as a brownish red sediment, which under the microscope is seen as an amorphous or granular substance. The urine contains a distinct amount of albumin.

Lectrod let for do terror clouds for Medicin and Chirargie, s. 10 5 to 205 cars.

The specific gravity varies between 1.010 and 1.032: the reaction is nearly always acid. Uric acid and oxalic acid are frequently observed, casts are numerous, the hæmoglobin casts usually most promineutly represented; hyaline, granular, and cellular casts may also be present. Kidney, epithelium, leucocytes, and, occasionally, red cells are found. Bile is said to be seldom found. There is usually a decrease in the amount of urine after attacks. Hæmin appears in paroxysmal hæmoglobinuria, but not to such an extent as is found in the infectious forms. The attack terminates with a more or less free outbreak of perspiration; the malaise fades away, and there remains only a feeling of dulness and relaxa-This description applies to a typical attack, but often the attacks are much milder and many of these symptoms may be absent. Several authors have observed an urticaria coincident with the at-

Blood Changes.—The leucocytes are usually about normal. The alkalinity is slightly decreased, and of course there is a decided decrease in the red cells. but this is likely to be followed by a rise to normal or above in two to six days. Stained specimens during an attack are said not to show the red cells in rouleaux, and many pale and broken cells are observed. The serum may be tinged with brown. In chronic cases there is usually anæmia and splenic

General Considerations.—The coloring matter in the urine is not hæmatin nor always hæmoglobin, but most frequently methæmoglobin. Methæmoglobin has the same amount of oxygen as oxyhæmoglobin, but probably in chemical union, as it is more firmly held.

Hæmoglobinuria is abnormal in man, although normal in certain vertebrates. Osler mentions a peculiar toxic form of hæmoglobinuria which occurs in horses. It appears suddenly and is associated with paresis of the hind legs. Death usually follows an attack within a few hours or a few days. Horses are affected only after being stalled for several days and then taken out and driven, particularly in cold weather.

Raynaud's disease is thought by some observers to be closely related to paroxysmal hæmoglobinuria. When these diseases are found combined the symptoms of either may dominate the clinical picture. Raynaud's disease begins as blotches, symmetrical in arrangement and paroxysmal in character. There is also local syncope, asphyxia, or hyperæmia. Trophic disturbance finally begins as an almost symmetrical dry gangrene. Pain is most excruciating. The disease may exhaust itself in a single attack, or renewed attacks may continue for years. It occurs more frequently in women than men, while the reverse is true of paroxysmal hæmoglobinuria. There is often a decided difference in the temperature of individual fingers. The cause is usually cold or toxic influences-occasionally traumatism or malaria.

Ralfe has noted cases of paroxysmal hæmoglobinuria with the general symptoms of this disease, in which the urine was albuminous and there was an increase in urates, but hæmoglobin did not appear. These, he supposes, are due to the slight effect of the toxic agent and only a few red cells are destroyed, which are taken care of by the spleen and liver, while the globulin is passed out in the urine.

Ralfe also thinks that the so called intermittent functional or cyclic albuminuria may be a precursor of typical paroxysmal hæmoglobinuria.

Paroxysmal glycosuria has also been observed.

In this connection I have collected some of the most common causes of toxic hæmoglobinuria. Blood transfusion from one mammal to another produces hæmoglobinuria. There is also an epidemic form of hæmoglobinuria of new born infants characterized by jaundice, gastrointestinal disturbance, constipation, rapid pulse and respiration, fever, and some-Punctate hæmorrhages occur on times cyanosis. the body, and the urine contains albumin and methæ-Severe burns produce hæmoglobinuria moglobin. and cause a tendency toward the formation of thromboses. Snake poisons induce a rapid solution Sunstroke has been known to of the red cells. cause it.

Among other causes may be mentioned arseniureted hydrogen, if inhaled; poisoning by toadstools, potassium chlorate, chromic acid, carbonmonoxid. pyrogallic acid, antifebrin, hydrocyanic acid, nitrites.

and nitrobenzole.

The Treatment of Paroxysmal Hamoglobinuria. The treatment consists chiefly in avoiding expos ure to cold and in acquiring an immunity to its effect by suitable hardening measures. When possible the patient should live in a warm climate and wear flannels during chilly weather. The therapeutic measures are based upon many different theories according to the view as to its cause. Quinine was administered before it was shown that paroxysmal hæmoglobinuria was not dependent upon ma-Food containing oxalic acid was forbidden by Robin on account of the frequent excessive secretion of calcium oxalate. Tonics, iron, and a nourishing diet are necessary when the patient is anæmic and weak.

The management during an attack is to place the patient in bed and upon a diet of plain warm milk or very bland, easily digested food. Patsch was the first to try a systematic hardening of his patient to increase the resisting power of the blood cells against the influence of cold. For this purpose warm showe: baths were employed, and by degrees the temperature was lowered. In recent times this has been used more successfully by Leyden and Klemperer, who were able to prevent attacks from cold which previously would have brought on a hæmoglobinuria, by the hardening with water and by air. Chvostek gave amylnitrate inhalations, but this plan of treatment did not prove successful in corroborative experiments-probably because the cold was too great to be dissipated by free dilatation of the surface bloodvessels. Bollinger reported an improvement in his patient from a sojourn in the mountains.

Where there is a history of syphilis, mercury and potassium iodide have given very satisfactory results. Striebung and Kwasoway observed a distinct improvement in the general condition and a diminution in the attacks, while complete cure after energetic treatment has been reported by Murri, Götze.

Schumacher, and Kopp.

1004 CENTURY BUILDING.

TREATMENT OF ERYSIPELAS. By Dell B. Allen, Ph. B., M. D., New York,

Assistant Physician to Presbyterian Hospital Dispensary; Instructor in Medicine at Fordham University School of Medicine.

Although all authorities agree that local treatment in erysipelas is of paramount importance and recommend carbolic acid for such treatment yet I am impressed with the general use of weak solutions. Warren Gould recommends one per cent carbolic in vaseline. Stelwagon uses the same strength solution, or a two per cent. creolin solution. my mind these are far too weak to combat the inflammation, kill the germs, or prevent spreading. The most frequent site is on the face without any apparent wound, so called idiopathic erysipelas. Boston and Blackburn (Journal of the American Medical Association, November 2, 1907) analyze a series of 564 cases of which 485 were facial.

Its pathology shows it to be a streptococcic infection of subcutaneous tissue and lymphatics, accompanied by œdema and swelling of the skin, which is tense, red, and very tender, and shows a distinct

line of demarcation.

Although erysipelas is a selflimited disease and tends to spontaneous recovery yet it is dangerous not only on account of its toxic effect on the kidnevs but if the condition spreads above Reed's base line there is danger of its penetrating by the lymphatics into the meninges. In spite of the probability of a spontaneous cure I think we are justified in aborting and cutting short an attack if possible.

My routine treatment is to paint the area with pure carbolic acid extending the painting about three eighths of an inch beyond the line of demarcation. This is allowed to remain until it becomes white when it is washed off with 95 per cent, alcohol. The penetrating action of the carbolic is a direct germicide to the streptococci already present, and the ring around the area serves as a strong barrier beyond which it is almost impossible for the infection to spread. This line of treatment causes an intense smarting and burning which lasts but a few moments and is quickly relieved by alcohol. In some cases the burning continues for an hour or two in which I direct that a cloth saturated with alcohol be laid on the area. In case of extension into the eyelids where it is impossible and impractical to use the pure carbolic acid I prescribe a two per cent. carbolic acid solution in unguentum hydrægyri ammoniatum to be applied frequently.

I can report but twelve cases of erysipelas so far that have been treated in this manner, but the results have been the same in every case. I have never made more than two applications over the same area, one application being usually sufficient. In one case only did the inflammation spread beyond my first frontier. In no case was there fever on the second day and never any delirium. Desquamation began on the average in four days and was complete in another week, making the duration less than two weeks instead of three or four by milder and weaker solutions. The skin under desquarration is pink and healthy and heals without

130 WELL SELE FOURTH STRILL

scarring.

Our Renders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXV. How do you treat cholera infantum? (Closed

June 15, 1908.)
LXXVI. How do you treat acute articular rheumatism?

(Answers due not later than July 15, 1908.)
LXXVII. How do you treat varicose ulcer? (Answers

LANTI. How do you treat various uter? (Answers due not later than August 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUINED) that the answers be short; if practicable, no one answer to contain more than six hundred reach. words.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish.
All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXXIV has been awarded to Dr. Henry C. Becker, of New York, whose article appeared on page 1244 of Volume LXXXVII.

PRIZE QUESTION NO. LXXIV.

THE TREATMENT OF SUNSTROKE.

(Concluded from page 27.)

Dr. R. S. Fitzgerald, of Richmond, Va., observes:

Sunstroke is an affection caused by exposure to severe heat, either natural or artificial. In the majority of cases we have a few premonitory symptoms before complete prostration sets in, such as headache, dizziness, tingling sensations, and nausea; pain in the epigastrium, vomiting, and excessive thirst soon come on. In severe cases there is always loss of consciousness. The patient soon regains consciousness, but there is extreme pallor, rapid respiration, rapid pulse which is soon followed by a slow pulse, temperature goes to 104° or 105° F., or at times even as high as 108° F. The skin is usually covered with a clammy perspiration or may be unusually dry, convulsions often occur, of an epileptoid character, delirium often follows, and the body is either rigid or very flaccid. There is a general congestion of the entire system, lungs, liver, spleen, and brain. The blood is in a very fluid state.

The diagnosis is usually very easy, the history of the case, exposure to the rays of the sun for some time or exposure to other heat especially when the air is humid.

Diagnosis positive, then comes the treatment. First put patient to bed or absolute rest, loosen or remove the clothes. If taken sick on the street or in the field he should at once be taken in the shade, clothes loosened and cold cloths put to head and changed repeatedly, also give some stimulant such as brandy. If patient is in a state of coma strychnine, camphor, and nitroglycerin should be given hypodermatically, morphine and atropine may be given in case of convulsions. If patient can be taken to his home give cold baths or cold packs. with ice, until temperature is reduced. Iced water enema is very effectual for reducing temperature.

Regulate the temperature by a rectal thermometer. In very severe cases free venesection may be resorted to.

Dr. Elias William Abramowitz, of New York, writes:

Prophylaxis.—The amount of work an individual does should be lessened during the warm season, especially if he has once been sunstruck, or is not accustomed to warm weather. In factories, etc., where men work at large furnaces, free ventilation with frequent shifting of men, would militate against heat exhaustion, which also comes under the category of sunstroke. In military service, drills, marches, etc., should be shortened, frequent halts made, and each man supplied with fresh, cool water. The wearing apparel should be of light flannel material and light in color; the best head gear being the helmet lined with green material to keep out the actinic rays of the sun.

The diet should contain as little meat and as much of vegetables as is consistent with the tastes and needs of the individual, fruit juices being especially recommended. Fresh, cool water in small quantities and at frequent intervals is sufficient to keep the tissues supplied with the fluid they require, if the individual perspires freely. It also keeps the bowels regular, thus preventing the accumulation of toxines. Iced coffee and tea are also good. Alcohol should be permitted only in rare instances. One or more cold baths during the day are excellent.

Treatment.—There are three classes of cases: I. Heat Prostration.—This is a mild form of sunstroke in which the patient complains of headache, vomits, and may go into syncope. He should at once be carried to a cool shady spot, his clothing loosened, cold showers given to head and neck, and a cool drink administered. Liquor ammon. acet., floz i-iv; spirit ammon. aromat., floz i-ii; strych. sulphat., gr. 1/40, may be given as stimulants. Rest from twenty-four to forty-eight hours will greatly help to bring the patient around.

2. Sunstroke.—A severer form, in which we get complete circulatory and respiratory collapse and a temperature which may reach 115° F. Here immediate action is necessary. The patient should be stripped and cold applied in any of the following forms: Cold showers, cold packs, cold sponge, or cold spray, using friction all the time. Cold rectal irrigations should be given only in the hyperpyretic form. Care must be taken that the temperature does not fall below 102° F. Antipyretic remedies are not advised, because of their depressant action. After this treatment the patient should be dried, placed in blankets, and a strong purge given. Oxygen and artificial respiration should be resorted to if asphyxia occurs. For stimulation, camphor, ether, or whiskey hypodermatically are recommended. Digitalis, strychnine, quinine should be used with caution. If convulsions occur, chloroform inhalations should be given. If the pulse is full and bounding, and the patient is cyanozed, phlebotomy is advisable; veratrum viride is also recommended. Diet in these cases should be liquid, followed later by cereals, eggs, etc.

3. Heat stroke.—An exhaustion that occurs in stokers, engineers, etc., and not due to the direct rays of the sun. Symptoms coincide with sunstroke, but instead of pyrexia there is apyrexia. Envelope the patient in hot blankets and use same stimulants as in sunstroke. Do not use cold in these cases.

After treatment.—"Once sunstroke always sunstroke." Hence residence in a cool climate is preferable for one who has had sunstroke. While the patient may convalesce from the attack itself, any number of nervous complications may set in, all of which require special treatment.

Dr. W. Clarkson, of Montreal, Canada, remarks:

The treatment of this condition resolves itself into the management of: a, a syncopal form, heat exhaustion; b, an asphyxial type, insolation, or sunstroke proper; and c, a hyperpyrexial subtype of this latter, known as thermic fever.

Treatment is both prophylactic and active.

1. Prophylaxis.—This is of paramount importance. Temperance in eating and drinking are to be specially enjoined on those whose occupation predisposes to endure heat with physical exertion. The clothing must be loose and light, and the head well protected from the sun's says. Overfatigue is to be guarded against, and frequent bathing in hot weather is an excellent preventative measure.

2. Active treatment.—A. Heat exhaustion: In a mild case put the patient to bed between warmed blankets, hot water bottles being placed near the trunk and extremities. If stimulation is indicated use aromatic spirit of ammonia in drachm doses, hourly repeated in hot lemonade, only resorting to the hypodermatic use of strychnine sulphate, gr. I/20, in severer cases. If temperature is subnormal, an efficient restorative will be found in a general hot mustard bath, repeated in two or three hours, as necessary.

B. Sunstroke proper: Speedy antipyresis is the primary indication here, and cold hydrotherapy is our sheet anchor. The ordinary measures called for in a very mild case—to loosen all constricting clothing, lay patient on back in a cool, shady place, and dash cold water over face and chest, with, perhaps, the employment of some rapidly diffusible stimulant if the depression continues.

More energetic measures are demanded in a severe case: a cold bath is employed, the patient is put into a bath, temperature of 80° F., and ice gradually added until temperature reaches 60° F.; meanwhile the patient is being rubbed with ice; immersion is continued until rectal temperature is found to register 101° F., when the bath is discontinued, as the temperature will continue to fall for some time. Should a secondary rise of temperature occur, we employ the cold sheet pack for moderate rises, or another ice bath for a severe after fever. Free stimulation by means of whiskey, ½ ounce, or strychnine sulphate. 1-20 grain, hypodermatically as required—should be given if collapse symptoms supervene.

toms supervene.

C. Thermic fever: Here even a more immediate reduction of the temperature than in the case of sunstroke proper is demanded. Claudius's method, modified to meet individual cases, will be found

highly satisfactory. The patient is stripped, a thermometer inserted in the rectum, the body enveloped in a sheet, and laid on a stretcher; pieces of ice are packed around the body and larger blocks about the head; now a fine stream of iced water is allowed to trickle upon the forehead for a minute or two at a time. This will be of invaluable assistance in resuscitation. Discontinue all these measures when rectal temperature registers 103° F. While applying these measures, it is customary to give digitalin, 1/15 of a grain hypodermatically, except in cases of plethora, when venesection is indicated, followed by small repeated doses of digitalin. Otherwise, treatment is identical with that of sunstroke proper.

Special measures: After all pronounced symptoms have subsided, treatment is symptomatic, special symptoms demanding special treatment.

Conclusions: Chloroform inhalations are useful, and may be supplemented by hypodermatic injections of morphine sulphate and atropin. Hot baths are of service.

Heart Failure: Digitalin, strychnine sulphate, or camphor in olive oil is indicated in full therapeutic doses.

Asphyxia: Venesection is indicated, followed by saline transfusion. Artificial respiration is of service in cases threatened with respiratory paralysis.

vice in cases threatened with respiratory paralysis. After treatment: Light dietary and fresh air, with a possible prolonged sojourn in a cool climate, will be productive of much benefit.

Dr. Samuel L. Salasin, of Philadelphia, Pa., says: says:

Sunstroke, or, more correctly speaking, heatstroke is divided into two distinct classes.

One is that in which the excessive exposure to heat upsets the thermal mechanism of the body so that fever results, thermic fever; and the other in which the temperature of the body is lowered, which is known as heat exhaustion. These conditions must be treated according to the dangers in which the persons affected are placed.

The danger of thermic fever is that the high temperature may cause coagulation of the myosin in the heart muscle and of the protoplasm in the brain.

The danger of heat exhaustion is death due to collapse caused by general failure of the functions of the vital organs and the chilling of the body.

The treatment of these conditions is therefore entirely different. In treating a case of thermic fever, the first thing to do is to loosen the clothing and, if possible, remove it. If the pulse is full and bounding, and the patient is cyanotic, freely bleed him. At the same time cold applications should be applied, especially to the abdomen, back, chest, and head. While doing this the body should be thoroughly and briskly rubbed so as to bring the hot blood to the cold parts. Rectal injections of ice water have proved very beneficial.

A thermometer in the mouth or the rectum of the patient should be carefully watched so that there should not be a too sudden drop of temperature followed by collapse. When the temperature is reduced to about 101° F., the cold applications should be stopped, the patient dried, placed on a cot, and

covered lightly. An ice cap should be placed on the head and small pieces of ice should be given to the patient to swallow so as to allay the gastric irritability. The temperature should be watched, because in a few minutes there is a liability of its rising again, which would require further applications of cold. This second rise is due either to a disorder of the heat producing centre or to the fact that while the surface of the body is cool, the blood in the internal viscera is still at a high temperature, and rapidly heats the surface as soon as the ice is taken away.

If free sweating does not occur after the reduction of most of the fever, a hot bath and a hypodermatic injection of pilocarpus should be given. The patient should then be carefully watched for three or four days, as he is in danger of a simple meningitis. For several days, the diet should be

In heat exhaustion, the bodily temperature should be raised by means of heat and stimulation. The head should be lowered if possible. Hot baths at a temperature of 110° F., hot bricks, and rectal injections of hot water should be used. In cases where the external temperature is below normal and the internal temperature is found to be high, the rectal injections should be cold instead of hot. For stimulation, hypodermatic injections of strychnine, atropine, camphor, brandy, or ether should be used.

By the mouth, aromatic spirits of ammonia should be given. To combat the nervomuscular weakness, strychnine and digitalis should be used for a day or two.

Dr. Frank E. McCann, of Louisville, Ky., observes.

The chief danger from sunstroke, or, more properly, heatstroke, consists in the superheated condition of the body, which leads to carbonization of the blood and to paralysis of the heart through its effect on the heat centres of the brain.

As this is the chief danger so is it the physician's chief duty to relieve this hyperpyrexia as quickly as possible. Immediately on reaching the stricken person apply ice and ice water to the head, then remove the clothing, or at least a good portion of it, and place the patient in a bath of ice water, the surface of the body being rubbed vigorously all the while. If a bath is not convenient, the surface of the body may be rubbed with pieces of ice and cold water poured over it.

Combined with this, ice water enemas are very efficacious in reducing the temperature, which should be closely watched, and when down as low as 99° or 100° F., the patient should be placed in dry blankets, and if the pulse is rapid and weak, an injection of normal saline solution should be given subcutaneously or better still intravenously in the arm. If the heart still flags resort may be had to clixir digitalin by hypodermatic injection.

If reaction fails to set in and the temperature again rises the patient should be again placed in the ice water as before, and the treatment kept up until the temperature again falls. This should be repeated as often as the temperature rises, until it finally remains near normal.

If convulsions follow cucuas of chloral or inhala-

tions of chloroform may be given. The patient must be kept at absolute rest and quiet for a number of days.

Dr. Joseph Baum, of New York, writes:

As in cases of drowning, attention to those who are sunstruck must be immediate and purposeful. At once remove the patient to the nearest shady location; cut his clothes from him, exposing his body to the air; cold water, or better a piece of ice or an icebag, should be applied over the entire cranium; an ice cloth or ice bag or lump of ice should be placed over the præcordium; sprinkle the body with cool water, and then rub the surface of the body with a piece of ice (in a cloth); all this is to aid the radiation of heat from the unfortunate's body.

Do not allow any one to pour whiskey or other stimulant down the throat; do not hold strong ammonia to the nostrils; do not pump hypodermatic injections of strychnine into the unresisting body; a wildly pulsating heart, already overstimulated, does not need to be whipped further, it needs to be soothed and quieted, it needs regulation. And right here is where the old fashioned, almost obsolete, method of blood letting serves a useful purpose. for by removing twelve to fifteen ounces of blood from the general circulation, we use the most scientific and logical means of restoring the tumultuous heart action to something like a normal state.

To sum up, immediate resourceful treatment at the place where the casualty occurs; assisting the radiation of heat from the body by local cold or a general cool bath; the withdrawal of fifteen ounces of blood from the circulation; the avoidance of hypodermatic stimulation by cardiac stimulants; and then to the hospital for further observation will save many a case.

Dr. C. D. Martinetti, of Orange, N. J., says

Prolonged exposure to heat, especially in a moist atmosphere, very frequently results in an affection in which two grades may be distinguished.

The common mild form of heat prostration under which come most of the cases reported every summer by the daily papers shows more or less pronounced exhaustion, weakness, faintness, and nausea. Sometimes are added pallor, depression, collapse, and coma with subnormal temperature as low as 95° F. These patients, even if left to themselves, usually recover in a few hours.

The real sunstroke or heatstroke, however, has an abrupt onset, being rarely preceded by dizziness and faintness. The patient becomes flushed and unconscious, with profuse sweating, delirium, vomiting, and very high temperature. Unless assistance is forthcoming death rapidly follows from cerebral anæmia or cessation of respiration. A hot, moist atmosphere is uniformly fatal, especially when a person is predisposed by alcoholic or other excesses or previous ill health.

When called to a simple case of heat prostration our efforts must be directed immediately towards elevating the temperature of the body by the application of external heat, hot bath, hot drinks, alcohol, friction and stimulants.

A hypodermatic injection of strychnine nitrate,

1-30 grain, is most beneficial, to be repeated if necessary in half an hour.

In the real sunstroke, instead, our every effort must be directed towards reducing the temperature. A 10 grain dose of acetphenetidin or antipyrine should be at once administered either by mouth or hypodermatically. Ice water is a necessity, the patient being kept sprinkled with it until his temperature falls to about 101° F.

Then he is wrapped in blankets and placed in bed. Convulsions may require ½ grain of morphine, or preferably a hypodermatic injection, composed of morphine sulphate, ¼ grain; hyoscine hydrobromate, 1-100 grain. In any and every case of heat stroke, whether mild or severe, once the more severe symptoms have been attended to, 1-10 grain of calomel should be given every fifteen minutes until one grain is taken.

Patients suffering from heat stroke rarely recover promptly, and completely. Headache usually follows, also deafness, impaired memory, paralysis, or meningitis, besides functional irregularities of heart action.

Heat stroke may to a great extent be prevented by those exposed wearing suitably light clothing, avoiding stimulants, drinking large quantities of water, and paying proper attention to the evacuation of the bowel.

Dr. L. A. Crutcher, of Louisville, Ky,. remarks:

In treating sunstroke I have the patient placed in a quiet, well ventilated room, and at once I loosen the clothes. Then begin to reduce the temperature by the use of cold baths or cold pack, etc. I also use a hypodermatic injection of quinine or atropine; then the patient must be wrapped in a wet sheet, this tending to prevent subsequent rising of temperature.

When the patient is restless or convulsive, morphine, ¼ grain, hypodermatically is given, and if the pulse is feeble, stimulants of strychnine, nitroglycerin, or digitalis may be given.

This line of treatment, in all of my experience, has proved to be very successful.

Dr. J. Lytle Moore, of Toledo, Ohio, states:

Osler recognizes two conditions caused by excessive heat, viz.: heat exhaustion and sunstroke or insolation. In the former, following a prolonged exposure to the sun's rays or high temperature, there are extreme prostration and subnormal temperature. In sunstroke there are very high tem perature, unconsciousness, and frequently convulsions. I will consider the treatment of both conditions in this article.

Ætiology. Before mentioning the treatment, it will be well to look into some of the underlying causes. The active cause is prolonged exposure to the sun's rays. Unsuitable clothing and lack of protection to the head and spine are other prolific causes. Alcoholism, violent exercise, excess of proteid food, insufficient sleep, improper hygiene, constipation; and, in fact, anything which lowers the body resistance will act as a predisposing cause. Those who have had one attack are more susceptible to the sun's rays, and so more liable to sunstroke.

Sunstroke is frequently met with in the army, when soldiers are taking long marches; and it is also more common among the laboring class of peo-

ple, especially those who use alcohol.

Prophylaxis. So we see from the ætiology, the prophylactic treatment is to avoid anything which tends to bring the body resistance below par. Those working in the sun should wear suitable clothing and use protection to their heads. Prolonged exposure to the sun, and violent exercise on a hot day should be advised against. And, finally, those who have had an attack of sunstroke should take the greatest precaution when exposing themselves on a hot day.

Treatment. If the attack occurs upon the street or in a field, the patient should immediately be taken to a cool, shady place, where there is plenty of fresh air. Absolute rest is a very important point in the treatment of sunstroke. Remove all unnecessary clothing. If needed, give stimulants—a hypodermatic injection of strychnine or ether, or whiskey, or let the patient cautiously inhale the fumes

from a bottle of ammonia.

After doing this, the treatment is mainly symptomatic. One writer has made the statement that cold water, stimulation to the heart, and unloading the bowels are all the treatment needed in most

cases of sunstroke

The hyperpyrexia should be met with by the application of cold. Apply ice to the head and spine. If ice is not at hand, use cloths wrung out of cold water, and change them as soon as warm. Another good way is to place the patient in a tub of cold water. If this cannot be done, wring a sheet out of cold water and wrap it around the patient, and sprinkle cold water upon it now and then. Another very useful means of using cold is by the cold douche to the head and spine. This should only be used for a few minutes at a time. It reduces the temperature and also stimulates respiration. In severe cases give also an enema of ice water.

This cold water treatment should be used persistently until the temperature comes down to 100° F. Then put the patient to bed, covered up with blankets, place hot water bottles to the feet, and use stimulants as are indicated. The best ones are ether, strychnine, camphor, and whiskey. A hypodemaclysis of one to two pints of normal salt solu-

tion is one of our best means.

A purgative enema and a brisk cathartic should be given in all cases. Diaphoresis should be encouraged by warm sponging and the use of Warburg's tincture. Also watch the kidneys to see that they are functionating properly. The object of these measures is to eliminate all toxic substances from the body. A mustard paste applied to the neck is a favorite therapeutic measure.

When convulsions are present, control them with a few drops of chloroform and a lukewarm bath. Also give hypodermatically, ½ to ½ grain of morphine, guarded by 1-150 grain of atropine.

For the restlessness and insomnia give a warm sponge bath. If this does not produce the desired effect, give bromides. The persistent headache should be treated with coal tar products, salicylates, a bromides, and the patient kept quiet.

Man physicians peak very highly of bleeding

in the treatment of sunstroke. The only instance where I think it is justifiable is in those cases which present cyanosis and dyspnæa, in a plethoric person.

When the temperature is subnormal and there is great prostration, as in heat exhaustion, put the patient in a hot bath, then cover him well in bed, with hot water bottles around him. Stimulate freely. A hypodermoclysis is one of the best means in these cases.

The convalescence should be treated symptomatically. Tonics and plenty of nourishment are indicated. The patient should live a quiet life, and should avoid all unnecessary exposure to the sun on a warm day. His occupation should be one which does not require much exertion or mental concentration. He should be a rigid observer of the laws of hygiene. The physician should advise him to spend his summers in a colder climate. By these means he can be comparatively free from the unpleasant after effects of sunstroke.

Therapentical Hotes.

The Iodine Treatment of Typhoid Fever.—In the Journal de médecine de Bordeaux, for June 7, 1908, Dr. J. P. Lafitte, of Santiago, Chile, gives the composition of the compound solution of iodine which he uses hypodermatically in the treatment of typhoid fever. It is as follows:

(The quantities of the different ingredients should be taken by weight.)

Inhalation for Whooping Cough.—The following is recommended to be added, a tablespoonful at a time, to a bowlful of boiling water, kept in proximity to the patient:

13 Naphthalene, Six,
Camphor, Si
Oil of eucalyptus.
Oil of pine needle, ãã q. s.

[It is to be presumed that enough of the oils are taken to effect dissolution of the naphthalene and camphor.]

For Dysenteric Diarrhea,—The following is prescribed by Pouchet (Journal de médecine de Paris, May 30, 1908):

1: Bi muth saleylate. 5ui;
Camphorated tincture of opium, 3iv;
Glycerin. 5us;
Peppermut water. 5w.
M. et sig: Tablespoonful every hour.

Combined Method of Treatment for Tuberculous Lesions of the Face (Lupus Vulgaris, Etc.)—J. Goodwin Tomkinson (The Practitioner, June, 1908) employs the following combined method of treatment of cutaneous tuberculosis (lupus vulgarus and tuberculosis verrucosa): If any crusts exist they are removed by the application of a salicylated ointment. A tentative x ray exposure of from three to five minutes is made upon a small area of the lesion. In a few days the x rays are directed

for about five minutes daily upon a somewhat wider area of the lesion, unless contraindicated, until the whole lesion has been exposed some three or four times. It is then plastered with Unna's fifty per cent. salicylic acid and creosote plastermull, which is renewed daily. If its application is badly borne, the part is previously swabbed with ten to twenty per cent. solution of cocaine. In a variable number of days—approximately about ten and determined by the individual case—it is found that much of the tuberculous tissue has come away. The lesion is then swabbed with cocaine solution, then dried, and afterwards painted with the following preparation:

A few minutes afterwards the lesion is painted with the following solution:

B Carbolic acid, Us lxxx;
Absolute alcohol, Us lxxx

After cauterization the part is dressed for a day or two with sterilized lint and carbolated oil (I in 30), and, thereafter, with twenty per cent. aqueous solution of ichthyol, until healing has taken place. After healing x ray treatment is recommended, short exposures of three to five minutes—rarely longer—being made. At the end of three or four months the treatment is discontinued for a considerable time, during which the patient returns periodically for inspection.

Treatment of Chronic Intestinal Catarrh.— Von Aldor (Berliner klinische Wochenschrift, April 13, 1908; Journal de médecine de Paris, May 30, 1908) advises the use of the following prescription for the treatment of the symptoms of chronic catarrh of the intestines:

| $\mathbf{P}_{\!\scriptscriptstyle{E}}$ | Bismuth subnitrate, |
|--|---------------------|
| | Bismuth naphtholate |
| | Calcium phosphate, |
| | Calcium carbonate, |
| | Resorcin,gr. viiss |
| 3.1 | |

Sig.: Take as much as may be lifted on a dime every three hours.

A laxative should be prescribed every four or five days.

The Treatment of Obesity.—In the Journal de médecine de Paris, for May 30, 1908, W. Mladejorsky is credited with the following combination in pill form for the reduction of obesity:

| B | Thyreoid extract, |
|----|---|
| | Sodium and theobromine salicylate,āā gr. x; |
| | Podophyllin,gr. ss; |
| | Quinine hydrochloride,gr. v; |
| | Extract of cascara sagrada,gr. ii: |
| M. | ft. pil. No. xii. |

Sig.: Take six to nine pills every morning on an empty

Some Active Principles of Digitalis.—The most active principle of digitalis is digitoxin, though its activity does not represent more than one fourth of the total power of digitalis leaf. It is practically identical with *Digitaline crystallisée* (Nativelle), and the dose is the same—namely, I/250 to I/60 grain. *Digitalin* (German) consists of a mixture of

glucosides, and is much less active. Dose, 1/60 to 1/30 grain.

The Treatment of Pruritus Ani.—After fomenting the parts with hot boric acid or phenol solutions of appropriate strength, it is recommended in Memento therapeutiques des praticiens (Le Monde médical) to apply the following ointment:

| P_k | Oil of peppermint, | gtt. | xv; |
|-------|--------------------|-----------|------|
| | | gr. x | dv; |
| | Soft petrolatum, | | |
| M. | Olive oil, | āā | ÚSS, |
| | | | |

Following the application of the ointment a suppository should be used, the following being suggested:

| P, | Oil of theobroma,gr. xlv; | |
|----|--|--|
| | Morphine hydrochloride,āā gr. 1/3 to gr. 3/4 | |
| М. | ft. suppositorium No. i. | |
| | | |

| M. | contract for | | | | | | |
|--------------|--------------|-----------|--------|------|------|-----|------|
| r be | tter: | | | | | | |
| \mathbb{R} | Cocaine | hydrochi | oride, | | | gr. | xxx; |
| | | subnitra | | | | | |
| | Soft pe | trolatum, | | | | | 3x. |

In order to rid the tract of worms calomel may be given in combination with santonin, 1/6 of a grain of santonin being taken for each year of age.

If hæmorrhoids are present either one of the following ointments may be applied night and morning:

| \mathbf{R} | Carbolic acid,gr. viiss, |
|--------------|--|
| | Ergotin, |
| | Extract of hamamelis, |
| | Tincture of benzoin, |
| | Wool fat. |
| | Soft petrolatum,āā 3v |
| M. | por por ording reserved to the port of the |
| 212. | II. |
| \mathbf{R} | Iodoform |
| | Extract hamamelis. |
| | Extract namamens, |
| | Extract of hydrastis, |
| | Zinc oxide,3v |
| | Lime water, |
| 3.5 | Linseed oil, |
| | |

The objectionable odor of the iodoform contained in the last formula makes the ointment difficult of application in some instances, and if necessary the iodoform may be replaced by salol.

In simple pruritus the application of a 1 in 40 solution of menthol in alcohol as a paint will be found useful.

Equally serviceable is the topical application of an ointment made as follows:

| P _i | Liniment | of lime | water, | , . | | | , |
|----------------|----------|---------|--------|-----|------|------|----|
| 11 | Carbolic | acid, | | | | | î. |

Hypodermatic Injection for Hepatic Colic.— The following solution is employed in appropriate dosage hypodermatically for the relief of hepatic colic:

| \mathbf{R} | Morphine hydrochloride,gr. iss |
|--------------|--------------------------------|
| | Distilled water, xxx |
| | Alcohol (90 per cent.), |
| 1.0 | Ether, |

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NEW YORK, SATURDAY, JULY 11, 1908.

THE DEFECTS OF THE NEW YORK AMBULANCE SERVICE.

The ambulance wagons maintained by the hospitals of New York perform a service which can hardly be overrated, but its very excellence makes us wish all the more that it was perfect, and perfection really seems attainable. For its improvement, however, it is necessary that attention should be drawn to its shortcomings. This has recently been done by one of the committees of the State Charities Aid Association on the basis of a report by Mr. Phil P. Jacobs, who was employed by the committee to present a picture of the present conditions.

Each hospital which operates one or more ambulance wagons has assigned to it a district which it is depended on to cover and beyond the limits of which it is not supposed to extend its activities, but it is not a very uncommon occurrence for two or more wagons from different hospitals to meet at the scene of an accident. It has happened, indeed, that the surgeon of one hospital, finding himself not to be the first to arrive, has in all courtesy ordered his wagon to return without the patient, and the other surgeon has then found the case unsuitable for treatment in the hospital represented by him, whereupon he, too, has left the sufferer to go without hospital assistance. Such an event comes about by reason of two citizens having summoned relief from two different hospitals, and the calls being complicated by somebody's ignoring the district boundaries.

In other instances, again, no wagon at all is forthcoming or one arrives only after an inordinate delay. This is sometimes due to the fact that the call was sent by some sympathetic citizen who, in innocent disregard of established routine and in his haste to secure aid for an unfortunate person, has acted himself instead of finding a policeman to do it, for it seems that there is a general understanding among the hospitals that an ambulance call received in any other way than through the police force is negligible, although the police are not legally charged with the sole authority to send a summons. In many instances delay is due to the fact that the hospital properly appealed to has already sent its wagons to the scenes of other accidents, far away, so far that their return is exceedingly tardy. This unfortunate occurrence is apt to be due to an awkward arrangement of the districts whereby the hospital to which a district has been assigned is situated, not centrally, but close to one of the boundaries of an extensive area.

The chief recommendations made are that there should be established a bureau of ambulance service, and that calls should be receivable only by the officer in charge of the bureau, who, unless he has good reason to think that a call is unnecessary, shall direct the proper hospital to respond. In case any private hospital fails to comply with the requirements, the city shall itself conduct the ambulance service in the district which would naturally belong to that hospital. It is proposed that the bureau be under the control of the Board of Trustees of Bellevue and the Allied Hospitals, and that the division of the city into ambulance districts be revised. These recommendations seem reasonable and easy to carry

DIET AND ENZYME ADAPTATION.

That an intimate relation between the chemical receptors of the gastrointestinal tract and appropriate nervous correlation exists is beginning to be appreciated, and it seems not improbable that there are a great number of such chemical stimulus receptors which are, perhaps, just as specific in their reactions as the external receptors are to heat, cold. light, and sound stimuli. We must remain for the time in the fact gathering period of this work: it would be premature to generalize now. Of recent observations in this sphere, the study of C. H. Neilson and D. H. Lewis, from the Physiological Department of St. Louis University, on The Effect of Diet on the Amyolytic Power of Saliva (Journal of Biological Chemistry, June), is especially instructive from this general point of view.

Neils n and ferry, in 1900 showed that when

dogs were kept on a carbohydrate diet the saliva which was secreted was richer in amylolytic power than when the dogs were on a meat diet. These results have been contradicted by other observers; hence the authors have thought to determine just what effects a carbohydrated diet might have on human saliva. Simon, in 1907, reported that a carbohydrate diet caused an increase in amylolytic ferments in the saliva, and the extensive study here outlined by Neilson and Lewis goes to establish this view, in spite of the contradictions of other observers.

The authors are at a loss to explain this change, but it is not difficult to conceive of a specific enteroreceptor, to use the language of Sherrington, that responds to carbohydrates and, producing the proper stimulus, results in the correct adaptation on the part of the nervous mechanism of the salivary glands to secrete the appropriate ferment. It is true we are, as yet, but groping in the dark. The receptive lining of the gastrointestinal tract responds almost exclusively to chemical stimuli, and, although it is thought that these internal digestive organs are sparsely endowed with receptive organs, when compared with the free enteroreceptive surface outside, such may be far from being the case. Should the present conclusions stand, they would point in the direction of specific carbohydrate receptors quite analogous to others with which we are already familiar.

TUBERCLE BACILLI IN THE FÆCES.

In many textbooks on clinical pathology the statement is made that the occurrence of tubercle bacilli in the fæces is indicative of intestinal ulceration, or that it is the result of the swallowing of tuberculous sputum. It has been shown by a number of observers, however, that bacilli may be passed from the blood into the lumen of the intestine, and vice versa through an intact mucous membrane. The studies of Rosenberger (Proceedings of the Pathological Society of Philadelphia, February) show that the bacillus may be found in the fæces when there is no pulmonary lesion from which the patient might swallow sputum and when there is no intestinal lesion; in cases of general glandular involvement. meningitis, hip joint disease, etc.

Following the demonstration of acid fast bacilli in the fæces of patients with symptoms which did not admit of a positive diagnosis, Rosenberger undertook the examinations of the fæces of 672 patients in the Philadelphia General Hospital for the presence of such organisms. The technique is quite simple: A small piece of the material is smeared on a slide, being emulsified with water if it is solid or semi-

solid, dried in the air, and fixed in the usual manner. The preparation is then stained with cold carbol-fuchsin for twenty minutes; after draining off the excess, Pappenheim's solution is applied for two minutes, and then the preparation is washed with water. If the specimen is not of a uniform blue color, Pappenheim's solution is again applied for one minute, and the preparation is washed anew. This process is continued until the specimen is uniformly blue. The film is then dried and examined with a twelfth inch oil immersion lens. By this method the tubercle bacillus was found in the fæces in all the tuberculous patients, and in 120, 19.6 per cent., of the 612 patients who did not present positive clinical evidences of tuberculous disease.

Rosenberger concludes that no other acid fast bacillus is found in the fæces than the tubercle bacillus. The presence of these organisms in the fæces means that an active tuberculous process exists somewhere in the body. In the acute miliary form the bacilli are always present in the fæces, and their occurrence there does not always indicate intestinal ulceration. The author advises that the fæces be examined for tubercle bacilli in all cases of chronic diarrhæa and general glandular involvement, and in all cases in which pulmonary tuberculous disease is suspected, but in which no sputum can be obtained for examination.

In the discussion which took place at the meeting at which Dr. Rosenberger read his paper, several objections were raised to some of his conclusions. We know of more than one laboratory, in which the method has been adopted, in which the results have not been so satisfactory as those reported in the paper under discussion. However, Rosenberger spent as long as two hours in searching for the organisms in some of his specimens before he found them, or before he arrived at the conclusion that they were absent. It is possible that lack of patience is one reason why others have failed to obtain the same results as those recorded in the paper. The objection raised by one member, that the bacilli had been found in the person of a perfectly healthy individual, is not so easy to answer. The method is simple, and there are many reasons why others should endeavor to confirm or refute the conclusions of the author.

THE EXCRETA OF TUBERCULOUS CATTLE.

The question of the dissemination of tuberculous disease by the excreta of tuberculous cattle, particularly by their fæces, has been investigated anew by Dr. M. H. Reynolds, the veterinarian of the Agricultural Experiment Station of the University of

MIDICAL TOLKS VI

Minnesota, and Dr. W. L. Beebe, the bacteriologist of the Minnesota Live Stock Sanitary Board, and an account of their work is presented in *Bulletin No. 103* of the Veterinary Division of the station. They cite previous similar investigations by Schroeder and Mohler and Schroeder and Cotton, of the Bureau of Animal Industry, with whose findings their own do not wholly coincide.

Schroeder and Cotton concluded that cows rarely if ever passed tubercle bacilli in the urine unless the genital or the urinary organs were involved in tuberculous disease; also their results with the nasal secretion, both on microscopical examination and by inoculation tests, were negative. Those observers found, however, that virulent bacilli were usually passed in the fæces, uniformly distributed through them, by cows that responded to the tuberculin test, and they estimated that ordinarily such a cow would give off daily 37,800,000 bacilli demonstrable with the microscope, and several times that number not thus demonstrable. They are convinced that there is no more fruitful manner of dissemination of tuberculous disease from cattle than by their virulent fæces-to other cattle confined in stables and to man by the contamination of the cows' milk with their dried fæces, provided no more than ordinary cleanliness is observed by the milkers.

Reynolds and Beebe, on the other hand, were not able to satisfy themselves that more than one tuberculous cow out of the forty-five with which they experimented was passing virulent tubercle bacilli with the faces, and their inoculation tests with the nasal secretion of fourteen tuberculous cows were barren of results in all save two inoculations from one of the cows, and that one cow was the only one whose faces were shown to be virulent. On post mortem examination, that particular cow was found to have had tuberculous disease of various structures, but no ulcers of the intestinal mucosa were found, though the entire intestine was very carefully examined. Both lungs contained many abscesses, and both retropharyngeal lymph glands showed caseous areas.

In the most catholic spirit, the Minnesota observers, far from questioning others' findings, simply indicate the need of further investigations. They remark that, if a considerable proportion of tuberculous cattle are passing virulent bacilli in the fæces, the amount of dissemination thus made possible is serious both for other cattle and for human beings; and, if but few such cattle are passing virulent bacilli, "those few are dangerous and seriously objectionable factors in any herd." They add: "Until further information is available, and considering the disastrous results which have been shown to be possible from virulent manure, it becomes evident that

tuberculin reacting cattle should not be allowed to remain in any stable from which milk is taken for food purposes or where they are associated with healthy cattle, even though the milk of the reacting cows be discarded."

TUBERCULIN IN DIAGNOSIS AND TREATMENT.

To the best of our knowledge, this journal was the first to suggest caution and to express misgivings at the time of the initial furore of enthusiasm consequent on Koch's original announcement of the probable therapeutic value of tuberculin (see the New York Medical Journal for November 22, 1890, page 570). It was not long before optimistic expectation gave place to acknowledged disappointment, and at length tuberculin fell into almost complete disuse as a therapeutic agent. Of late, however, there have been some signs of a partial revival of confidence in tuberculin, and perhaps it is this fact that has prompted an eminent member of the New York profession to seek for a consensus in regard to the matter.

Specifically, he asks the following questions, all bearing on the use of tuberculin for diagnostic purposes: 1. Should tuberculin injections be employed as a routine measure? 2. Are these injections reliable and positive in all cases and stages of tuberculous pulmonary disease? 3. Are they absolutely free from danger? 4. Do they ever awaken a latent tuberculosis? 5. Would you employ them in a case of suspected tuberculosis in a member of your own family? In accordance with the gentleman's request, we hereby invite clinical observers-"leading lights in phthisiólogy," the gentleman himself phrases it-to answer the questions. Perhaps few will care to answer them by yes or no without qualification; were we obliged to do so, we should answer the fourth question in the affirmative and all the others in the negative. We think that most careful observers will agree with Dr. James M. French, formerly lecturer on the theory and practice of medicine in the Medical College of Ohio (Textbook of the Practice of Medicine, third edition, New York, 1907, page 386), when he says:

This method of diagnosis is still employed by some physicians who regard it as both safe and sure, but a majority condemn it. There can be no doubt that in many instances its use lights up a latent process; the slight fever of reaction is continued into a fever of tuberculization, and the diagnosis is confirmed at the expense of awakening a sufficient demonstration, in most cases, of the existence of tuberculosis somewhere in the body, but the test should be employed with the utmost care, as a rule only when it is made advisable by special circumstances, and in full understanding of its dangers. It is highly probable, however.

that many of the reported unfavorable results have arisen from the use of too large and too frequent doses.

Concerning the therapeutic use of tuberculin Dr. French says (page 398):

The treatment with tuberculin has been almost entirely abandoned everywhere, on account of unfortunate results which were repeatedly observed after its administration. The new tuberculin (T R) has been found even more dangerous than the original. Employed in suitable cases, not too far advanced, and never when fever is present, it has been found of decided benefit and often curative in the hands of competent observers, notably Wright, of London, who first renders it sterile by heat and carefully regulates its administration by the opsonic index of the patient.

Calmette's device, that of dropping a weak solution of tuberculin into the conjunctival sac, may have some advantages, but it must not be forgotten that serious disease of the eye has been occasioned by it, not, however, eventually destructive, it is affirmed. As for the still newer application by inunction, the data are as yet far too few to furnish material for any general statement of opinion.

Rems Items.

New York University has conferred the degree of Doctor of Medicine on 12,786 graduates during the last three quarters of a century.

The Medical Department of the University of Louisville held its annual commencement on June 30th. The degree of Doctor of Medicine was conferred upon ninetynine graduates.

The Royal Sanitary Institute.-The twenty-fourth annual meeting of this organization will be held in Cardiff Wales, on July 13th to 18th, under the presidency of the Earl of Plymouth.

The Society of Physicians of Canandaigua, N. Y., held a meeting on the evening of June 11th. The principal feature of the programme was a paper by Dr. F. E. McClellan on Anæsthetics.

Examination of Food and Drugs in New Jersey .--During the month ending June 30, 1908, there were examined by the New Jersey State Laboratory of Hygiene 651 samples of food and drugs, of which 585 were found to be above the standard and 66 below.

A Chinese Hospital in Chicago.—It is reported that the Chinese merchants of Chicago have made plans for the establishment of a Chinese hospital in Chicago. The institu-tion will be equipped with all modern appliances and will have a complete staff of physicians and nurses. It will probably be located in the heart of the Chinatown district.

Donation to the Red Cross Hospital at San Mateo, Cal.—Mrs. Whitelaw Reid, wife of the American Ambassador to the Court of St. James, has placed the sum of \$10,000 at the disposal of the directors of this hospital, to be used in building an annex to the hospital. This hospital, which was built last year, was organized by Mrs.

Union County, N. J., Medical Society.—The regular monthly meeting of this society was held in Elizabeth on Wednesday afternoon, July 8th. The principal feature of Wednesday afternoon, July 8th. The principal feature of the programme was a paper by Dr. Charles Gilmore Ker-ley, of New York, entitled The Intestinal Disorders of Children in Summer. The discussion was opened by Dr. Henry L. Coit, of Newark.

The Mortality of Chicago.—During the week ending June 27, 1908, there were reported to the Department of Health of the City of Chicago 508 deaths from all causes, as compared with 455 for the previous week and 479 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.23. The principal causes of

death were: Apoplexy, 16; Bright's disease, 35; bronchitis, death were: Apoptexy, to, Bright s disease, 35, bronchistor, 6; consumption, 47; cancer, 25; convulsions, 3; diphtheria, 12; heart diseases, 38; intestinal diseases, acute, 41; measles, 7; nervous diseases, 17; pneumonia, 41; scarlet fever, 3; suicide, 14; typhoid fever, 7; violence (other than suicide), 41; whooping cough, 6; sunstroke, 14; all other causes, 135.

Contagious Diseases in Chicago.—During the week ending June 27, 1908, the following cases of communicable diseases were reported to the Department of Health: Measles, 177 cases; diphtheria, 71 cases; scarlet fever, 44 cases; whooping cough, 36 cases; tuberculosis, 26 cases; chicken pox, 22 cases; typhoid fever, 12 cases; smallpox, 2 cases; miscellaneous diseases of minor importance, 3 cases; total, 393 cases.

Indiana State Medical Association .- At the annual meeting of this association, which was held recently at French Lick Springs, the following officers were elected: President, Dr. George D. Kahlo, of French Lick Springs; hirst vice president, Dr. E. D. Freeman, of Osgood; recording secretary, Dr. F. C. Heath, of Indianapolis; treasurer, Dr. A. E. Bulson, of Eart Wayne. The part meeting will Dr. A. E. Bulson, of Fort Wayne. The next meeting will be held in Terre Haute, in October, 1909.

Two New Hospitals for Brooklyn.-Plans have been filed for two new hospitals for this borough, one to replace the Bradford Street Hospital in East New York, and the other to be located in Greenpoint. The new hospital in East New York will cost approximately \$250,000, and it is said will be, when completed, one of the finest hospitals owned by the city. The Greenpoint hospital will be an emergency hospital, and will occupy a private house.

American Hospital Association.-The tenth annual Canada, on September 22d, 23d, 24th, and 25th. The pre-liminary programme, which has just been received, in-cludes more than twenty papers on subjects relating to hospital management, and the meeting promises to be one of special interest and value. Among those who will present papers are Dr. James Alexander Miller and Dr. C. Irving Fisher, of New York, and Dr. D. L. Edsall, of Philadelphia.

A Day Camp for Consumptives in Buffalo.-This camp, which is situated on La Salle Avenue, near Main Street, was formally opened on July 1st, with appropriate ceremonies. The camp will accommodate thirty patients, who will be selected from the applicants at the dispensary of the Charity Organization Society. Dr. George J. Eckel will have charge of the camp, and a trained nurse will have supervision of the patients. It is said that there are 2,500 cases of tuberculosis in Buffalo, and an effort will be made to establish a municipal tuberculosis hospital in the near

The Health of Pittsburgh .- During the week ending June 27, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chicken pox, cases, o deaths; typhoid fever, 32 cases, 4 deaths; scarlet fever, 14 cases, 2 deaths; diphtheria, 4 cases, 1 death; measles, 96 cases, 6 deaths; whooping cough, 5 cases, o deaths; pulmonary tuberculosis, 19 cases, 11 deaths. The total deaths for the week numbered 156 in an estimated population of 565,000, corresponding to an annual death rate of 14.35 in 1.000 of population. The death rate for the month of January was 26.51 in 1.000 of population.

Charitable Bequests.—By the will of Thomas Cunningham, various institutions in New York, including St. Francis's Hospital. Little Sisters of the Poor, and St. Joseph's Home for Consumptives, each receive \$2,000.

By the will of John S. Cullen, St. Elizabeth's Hospital.

Watertown, Mass., receives \$300.

By the will of Maria Elizabeth Jones, the Free Hospital for Women in Brookline, Mass., the Industrial School for Crippled and Deformed Children in Boston, and the Children's Hospital in Boston, will each receive \$10,000; the

Home for Aged Couples in Boston, will each receive \$10,000; the Home for Aged Couples in Boston will receive \$5,000.

By the will of William Barr, St. Luke's Hospital, St. Louis, the St. Louis Children's Hospital, the Episcopal Orphans' Home, St. Louis, each receive \$10,000; the Protestant Orphans' Home, St. Mary's Infirmary, Bethesda Home, Memorial Home, Home of the Friendless and Blind Cirkl' Home, St. Louis, reals receive \$700,000,000, No. 10. Girls' Home, St Louis, each receive \$5,000: Orange, N. J., Memorial Hospital, The Record Ambulance, Maintenance Fund of Orange, and the Orange Orphan Asylum, each receive \$5,000.

The Wisconsin College of Physicians and Surgeons, Milwaukee, is to have a new free dispensary building and two new laboratories. The two new laboratories are to be for experimental physiology and pharmacology. The faculty of the college has also been enlarged, the following new instructors in the medical department having been ap pointed: Dr. B. F. Armstrong, lecturer on embryology and operative surgery; Dr. Walter T. McNaughton, assistant in pædiatric clinic; Dr. Simon M. Madison, instructor in surgery; and Dr. George F. Zaum, clinical lecturer on oph-thalmology and otology. It has been decided to raise the standard of admission to the college, to take effect in 1910.

Crusade for Clean Creameries in New Jersey.—The State Board of Health of New Jersey has taken steps to enforce the recently enacted law compelling owners of creameries throughout the State to keep their premises clean and thus insure pure and wholesome products. Following the receipt of complaints from New York and Philadelphia, circulars were issued to creamery men instructing them that the site of the creamery building must be dry. the surroundings completely sanitary, the entrance of flies barred by screens, all milk, cream, and butter properly iced, all utensils thoroughly sterilized every twenty-four hours, and the milk and cream conform to the standard of quality specified by the State law

The Lehigh Valley Medical Association.-The tenth annual summer meeting of this association was held at the Water Gap House, Delaware Water Gap, on Wednesday and Thursday, July 8th and 9th. On Wednesday evening Dr. E. L. Reed, of Philadelphia, delivered a lecture on Tuberculosis as Seen Under the Microscope and Its Treat-Tuberculosis as Seen Under the Microscope and its Treatment by Bacterial Products, which was illustrated by the projecting microscope. On Thursday morning, after the transaction of routine business, the president's address on Criminal Abortion was delivered by Dr. J. T. Howell, of Wilkes-Barre, Pa., and Dr. John G. Clark, professor of gynacology in the University of Pennsylvania, delivered an address on The Remote Effects of Abdominal Operations of the property of the prope tions, after which the annual dinner of the association was

A Movement for Raising the Standard of the Milk Supply.-The Bureau of Animal Industry of the Department of Agriculture is sending to householders throughout the country cards on which answers are requested to a number of questions relating to the milk supply. Among the questions are the following:

How many persons in your family. How many children under five years? How much milk do you consume daily. How much cream?

riow much cream?
What proportion used for drinking?
Why do you not use more milk?
Hase son ever examined the darve supplying you with milk or seen any report concerning it?

While the avowed object of the cards is merely the collection of data for the bureau, it is believed that better sanitary conditions and purer milk will be the result.

Infectious Diseases in New York:

He are indebted to the Bureau of Records of the De-partment of Health for the following statement of new cases and deaths reported for the two weeks ending July

| 1 Julie | Jun | Tune 27 | | | |
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Vital Statistics of New Jersey .- During the month ending June 15, 1908, there were reported to the Bureau of from all causes, an increase of 26 over the previous month, to than the extremental period in 1907. Of the total number of deaths, 444 were of infants under one year of age, 199 of dildren between one and the year of age, and 768 of per on instruction and and over. There were the after from typhoid fever 123 from measless 18 from ... t fever 2t from absorping cough, it from diph there a from malarial fever 306 from pulmonary tuber

121 from cancer; 22 from cerebrospinal meningitis; 345 from diseases of the nervous system; 289 from diseases of the circulatory system; 152 from diseases of respiratory system (pneumonia and tuberculosis excepted); 218 from pneumonia; 225 from diseases of digestive system; 190 There were 42 suicides from Bright's disease.

Personal.—Dr. S. A. Knopf, of New York, has been made an honorary president of the Congrès des Médecins de Langue Française de l'Amérique du Nord, which will convene in the city of Quebec during the celebration of the three hundredth anniversary of the founding of that city, July 20th, 21st, and 22d.

Dr. Charles R. Van Hise, president of the University of Wisconsin, has had the degree of Doctor of Laws con-

ferred upon him by Harvard University

Yale University has conferred the degree of Doctor of Science upon Dr. Graham Lusk, professor of physiology in the University and Bellevue Hospital Medical College. Dr. George Dock, professor of the theory and practice of medicine at the University of Michigan, has accepted the chair of medicine at Tulane University, New Orleans. Dr. Dock will take up his programmed where the fell terms Dr. Dock will take up his new work when the fall term opens.

The Samuel D. Gross Prize.—This prize of \$1,500 is awarded every five years by the Philadelphia Academy of Surgery to the writer of the best original essay on some subject relating to surgical pathology or surgical practice, founded upon original investigations. Candidates for the prize must be American citizens. Each essay must not exceed one hundred and fifty pages, octavo, in length; must be written in English by a single author; must be typewritten unsigned, distinguished by a motto only, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The unsuccessful essays will be returned if claimed within a year. The right is reserved to make no award if tlie essays submitted are not considered worthy of the prize. Essays must be sent in on or before January 1910, to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth Street, Philadelphia.

The Health of Philadelphia.-During the week ending June 20, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Malarial fever, I case, 0 deaths; typhoid fever, 45 cases, 4 deaths; scarlet fever, 44 cases, I death; chicken pox, 9 cases, 0 deaths; diphtheria, 50 cases, II deaths; measles, 206 cases. 6 deaths; whooping cough, 15 cases, 9 deaths; cerebrospinal meningitis, 2 cases, 0 deaths; pulmonary tuberculosis, 107 cases, 52 deaths; pneumonia, 21 cases, 32 deaths; erysipelas, 5 cases, I death; puerperal fever, I case, I death: mumps, 4 cases, 0 deaths; cancer, 20 cases, 25 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 5; diarrhœa and enteritis, under two years of age, 34; dysentery, I. The total deaths for the week numbered 403 in an estimated population of 1,532,738, corresponding to an annual death rate of 13.61 in 1,000 of population. The total infant mortality was 112; under one year of age, 84; between one and two years of age, 28. There were 52 still births, 27 males and 25 females.

The Southern Medical Association.—The annual meeting of this association will be held in Atlanta, Ga., on November 10th, 17th, and 12th. The officers of the organization are: President, Dr. B. L. Wyman, of Birmingham, Ala.; vice presidents, Dr. B. L. Wyman, of Birmingham, Ala.; Dr. H. M. Folkes, of Biloxi, Miss.; Dr. Frank Watson, of New Orleans, La.; Dr. G. R. Holden, of Jacksonville, Fla.; Dr. Raymond Wallace, of Chattanooga, Tenn.; Dr. A. L. Fowler, of Atlanta, Ga.; secretar; and treasurer, Dr. Oscar Dowling, of Shreveport, La.; councilors, Dr. D. F. Talley, of Birmingham, Ala.; Dr. Michael Floke, of Atlanta, Ga.; Dr. John M. McDearmid, of De Land, Fla.; Dr. W. W. Crawford, of Hattiesburg, Miss.; Dr. W. W. Butterworth, of New Orleans, La.; Dr. George W. Savage, of Nashville, Tenn. Officers of sections: Section in Medicine—Chairman, Dr. Seale Harris, of Mobile, Ala.; secretary, Dr. H. E. Mitchell of Birmingham, Ala. Section in Surgery—Chairman, Dr. W. F. Westmoreland, of Atlanta, Ga.; secretary, Dr. J. L. Crook, of Jackson Lenn. Section in Ophthalmology Chairman, Dr. J. F. Herron, of Jackson, Tenn.; secretary, Dr. A. B. Harris, of Birmingham, Ala The Southern Medical Association .- The annual

Bith of Current Aiterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL. July 2, 1908.

Theodore Tronchin. 1709-1781. A Sketch,
By Frederick C. Shattuck.
An Unusually Extensive Milk Borne Outbreak of

An Unusually Extensive Milk Borne Outbreak of Typhoid Fever, By Charles Harrington. A Glomerular Lesion of Experimental Nephritis, By Henry A. Christian. The Menace of the Swimming Tank, By Carollus M. Cobb. Alphamonobrom Isolvalerylurea. A New Nerve Sedative and Sommifacient. By William Henry Porter.

A Glomerular Lesion of Experimental Nephritis.—Christian has observed a glomerular lesion while studying some experimental renal lesions. The lesion consists of the appearance in the glomerular tuft of small, round or oval, rarely irregular, homogeneous droplets, varying from a half to four microns in diameter. These droplets appear in the wall of the capillaries making up the glomerular tuft, and do not occur either in the lumen of the capillaries or in the space between the glomerular tuft and the capsule of the glomerulus except in rare instances, when their position might be explained as an artifact in preparation. They were not found in the epithelium lining Bowman's capsule. In some glomeruli only a few scattered droplets occur, while in others they are very numerous. Very often in a glomerulus they tend to occur in groups of three to six or eight, and where the larger groups are found, almost always some of the droplets are considerably coarser than others of the same group. In some rabbits almost every glomerulus contains many droplets of fairly large size; in others the droplets are uniformly smaller. In some rabbits some glomeruli contain numerous droplets while adjacent glomeruli are free from them. This focal distribution seemed to have no relation to the other lesions of the kidney, and no cause for it was to be made out. In kidneys showing slight degrees of the lesion, only here and there a glomerulus showed a few fine droplets In a series of twentysix successive rabbits studied in this connection. these droplets were found in the glomeruli of thir-Thirteen of this group of animals teen animals. had received doses of uranium nitrate, and of these thirteen, eleven showed the lesion in a varying degree. The other two rabbits which showed this glomerular lesion were animals which had received doses of potassium bichromate. There were four such animals, and two of these showed the lesion slightly marked. The animals failing to show the lesion had been treated as follows: One rabbit had received both potassium bichromate and mercuric chloride, three had received trypan red, two cantharidin, and two arsenic. All of these substances were given subcutaneously. One animal had been killed without having received any toxic dose because it showed a slight spontaneous albuminuria. In most cases the animals were killed rather than allowed to die spontaneously. That they had received sufficient poison to produce a renal lesion was shown by the occurrence in all of the animals of albuminuria and cylindruria of varying degree. The droplets stain intensely blue black with Mallory's

phosphotungstic acid hæmatoxylin stain, and resist decolorization with ferric chloride for a long time. With eosin and methylene blue they stain pale red. The exact nature of the droplets is not known. The very frequent occurrence of these hyaline droplets in the glomeruli of animals receiving uranium nitrate, and their absence in the other animals, suggests a direct causal relation between the lesion and the drug.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. July 4, 1908

Neurological Teaching in America, By T. H. Weisenburg.

The Growth of Educational Requirements and Opportunities in Stomatology. Chairman's Address before

The Serum Treatment of Epidemic Cerebrospinal Meningitis, By CHARLES HUNTER DUNN. Treatment of Meningococcic Meningitis with Flexner

Serum, By Frank Spooner Churchill.
Observations on the Thyreoid and the Parathyreoids,
By Herman Tuholske.

Cases of Very Generalized Polyneuritis

8. Cases of Very Generalized Polylethius,
By Philip Zenner.
9. Pathology in Dental Colleges,
10. Dementia Præcox. A Composite History of Two
Hundred Cases with Blood Findings in Fifty Cases,
By H. D. Purdum and R. E. Wells. By M. A. BLISS.

5, 6. The Serum Treatment of Epidemic Cerebrospinal Meningitis. - Dunn makes a report based on a series of forty consecutive cases of epidemic cerebrospinal meningitis treated with Dr. Flexner's antimeningitis serum. The disease may be divided into the following types: 1. The well known fulminating type, in which the progress of the disease was so rapid that the patients when seen were already in an extremely serious condition, with profound coma and weak heart (three cases). 2. Severe cases, in which the patients were unconscious, or in violent delirium, with poor general condition (six cases). 3. The common type, in which the patients were not unconscious, but very apathetic or in mild delirium, with fairly good general condition when seen (nineteen cases). 4. The mild type, in which the patients were perfectly rational, with headache, rigidity, or retraction, and good general condition (six cases). 5. The chronic type, in which the patients were seen late in the course of the disease. unconscious, but without fever or active symptoms (six cases). The nine fatal cases in the series throw a certain amount of light on the limitations of the value of the serum. Of these nine, five were cases seen late in the course of the disease, at a time when the patients were in the well known chronic stage. unconscious, and without fever or active symptoms. In one of these the serum was not given until the patient was actually moribund. Of the other four cases, one was of the fulminating type, one a very severe case, and one patient died of an intercurrent bronchopneumonia, coming on after the temperature had come down to normal and all meningeal symptoms had subsided. The last case was one of average severity, in which the serum appeared to produce a slight improvement in the beginning, but

which later appeared uninfluenced by the antiserum. advanced into the chronic stage, and a fatal result ensued after many weeks of illness. The author's belief in the great value of the Flexner antimeningitis serum is based not chiefly on its apparent effect on the mortality of the disease, but on the very marked and striking effect which its use appears to produce in individual cases. It so modifies and changes the course of the disease as to present a very sharp contrast with the course usually seen in cerebrospinal meningitis treated by other methods. The three principal effects of the use of the serum seem to be: First, to produce a fall of temperature; second, to produce a rapid improvement in the patient's general condition, accompanied by a more or less marked relief of certain symptoms; and third, to cut short the course of the disease. Another notable effect of the serum is seen in the successive examinations of the cerebrospinal fluid during the period of its use. This effect is most striking in early cases, in which the cerebrospinal fluid contains large numbers of diplococci. In such a case a great many intracellular diplococci are observed in the fluid withdrawn by the first lumbar puncture. Twenty-four hours after the first injection the fluid presents a strikingly different picture. The whole number of organisms seen is much smaller, but the chief change is that the majority are intracellular, only rare extracellular forms being seen. The third lumbar puncture shows still fewer diplococci, and those only intracellular. In the fourth fluid, after three doses there are frequently no diplococci to be found, or, at most, very rare intracellular forms. As to the amount of serum which should be given, the author was at first afraid to inject amounts larger than the quantity of cerebrospinal fluid withdrawn. After several patients, to whom small doses had been given, had shown a less favorable course, more prolonged illness, and a tendency to relapse, he began to use larger doses. A few patients showed signs of collapse immediately after an injection, but in no case were these signs of long duration, nor did they end in death. He believes that 30 c.c. can be given usually with perfect safety, even when smaller amounts of fluid are withdrawn. He has given, without any bad results, as much as this when no fluid was withdrawn. One can judge to a certain extent now far it is safe to go by the feeling of resistance to the injection of the serum. In cases in which larger amounts of fluid are withdrawn he believes 45 c.c. should be given at a dose. The daily injection of the serum in most cases seemed to be effective. After four doses have been given, if, after one or two days the case proves resistant, or at any time if there is a tendency to relapse, this treatment should be repeated. It is a question whether in some severe cases the serum should not be administered oftener than once in twenty-four hours. In two very severe cases death occurred in spite of the early use of the serum. In both of these cases a notable improvement was shown after the first dose and continued up to within a few hours of the time he arrived to give the second injection. Then both patients began to grow rapidly worse, so that then the second injection was given the condition of each was practically hopeless. He thinks it is possible these patients might have been saved by more frequent use of the serum, and he believes fulminating cases should be very closely watched and provision made for giving a second dose at any time. Dunn concludes that the use of the Flexner antiserum is of great value in epidemic cerebrospinal meningitis. He believes its value to be comparable to that of diphtheria antitoxine in diphtheria. The use of the serum at times aborts the disease, frequently rapidly relieves its symptoms, shortens its course, lessens the liability to sequelæ, and greatly reduces its mortality. 3. The serum should be used as early as possible in all cases, even of suspected epidemic meningitis. 4. It should be frequently repeated as long as there are symptoms or any tendency to relapse. 5. Late chronic cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief by its use. 6. Some cases are resistant.-Churchill reports his experience with eleven patients suffering with meningococcic meningitis, whom he treated with Flexner's serum. As a rule, the patients were more comfortable after a puncture and injection, though in one or two of the cases this did not take place for several hours after the puncture. The immediate effect of this procedure seemed to stir up the patient. None of the punctures were done under an anæsthetic, but he believes that there would be considerable saving of wear and tear in certain patients if they were given an anæsthetic, for example, those not very toxic, but in a fairly conscious condition. The first sign of permanent improvement noticed in at least five of the patients was a clearing up of the mental condition. They became perfectly rational after an injection (not always the first one), were more quiet, while the rigidities were still very marked. It was a curious sight to see the patient lying in bed with head strongly retracted, yet with no expression of pain; quiet, looking about, and interested in the ward doings. Churchill concludes that, taken with the cases already reported by Flexner and the other investigators, the results of this treatment of meningococcic meningitis are most remarkable. As one watches the behavior of these patients after one, two, or three injections of this serum, he is impressed with the astonishing change which comes over them, the clearing mentality, the unsuffering expression of countenance, the evident comfort, even with a still retracted head and rigid muscles, and he is filled with an optimism as to the ultimate result. Enough has been done by the serum to warrant its use on a wide scale, and it is not too strong a statement to make that, given a case suspected to be meningitis, it is our duty to do a lumbar puncture and, if we get a cloudy fluid, to inject the serum at once and repeat it if bacteriological examination prove the case to be one of the meningococcic variety.

7. Observations on the Thyreoid and the Parathyreoids.—Tuholske remarks that ligation of the thyreoid veins produces dilatation of the capillaries with increased pressure, transudation of blood plasma through the endothelial capillary tubes into the extravascular spaces until the pressure of the plasma in the intercellular spaces equals the pressure in the capillaries. We might count on the exape of some extravascular fluid by the lymphatics. The effect of the transudate at first is a mechanical

one; there is a crowding of the cells, an interference with oxygen admission, the retention of carbonic acid, and asphyxia. In this condition the vagrant or indifferent cells, the least fit to survive, suffer a degenerative process and die, while the limitation of arterial afflux brings the gland cells from hyperactivity to the normal. As part of the process the connective tissue stroma would increase and, in the later contraction, lessen the size of the gland-in other words, restore it to a condition near the nor-The result of the experiments on dogs distinctly demonstrates the success of the procedure, which in reality consists in the production of a Bier's passive hyperæmia.

MEDICAL RECORD

July 4, 1908

The Miracles at the Tomb of B. François de Paris, By Joseph Collins.

Recurrent and Abductor Paralysis of the Larynx. In-Recurrent and Abductor Faralysis of the Larynx. Introductory Remarks on Anatomy and Physiology;

Etiology of Paralysis of Central Origin,
By J. W. Gleitsmann.

A Suggestion as to the Dietetic Treatment in Dilatation of the Cesophagus,
By Max Einhorn.

Inflammation of the Circumflex Nerve,

By CHARLES F. DISEN.

An Unusual Case of Cerebrospinal Meningitis Treated with Antimeningitis Serum, By H. N. MOELLER.

Collapse After Injection of Diphtheria Antitoxine, By FIELDING LEWIS TAYLOR.

The Miracles at the Tomb of B. François de Paris.-Collins observes that, studied in the light of our present day knowledge of the clinical manifestations of hysteria, there is very little in the records of the miracles wrought at the tombs of sacred appellants or by "secour" that transcends our understanding. The investigations of neurologists, and particularly those of France, have shown that the subjective and objective symptoms which the various individuals whose histories are related in such detail by M. de Mongeron, are those that constitute the signs and the symptoms of the "attack" of the disease. These signs have such definite characteristics and associations that they are rarely to be confounded with those of organic disease. Such characteristics and associations are to be found in every case related in extenso by de Mongeron. The "representations," the ecstatic states, the epileptoid state, the state of contortions and passionate attitudes, and the state of delirium, which are described in such detail, are no less and no more typical and characteristic than those described in such monographs as that of Paul Richer on major hysteria. After an examination of the literature of previous centuries, one reads with amazement the statements of strayed theologians and semiphysicians, that functional nervous diseases are increasing rapidly at the present time. They cite in substantiation of such alleged increase the fact that psychasthenia was not to be found in any standard dictionary until 1901, and thoat neurasthenia came into being only a generation ago. If their opinion and judgment concerning existing conditions are no more reliable than those of the past, they need not be taken very seri-

A Suggestion as to the Dietetic Treatment in Dilatation of the Œsophagus.—Einhorn re-

marks that if from the dilated œsophagus fluids do not get into the stomach, the failure may be caused by one of two things: (1) Lack of peristalsis of the œsophageal muscles; (2) hermetic closure at the upper or lower part of the œsophagus. The closure need not be-and usually is not-of an organic nature, and bougies or sounds do not find any difficulty in passing the entire canal. The walls of the cesophagus may, however, lie in such close apposition or may be folded in such a manner either at the beginning or at the cardiac end, that is absolutely air tight. This prevents fluid from escaping from the cesophagus, just as from a pipette nothing can drop if we close the upper end with the thumb. To facilitate the drainage of the esophagus into the stomach, all hermetic closure of the œsophagus must be overcome and a continuous canal between the two organs must be established. The drainage tube is constructed in the following manner: A soft rubber tube 30 mm. in diameter and 21 inches in length is provided with a large number of apertures from the lowest part to 7 inches above it. There are two marks at 17 and 21 inches from the end, and the entire tube is provided with a mandrin. The drainage tube with mandrin is introduced by the patient himself immediately after taking fluid or semifluid food. The mandrin is then removed and the tube is moved up and down for about half to one minute between the marks at 17 and 21 inches, and is then withdrawn. Moving the tube to and fro hastens this process, as it tends to eliminate the closure at the cardia.

BRITISH MEDICAL JOURNAL. June 20, 1908.

Nine Hundred Cases of Tuberculous Disease of the Hip, Treated at the Alexandra Hospital, with a Mortality of Less than Four Per Cent.,

By A. A. BOWLBY. Remarks on the Functions of an Out Patient Department,
By W. OSLER

The Future of the Voluntary Hospital and its Relation to a Reformed Poor Law Medical Service. By L. E. SHAW

General Hospitals and the Provident System, By E. C. BEALE.

Home Hospitals for the Middle Classes By G. RANKIN.

Notes on the Construction of Cottage Hospitals, By H. P. ADAMS.

A Note on Separate Operating Rooms and their Management,

The Promotion of Uniformity in the Registration of

Diseases in Hospitals, By R. F. The Dental Needs of the Poor of London, with Special

Reference to School Children and (Administrative Provisions) Act, 1907,
By J. G. TURNER.

Tuberculosis of the Hip.—Bowlby gives his experience in the treatment of hip disease in children under twelve years of age at the Alexandra Hospital. This hospital was founded in 1867, with the object of treating tuberculous disease of the hip without operation other than the opening of abscesses-that is, by rest and by extension, and by good nursing and food; and it was stipulated that the length of time the children were to remain in the hospital was to be in no way limited. In 1879 the Clinical Society instituted an investigation into the relative merits of nonoperative and operative (by excision) treatment of tuberculosis of the hip.

In the Alexandra Hospital from 1867 to 1879 the mortality of nonoperative cases was twenty-six per cent. The writer became connected with the hospital in 1887. Since then he has treated 900 cases, with a mortality of less than four per cent. Not one of the patients has been treated by excision of the hip joint. No child was discharged unless all the active signs appeared to be at an end, and all children were made to walk on crutches for at least one year after it was no longer necessary to confine them to bed. If, when improvement had set in and the acute stage of the disease was past and pain had disappeared, the child was allowed to walk too soon there was apt to be a return of the symptoms. No child was discharged who had to wear a splint; a Thomas's splint never takes the place efficiently of complete rest in the recumbent position and the application of extension. All the discharged children were kept under observation, in some instances for many years, and were readmitted if there was any recurrence of the pain, a residual abscess, etc. Disease of both hips made treatment very unsatisfactory, as it was impossible to get the child up as soon as if it had one sound limb on which to walk with the aid of crutches. Disease of both hips indicated a peculiar susceptibility to tuberculosis, many such children having spinal caries in addition. Pulmonary tuberculosis was hardly met with at all, and very few of the children had tuberculous disease of the glands of the neck, the disease appearing to expend itself on the osseous tissues. But it does not do to suppose for a moment that a child who has tuberculosis of the hip has that tuberculous lesion only. So that we must try and treat the child himself, and not merely the hip disease. many cases the patient can cure the tubercle that is in him if only he is given sufficient help. In opening abscesses antiseptic surgery should have its fullest possible scope. If pyogenic organisms obtain an entrance to a place where there is tuberculous disease, they have an infinitely greater opportunity of destroying the tissues than in healthy people. Not only does tuberculosis predispose the tissues to this successful invasion, but the pyogenic organisms, in their turn, damage the tissues and allow them to be more easily invaded by tubercle. The line of treatment adopted at the Alexandra Hospital is as follows: First, there is absolute rest in the recumbent position, the child not even being allowed to sit up at all, such sitting up meaning movement at the hip joint. The joints involved are kept absolutely quiet, splints being used at first to ensure this if necessary. Extension is applied in the long axis of the limb in the position in which that limb lies most easily. As the muscles allow the limb to come into a better position the leg is got to lie flat on the bed, the object of this being to put the limb into the best position for subsequent progression, supposing that the joint is stiff ultimately. The amount of weight to be applied to the limb to effect extension is small. Very few children require more than two pounds; no child under the age of twelve years will require more than four pounds, and that only for a short time. Abscesses should be opened aseptically, and the contents having been cleared out most completely and yer gently, adequate drainage for a few days should be provided for In many cases the drainage

tubes can be removed within a week or so. There is too great a tendency to make multiple incisions, and it should not be done as a rule unless the abscess comes very close to the skin at two or more points. The general treatment means good food; careful nursing, very great care in the dressing of wounds, a certain amount of iron and cod liver oil, sending them away to country convalescent homes, and treating them as much as possible in the open air. The extent or degree of completeness of recovery is largely dependent upon the age at which the disease attacks the patient and upon the length of time it has been going on before treatment is commenced. The earlier the child is attacked by the disease, the more likely it is to have some permanent lameness. In very small children, where the head of the bone is tiny, only a moderate amount of disease will spoil the whole head of the bone. But if the child is from seven to eight years and the case is taken early, in a large proportion the child recovers with a thoroughly useful limb. The writer holds that the operation of excision is unsound. Excision of the hip is never actually performed, the only bone removed being the head of the femur. There is no possibility of sawing off the acetabulum, and at best it is only scraped. Again, in order to get clear of all tubercle and to avoid infecting the surrounding tissues, much more bone must be removed than is actually diseased.

LANCET

June 20, 1008.

Mehtensis Septiciemia (Malta or Mediterranean Fever (Melroy Lectures, II), By W. H. Evre. Congenital Dislocation of the Hip and its Treatment, By H. A. T. FAIRBANK. The Supports in Chief of the Female Pelvic Viscera,

By R. H. PARAMORE.
Thirty Consecutive Cases of Appendicitis with Diffuse

By C. A. R. NITCH Peritonitis, On the Measurement of the Stereoscopic Visual Acuity,
Acidity of the Urine,
A Case of Sarcoma of the Right Os Innominatum

Simulating Appendix Abscess, By E. H. R. HARRIES.

1. Melitensis Septicæmia.—Eyre, in the second of the Melroy lectures, takes up the symptoms, etc., of Malta or Mediterranean fever. Of the clinical appearances the most important and indeed the only one that aspires to constancy, is the repeated alternation of pyrexial attacks with periods of normal or nearly normal temperature. In this respect the disease compares closely with typhoid with many relapses. The character and duration of the fever often vary considerably throughout the course of the disease, so that while in many cases the fever is of the remittent type, in others it is intermittent; in some it is continuously high, and in a few continuously low; at almost any stage of the disease one type of pyrexia may give place to another. The Micrococcus melitensis and its products appear to have a selective influence upon the nerve tissue, more particularly peripheral, but also central, and neuritis in some form or position is noted in at least one half the cases. The neuritis, usually of the sciatic, less frequently of the circumflex and peroneal nerves, commences suddenly and severely; the acute symptoms pass off rapidly, leaving a subacute or chronic affection of the nerve which may continue

long after the convalescence has otherwise been established. Such a neuritis is particularly liable to exacerbation in response to alterations in atmospheric conditions. Čutaneous and deep reflexes are usually increased. In long continued attacks headache, insomnia, nervous prostration, and mental incapacity are common sequelæ and point to the effect of the disease on the central nervous system. The respiratory and urinary systems are usually unaffected. Effusions into joints, particularly those of the shoulder, knee, and ankle, often occur in the course of the disease, and the specific micrococcus has been isolated in the fluid. The costosternal and costochondral articulations are also frequently affected and sometimes suppurate. But the "rheumatism" so frequently noted in Malta fever is in the majority of cases neuritis pure and simple. Effusion into the tendon sheaths at the wrist and ankle is sometimes noted. The sexual system shares in the general nervous irritability, and priapism leading to masturbation is said to be common. Orchitis and epididymitis are common metatases. Hyperpyrexia and cardiac failure are the only direct complications of a serious nature. Pyogenic foci due to the specific micrococcus are uncommon, the small skin furuncles of such frequent occurrence being due to staphylococci. In the early stages of the disease the diagnosis from malaria, typhoid fever, miliary tuberculosis, acute rheumatism, or septicæmia due to some other microorganism by the clinical symptoms alone is well nigh impossible. Consequently the diagnosis of Malta fever is based upon (1) the agglutination reaction, that is to say, the agglomeration of the individual cocci present in a laboratory cultivation of the specific micrococcus by certain specific antibodies-agglutinins-present in the blood serum of the patient; (2) the isolation of the Micrococcus melitensis from the blood of the peripheral circulation, from the splenic pulp, or from the urine and fæces. The prognosis of Malta fever, as far as life is concerned, is good. The mortality of the disease is not more than two per cent. of the gross incidence. Not more than ten per cent. are convalescent within one month; in fifty per cent. the disease lasts two months, in twenty-five three months, and in the remainder more than that. Of drug treatment there is none. Cold baths or cold packs should be used every three hours, while the temperature is over 103° F.

6. Acidity of the Urine.-Watkins states that for some years the French have alleged to have obtained very marked success in the treatment of certain diseases by the administration of the various combinations of phosphorus, which are selected according to the degree of the acidity of the urine. The treatment is based upon the assumption that the blood is a definitely acid fluid, and that the reaction of the urine is an index to the state of the blood. The so called alkalinity of the blood is due to the presence of the bicarbonates, which are acid The acidity of the blood is mainly due to the presence of acid phosphates, but their acid reaction to litmus is masked, owing to excess of the bicarbonates, which turn red litmus blue. The estimation of the acidity of the urine per litre is carried out by Boussingault's method of titration with a standardized solution of calcium sucrate. The end reaction is indicated by the appearance of a faint haze, which

is caused by the precipitation of tricalcium phos-This method does not estimate the total quantity of acids present, but it represents the power which the urine has of dissolving tricalcium phosphate, which latter is the physiological acidity, the practical medical acidity. It is important that patients suffering from a loss of phosphates should take a diet rich in these salts. As regards drugs, phosphoric acid and its salts, according to the degree of acidity of the urine, are all useful. The diseases most amenable to this treatment are neurasthenia, chronic arthritis, diabetes mellitus, chronic eczema, psoriasis, fermentative dyspepsia, and gout. The author reports a number of illustrative cases, showing the good results obtained by the administration of various forms of phosphoric acid.

LA PRESSE MEDICALE

May 30, 1908.

- Early Syphilitic Paralyses and Neuralgias, By DeBove.
- Surgery of the Biliary Passages, By Ch. Dujarier. Bouillon of Legumes or Salt Solutions? By R. Romme.
- 1. Early Syphilitic Paralyses and Neuralgias. -Debove reports cases in which neuralgias and paralyses of the third, fifth, and seventh cranial nerves were present in the early stages of syphilis.

June 3, 1908.

- Clear Hepatic Cells. Normal Hepatic Spaces By GILBERT and JOMIER.
- A Symptom of Perforation of the Appendix,
- By PIERRE DELBET. Treatment of Adherent Tonsils. Hook, New Punch with By R. LEROUX.
- 2. A Symptom of Perforation of the Appendix.—Delbet considers that when a patient has been relieved by treatment while he has appendicitis, and there is a sudden recurrence of the pain, this recurrence indicates a perforation of the appendix and the necessity for immediate operation. He reports several cases which support this opinion.

LA SEMAINE MEDICALE.

June 3, 1908.

The Characteristics of the Venous Pulse in Hypertrophy of the Left Heart Associated with Renal Heart and with Aortic Insufficiency, By BARD.

Venous Pulse in Hypertrophy of the Left **Heart.**—Bard is of the opinion that the tracings of the venous pulsation, which have been generally neglected, are of equal if not superior value to the cardiograms of the ventricle and the sphygmograms of the arteries. They do not reveal pathological lesions of the right heart, but present well marked characteristics in certain lesions of the left heart, particularly in hypertrophies of renal origin and in those which accompany aortic insufficiency. Bard first shows a tracing of the physiological venous pulse, and then goes on to describe and illustrate the variations met with in several pathological conditions, with special reference to those mentioned, and presents his explanation of the same.

BERLINER KLINISCHE WOCHENSCHRIFT May 25, 1908.

- Concerning the Fundamentals of Wright's Theory of Opsonins.

 By F. Neufeld Opsonins,
- Late Results of a Shot Wound in the Right Temple.

 By M. Bernelment.

 Concerning the Measurement of Fluids in the Feeding of Nephrities.

 By H. Strautss.

 By H. Strautss.

- Toxic Osteoperiostitis Ossificans in Chronic Jaundice, By BEUTTENMÜLLER.
- The X Ray Picture of the Normal Thorax with Especial Reference to the Diagnosis of Incipient Phthisis, By Max Levy-Dorn and H. Cornet. Constriction Paralysis, By Ernst Oberndörffer.
- The Sanatoria for Tuberculosis. Reply to the Paper of Professor Aufrecht, By Ernst Pütter.

Concerning the Practical Signification of the Measurement of the Blood Pressure in the Physical Therapy, By A. LAQUEUR.

- I. Theory of Opsonins.—Neufeld says that the appearance of opsonins in the specific treatment with tuberculin and dead staphylococci is to be considered at the present time only in the sense that we in like manner conclude from the appearance of agglutinins the presence of a specific process of reaction in the organism, without seeing in the opsonins with certainty the immune bodies which immediately call forth the process of healing, or to directly assume that the quantity of the same is a direct indication of the degree of the immunity produced
- 4. Toxic Osteoperiostitis Ossificans in Chronic Jaundice.—Beuttenmüller reports three cases, the first that of a man forty-seven years of age, who had had chronic jaundice for three years, during the last six months of which his hands and feet had gradually and painlessly increased in size. When he came under observation his hands were greatly enlarged and resembled paws, the fingers were thickened so as to resemble sausages, the terminal phalanges not especially swollen. The feet and toes were similarly affected. There were marked swellings of the distal epiphyses of the forearms and legs which were not painful or tender to pressure. The second patient was fifty-six years old, and suffered from many symptoms which seemed to indicate carcinoma of the biliary passages. The fingers were clubbed. The third patient was a woman, twenty-four years of age, who had suffered from chronic jaundice for over a year, and had a slight degree of clubbed fingers. The diagnosis made was that of biliary cirrhosis, with possibly a cholangitis.
- 6. Constriction Paralysis.—Oberndörffer reports a case in which a slight paresis of the median nerve and a serious paresis of the ulnar of the right arm, together with atrophy of the muscles supplied, was produced by the constriction of the arm of a man, twenty-eight years old, with ropes by the police while endeavoring to control him while drunk and disorderly.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT May 19, 1908.

- Concerning the Histogenesis of Myeloid Leuchæmia,
- By Schridde. Critical and Experimental Contributions to the Question of the Applicability of Bier's Stasis to Cerebral Meningitis By Stursberg.
- Concerning Hæmolytic Complement in Human Milk
- By Feaundler and Moro.
 Specific Complement Joining Material in the Blood
 Scrum of Typhobacilli Carriers, By Schöne.
- New Clinical Method for the Determination of
- Concerning the Clinical Signification of the Cutaneous and Percutaneous Tuberculin Reactions, Methods of von Pirquet and of Moro, in Adults,
- By EMMERICH. 7. Pathological Anatomy of Febris Recurrens,
 - By RARINOWHSCH.

- Serum Treatment of Puerperal Fever, By MÜLLER. The Treatment of Acne Rosacea,
- By VON ZEISSL. 10. Concerning Nursing and its Influence on the Development of the Child, By NAGEL. The Question of Ability to Nurse,

 Concerning the Clinical Signification of the Chronic
- Inflammatory Nonhypertrophic Tissue of the Palate Ву Миск. and Tonsils.
- Obstacle to Delivery by Vaginal Fixation. Cæsarean Section, By KOWNATSKI.
- 14. A Rare Case of Idiosyncrasy Against Egg Albumen together with a Contribution to the Valuation of the 'Flesh Juice" Puro, By LANDMANN.
- 15. The Treatment of the Hæmorrhagic Diathesis in the New Born, 16. Concerning Tendenitis Ossificans Traumatica,
- By NEUWIRTH. 17. A Contribution to the Internal Administration of Arhovin in Acute and Chronic Gonorrhœa. By BOTTSTEIN.
- 18. Advances in the Diagnosis of Tumors of the Brain By KNAPP. (Concluded),
- 1. Histogenesis of Myeloid Leuchæmia.-Schridde says that myeloid leuchæmia is to be considered as a systemic disease belonging to the large class of metaplasias. The leuchæmic cell proliferations spring from capillary cells, from which they form themselves through heteroplasia or indirect metaplasia. Thus we can speak of the myeloid leuchæmic proliferations in the different organs as true myeloid metaplasias.
- 3. Hæmolytic Complement in Human Milk .--Pfaundler and Moro assert that in almost all tests with human milk the hæmolytic complement was demonstrated.
- 5. New Clinical Method for the Determination of Opsonins.--Kämmerer suggests the following method: I, The serum is obtained and centrifuged in the usual way. 2, An emulsion of bacilli is prepared, not in the usual physiological salt solution, but in a 1.5 per cent. solution of sodium citrate. This emulsion must not be too thick nor too thin. 3, The blood from one and the same person is taken at the same time from the finger and added to the other substances in the Wright's capillary pipettes. Each pipette is marked and will contain: pipette, two parts blood of healthy person A, one part immune serum, one part emulsion of bacteria. Second pipette, two parts blood of healthy person A. one part normal serum, one part emulsion of bacte-The mixing is done according to Wright's method; the presence of the emulsion of bacteria prevents coagulation. Quick work is necessary. The pipettes are sealed and placed for half an hour in the oven. Examinations are best made on cover glasses with Canada balsam, as its transparency assists in the counting. The contents of the two pipettes differ only in that the one contains immune serum and the other normal serum.
- The Cutaneous and Percutaneous Tuberculin Reactions.—Emmerich says that the ointment reaction of Moro furnishes a markedly less number of positive reactions in individuals who are clinically free from tuberculosis, that it is more easily applied than the cutaneous inoculation and is absolutely harmless, that it is more apt to fail in progressive tuberculosis than the cutaneous inoculation, and that it is useful for diagnostic purposes in adults only to a limited degree.

May 26, 1908.

Concerning the Presence of Typhus Bacilli in the Blood of Persons who Are Not Suffering from By Russe, Typhoid Fever, Concerning Congenital Word Blindness, By PETERS.

Severe Hæmorrhages During Labor, By Schickele. Treatment and Prognosis of Suppuration of the Middle 4. By VON RUPPERT. Ear.

By STIMMEL. Bier's Stasis in Otitis Media, The Vaccine Test by Means of Subcutaneous Injection in Vaccination, By Knöpfelmacher.

The After Treatment of Laparotomies, By JERUSALEM Concerning the Behavior of the Lymphatic Glands in Many Affections of the Joints, By PLATE.

Subcutaneous Total Rupture of the Brachial Plexus without Injury of the Bones, By WEBER.

 Io. Amylene Hydrate in Eclampsia,
 II. Concerning the Treatment of Eclampsia in Children with Atropine Methyl Bromate,
 By HEIMANN. Simple Aid in Obstetrics,

New Points in the Treatment of Suppurative By BERGEL, MÜLLER, and PEISER. 14. Historical Contribution to the Study of Perityphlitis, By MULLER.

Typhus Bacilli in the Blood of Persons Not Suffering from Typhoid Fever.—Busse reports four cases, two of miliary tuberculosis, one of consumption, and one of pneumonia, in which typhus bacilli were found in the blood, although none of the three were suffering from typhoid fever. These cases prove that the presence of typhus bacilli in the blood is not a positive proof that the patient is suffering from typhoid fever.

2. Congenital Word Blindness.-Peters reports a case of this nature met with in a boy, twelve years of age, and also a doubtful case, in a boy eleven years of age, which illustrates the difficulties met with in the distinction of this condition.

Severe Hæmorrhages During Labor. -Schickele reports several cases of severe hæmorrhage during labor, and concludes that the condition of the general nutrition, the bodily strength, and healthy organs play an important part in the prognosis. Women who have frequently borne children, particularly those who have borne children almost yearly, and very emphatically those who have had severe hæmorrhages during previous labors, are greatly endangered by a renewed hæmorrhage. Cases of placenta prævia which have lost blood several times before delivery have an uncertain prognosis. It is bad when the pulse is accelerated. Finally he remarks that it is noticeable how much better the abundant hæmorrhages are borne in cases of ruptured extrauterine pregnancy.

6. The Vaccine Test.—Knöpfelmacher asserts that in doubtful cases the vaccine test by subcutaneous injection is competent to distinguish between the sickness produced by cow pox and smallpox in a nonvaccinated person.

7. After Treatment of Laparotomies.-Jerusalem applies to the region of the scar an oval suction glass and keeps it in place for twenty to thirty minutes every two or three days. He states that after several of these applications, from six to twenty-two in his cases, the tenderness disappears, resistance is no longer felt, the scar becomes softer, and the patients are freed from pain. Obstinate obstipation is benefited by the same means.

Subcutaneous Total Rupture of the Brachial Plexus.-Weber reports the case of a man, thirty-nine years of age, who was thrown from an automobile and was taken in an unconscious condition to the hospital. The surgeon found two fractures of the left arm, one about the elbow joint, the other of the radius. These fractures were reduced and, a proper dressing applied. When the dressing was removed four weeks later the hand, forearm, and arm were found to be paralyzed, together with the muscles of the shoulder. All the muscles supplied by the brachial plexus were involved, and there was a total loss of sensibility over the same area. No trace of injury to the vertebra, scapula, clavicle, or humerus could be detected even with the x rays, but a little above the middle of the clavicle there was a tender point with abnormal resistance, which Weber believes to have been the site of the rupture of the plexus.

14. Historical Contribution to the Study of Perityphlitis. - Müller's contribution is the presentation of two cases reported by Schönlein of what would naturally be taken to be appendicular inflammation from the symptoms which were treated in 1841 for rheumatism of the abdominal muscles. Both recovered, the second after rupture of the abscess into the intestine, as shown by the passage per

rectum of a large amount of pus.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES June, 1908.

The Use and Abuse of Digitalis, By T. C. Janeway. The Clinical Study of Heart Cases, By L. A. Conner. Irregularities of the Heart Resulting from Disturbed Conductivity, By J. Erlanger. An Observation on the Jugular Pulse of Man.

By G. M. PIERSOL.

Primary Carcinoma of the Vermiform Appendix. A Study of Ninety Cases, Three previously unpublished, By C. A. McWilliams.

Primary Carcinoma and Endothelioma of the Vermi-form Appendix,

By A. O. J. Kelly. The Surgical Aspects of Dupuytren's Contraction,

By R. Russ. Torsion of Appendices Epiploicæ and its Consequences, By W. A. BRIGGS.

9. Primary Tumors of the Adrenal Gland in Children.
Report of a Case of Simultaneous Sarcoma of the
Adrenal and of the Cranium with Exophthalmos,
By W. Trleston and S. B. Wolbach.
10. Congenital Absence of the Gallbladder,

By E. S. STONE.

I. The Use and Abuse of Digitalis .- Janeway considers digitalis as one of the few indispensable drugs. The causes for its failure to give satisfaction are: (1) The use of inefficient preparations. (2) Use in unsuitable cases. (3) Improper dosage. (4) Improper methods of administration. (5) Neglect of other necessary therapeutic measures. following conditions must be fulfilled in order to get good results from its use: (1) The leaves must be from plants of the second year's growth, picked at the beginning of efflorescence, free from stalks, and carefully dried. (2) The dried leaves must be kept absolutely dark and free from moisture in sealed tin or glass containers, and for not more than one year. (3) The preparation dispensed must be freshly made from these leaves exactly as prescribed by the Dispensatory. The infusion, the tincture, and the powdered leaves are the trustworthy forms for administration. The action of digitalis is to increase contractility, tone, and irritability. It must not be given to slow the heart in tachycardia, or in fever, to produce diuresis in acute nephritis, or to remove an inflammatory pleural effusion. With rapid heart action it must be used only when there is insufficiency of the ventricles. Two drachms of a good infusion is a sufficient dose. It should never be pushed more than a few days without careful record of heart and pulse rate and of fluids taken and urine passed each twenty-four hours. In addition to the proper use of the drug, one should combine psychotherapy, cheer-

fulness, courage, and hope.

2. The Clinical Study of Heart Cases.-Conner believes that one should inquire not only into the existing subjective symptoms, but into the earlier history of the patient as well. Auscultation is believed to be sometimes a means of confusing and concealing a diagnosis. The importance is emphasized of studying the disturbances of the right side of the heart by means of the clinical polygraph. Orthodiography with the x rays is also of importance in studying the size, position, and form of the heart under normal and pathological conditions. Percussion is of the utmost importance, in order to outline both the relative and absolute dulness. The measurements of the heart which are of chief importance are: (1) The long diameter, the distance from the true apex to the point of junction between the upper right border of heart dulness and that of the great vessels. (2) The distance from the midsternal line to the point of dulness farthest to the right. (3) The distance from the midsternal line to the point of dulness farthest to the left. As to auscultation in mitral stenosis with tricuspid insufficiency, and a systolic venous pulse, the absence of presystolic mitral murmur means paralysis of the auricles. With

tricuspid insufficiency the systolic murmur at the

base of the sternum is often absent. A faint dias-

tolic murmur inaudible through the stethoscope may

often be heard through the naked ear. 3. Irregularities of the Heart Resulting from Disturbed Conductivity.—Erlanger quotes Gaskell, who concludes that in the normal heart of cold blooded animals the perceptible interval between the beats of the several chambers, sinus and auricles, auricles and ventricles, is due to the existence in their junctions of a natural block to the passage of the impulse. In the mammalian heart it can be shown that interference with the conduction of the excitation wave is due to two blocking points, one at the junction of the rudiments of the sinus with the auricles, the other at the junction of the auricles with the ventricles. Partial and complete block may be established experimentally between any two parts of the heart, provided one of the parts is spontaneously rhythmical, by narrowing the junctional connection between them. The same forms of block may probably be produced by pathological processes which sever the functional connection of one part with another. A transitory block being established by a lesion, the less rhythmical part at first stops beating, but if it possesses spontaneous rhythmicity it soon begins to beat again, first in complete block and then in partial block with all the rhythms observed, for example, in the transitory auriculoven-

5. Primary Carcinoma of the Vermiform Appendix .- McWilliams found the sexes about equally divided in seventy-seven cases of primary cancer of the appendix. Concretions have no discoverable ætiological importance in this form of cancer. The disease develops most frequently at the site of strictures, obliterations of the tip, and chronic inflammatory lesions. Enlarged lymphatic glands were present in nine per cent. of his analyzed cases. Primary cancer of the appendix occurs in 0.4 per cent. of the appendices operated on. Of the cancers found at the appendix twenty-two per cent. were columnar cell, fifty-three per cent. spheroidal cell, nine per cent. of the transitional type, and four per cent. colloid. The disease tends to infiltrate contiguous structures, but not to produce distant metastases. Secondary growths were found in six and six tenths per cent, of the cases. There was very little tendency to recurrence in the cases which had been operated upon. In forty-six operations by the author there was no mortality. A diagnosis cannot be made prior to operation, but in any suspicious case the exsection should be as wide as possible. It is impossible to say, at present, whether cancer is primary or secondary to coincidental chronic inflammatory lesions.

8. Torsion of Appendices Epiploicæ and Its Consequences.—Briggs reaches the following conclusions: I. Torsion of appendices epiploicæ is more frequent than the meager literature of the subject would reply. 2. It usually occurs in persons who are somewhat obese during and after middle life. 3. Intraabdominal torsion of these structures may simulate appendicitis, hepatic colic, cholecystitis, and various other intraabdominal diseases. Torsion of these structures in a hernial sac may cause all the local symptoms of an acute omental or intestinal, femoral, or inguinal hernia. 4. Torsion of these structures may result in adhesions and bands, and their usual consequences. 5. The masses of fat may become infected and cause general peritonitis. 6. In the present state of our knowledge an accurate diagnosis of torsion of these bodies prior to operation would seldom be possible. 7. An operation is always indicated at the earliest possible mo-

AMERICAN JOURNAL OF OBSTETRICS.

June, 1908

- 1. Pyelitis in Pregnancy and the Puerperium,
 By H. N. Vineberg.
- 2. The Placental Transmission of Bacillus Typhosus, with Report of a Case, By B. A. Соног.
- 3. Cæsarean Section. Discussion of Indications for. Report of a Case with Recovery of Mother and Child,
 By J. HALPENNY.
- 4 Extranterine Pregnancy at Term. With Report of a Case, By W. R. Nicholson.
- Case,

 The Diagnosis of Extranterine Pregnancy,
 By G. R. Holden.

 The Theraputic Measures of Value in Convalescence
- 6. The Theraputic Measures of Value in Convalescence from Abdominal and Pelvic Operations,

 ly E. H. Granden
- The Neglect of Plastic Surgery about the Pelvic Outlet, By W. D. Ward.
 Chondrodystropia Fotalis, with Report of a Case.
- By G. C. Waiss.
- Pyelitis in Pregnancy and the Puerperium.
 Vineberg finds this disease not uncommon, though not generally recognized by the profession at large.

Its causation may consist in obstruction in some portion of the urinary tract, or in pathogenic bacteria. It has long been recognized that the pregnant uterus might compress the ureters, but the exact manner by which it is brought about is not definitely settled. As to infection, there may be as causative agent gonorrhœa, pus cocci, colon bacilli, or tubercle bacilli. The right kidney is affected in the majority of instances, and both kidneys in about 15 per cent. of all cases. There are two varieties of the disease, differing as to the onset, one being preceded by bladder disturbance and general malaise, the other coming suddenly, with chill and fever. The kidney may be sensitive, but is not usually enlarged. The urine may be high colored, albuminous, acid, with specific gravity of 1.006 to 1.020, pungent odor, and sediment of pus, epithelia, blood corpuscles, granular casts, and bacteria. The acute symptoms usually subside in a short time, but there may be recurrences during pregnancy or the puerperium. The condition should be distinguished from typhoid fever, appendicitis, and cholecystitis. The prognosis is good for the mother, but bad for the child. Rest, milk diet, ice bag over the kidney, and urotropin helmitol or some form of opiate may constitute the treatment.

3. Cæsarean Section.—Halpenny thinks this operation should be done: (1) In all cases of pelvic contraction with a conjugata vera of less than 5.5 centimetres. (2) In cases with conjugata vera between 5.5 and 7.5 centimetres in which the patient has not been infected, is not unduly reduced, and in which the child is living. (3) In cancer of the cervix with undilatable os. Craniotomy or embryotomy should be performed: (1) In cases of pelvic contraction, in which the conjugata vera is not less than 5.5 centimetres, and the child is not alive. (2) In cases of pelvic tumors which cannot be displaced from the pelvis under an anæsthetic. (3) In all cases in which the mother dies suddenly, the child being dead. (4) In central implantation of placenta prævia, the child being dead. (5) In dystocia, with dead child, due to ventrofixation or ventrosuspension. Vaginal Cæsarean section should be done in eclampsia cases with rigid os. Pubiotomy or symphyseotomy should be done in cases with conjugata vera of not less than 7 or 7.5 centimetres, the child being alive.

5. • The Diagnosis of Extrauterine Pregnancy. -Holden finds that there are no pathognomonic signs of this condition. The mass in the pelvis is the one sign which is invariably present. quently happens that a diagnosis can be made only by carefully questioning the patient as to all her symptoms, and then weighing the evidence for and against ectopic gestation. A clinical history is difficult to obtain if a woman is stupid, phlegmatic, or reticent. The most important symptoms are amenorrhœa, followed by an attack of severe abdominal pain, with subsequent vaginal hæmorrhage. If an unilateral mass is then observed in the pelvis there is probably an extra uterine pregnancy which has ruptured or undergone a tubal abortion. Diagnosis prior to rupture or tubal abortion will be made only in case there may be symptoms which suggest to the physician that a careful examination of the pelvis

should be made.

Proceedings of Societies.

AMERICAN GYN. ECOLOGICAL SOCIETY.

Thirty-third Annual Meeting, Held in Philadelphia on May 20 and 28, 1908.

The President, Dr. J. MONTGOMERY BALDY, of Philadelphia, in the Chair.

(Concluded from page 43.)

The President's Address alluded to the disappearance by death of most of the founders and early members of the society and the necessity of choosing wisely in filling their places. He thought there were now too many members on the Atlantic Coast. There were a scientific and a social side to each member. The latter was not unimportant. The Transactions of the society contained the best of all that had been done in gynæcological science. He questioned the value of two sessions for "symposia." It tended to develop abstracts rather than exhaustive papers, and directly interfered with the president's address. The great work which had been done in gynæcology forbade that it should pass as a distinct specialty. He now desired to recommend improvement in anæsthesia, by legislation if necessary, removing its dangers and increasing its usefulness. A salaried anæsthetist should be in every hospital, and a woman should be preferred for the position.

The Condition of the Mucosa in Cases of Uterine Myomata.—Dr. T. Cullen, of Baltimore, said that the condition of the mucous membrane was largely determined by the situation of the myoma. In large submucous myomata the mucous membrane was stretched, but not necessarily diseased; in some cases, however, it was hypertrophied. in others atrophied. In cases in which it was greatly compressed by a tumor it might disappear altogether. In mucous polypi, which were usually single and not very large, the mucous membrane was, of course, hypertrophied. The glands in such growths were usually normal. The course of events with submucous myomata was that the mucous membrane gradually became thin, the glands disappeared, then the stroma, and finally only the superficial epithelium was left. When this disappeared, sloughing and suppuration of the tumor would follow. The glands of the mucous membrane might become dilated and cystic. Hæmorrhage was due to stretching and rupture of the vessels, the veins being sometimes greatly dilated. In multiple submucous myomata the intermediate mucous membrane became greatly thickened. Endometritis with myomata was rare, except as a consequence of sloughing, or of association with pyosalpinx. Tuberculous disease as an associated condition was rare. Carcinoma of the uterine body had been found in connection with myoma twenty-five times.

Intraabdominal Pressure.—Dr. R. R. SMITH, of Grand Rapids, Mich., spoke of the ideas prevailing at present upon this subject, many of which were erroneous. Intraabdominal pressure was governed by the same mechanical laws which obtained outside the body. It might be positive or negative, that is, above or under fifteen pounds to the square inch. according to the mechanical conditions. In the horizontal posture there was little variation in the pressure, even with women at term. If the tissues were stretched in certain positions, the inside pressure would increase, but the pressure did not ordinarily increase in the presence of ascites and abdominal tumors. If in the presence of the conditions mentioned the position was changed from the standing to the knee chest or the horizontal, the inside pressure would increase. The pressure diminished or became negative when the abdomen was opened, especially in the lumbar region. The pressure was negative when pleural effusions depressed the diaphragm. The pressure was increased by muscular contractions of the abdominal wall.

Some Further Experimental Work in Severing the Pelvic Vessels in Bitches, and its Bearing on Ruptured Ectopic Gestation Sacs.—Dr. H. Robb, of Cleveland, reported that in this experimental work death had resulted only when blood was lost amounting to three per cent. of the bodily weight. Women who suffered with a ruptured tubal gestation sac seldom died from hæmorrhage, but from hæmorrhage and shock. In twenty-nine dogs which were experimented upon, there was no death from hæmorrhage alone. The anatomy of the dog's uterus was shown, and the method of dividing the uterine vessels in various positions. Hæmoglobin and other blood tests were made. The bleeding in fourteen experiments stopped within ten minutes, after which salt solution was injected. This was not followed by renewed hæmorrhage, and it had no influence on the clots already formed. In cases in which the hæmoglobin diminished, an occluding clot was always found in the divided vessels. It was inferred that in women with whom the hæmoglobin remained stationary an operation might with safety be deferred.

Vertical and Horizontal Amputation of the Uterus.-Dr. H. A. Kelly, of Baltimore, believed that in the nonmalignant diseases of the uterus a conservative line of treatment should be the rule. This should obtain particularly in women who were under forty, with whom it was desirable to preserve the function of menstruation. This could be done by subsection of the body of the uterus, retaining the body of the mucosa and reducing an excessive uterine flow to normal. The ordinary conservative operation upon the tubes and ovaries did not always have a well defined plan, and might not control a tendency to excessive hæmorrhage. The conservation of a portion of the uterus with fibroid disease gave excellent results with those who were still menstruating. The same was true in regard to the inflammatory or hypertrophic entanglement or subinvolution of the uterus, the mucous membrane being preserved for some distance above the os internum. The operation was of a grade between total and supravaginal hysterectomy. The resection might be horizontal or vertical, a wedge being removed from the middle of the organ and a circular or oval/stump being left, which was closed and then covered by peritonæum. The operation was also useful/for bad cases of prolapse of the uterus. In any dase, it left a small uterus, which was still competent for menstruation, the endometrium being preserved as far as possible. The horizontal section was not likely to be followed in pregrame: but the vertical section might be. It

was not asserted that this operation was a new suggestion, as similar procedures had been advocated by others.

Dr. A. Martin said that similar work had been done in Europe. He had often resected the uterus after myomectomy, but he had not published his cases, as he wished to see whether pregnancy would follow. The possibility of pregnancy was undoubted, but whether the pregnancy could go to term was another matter. Rupture would probably take place in some cases, and hence if pregnancy did occur, the case should be watched with the greatest care to guard against accident. He had performed his resections by the vaginal route. The patients had usually done well. Menstruation had continued for a short time, and then ceased. The stump was well covered with peritonæum, and as much of the operation was a desirable one for young women.

Dr. F. PFANNENSTIEL had performed the operation which had been described, and in most of his cases for chronic metritis. He had also performed it upon elderly women suffering with prolapsus. He removed a wedge of tissue, as described by Dr. Kelly, and left only a small portion of the body of

the uterus.

Dr. H. J. Boldt had been performing the operation for years, especially in young women. It was an advisable operation for the treatment of chronic fibrosis.

Dr. W. G. Wylie, of New York, preferred hysterectomy or myomectomy to the operation described. Even after these operations, menstruation might be continued, at least for a time. The influence of small fibroids during labor was slight. After the age of forty, there was danger of malignancy, and he would then prefer hysterectomy to Kelly's operation. The mucous membrane should be saved by any possible measure before the age of forty, and in many cases no operation would be required.

and in many cases no operation would be required. Dr. S. C. Gordon referred to the hypertropic or subinvoluted uterus as belonging to one of the classes of cases under discussion. He had treated that condition satisfactorily since 1884 by removing a wedge from either side of the cervix. In fibroid disease, if there were more than one or two tumors, he would advise hysterectomy, especially if the patient was older than thirty-five. He*was not favorable to the performance of the so called conservative operations. Too often it was necessary to operate again, and most women objected to this

Dr. J. R. Goffe saw no advantage in conservative surgery if the object was merely to retain a vaginal or even a menstrual discharge. To retain ovulation was another matter, as it meant the possibility of pregnancy.

Dr. A. L. Smith was opposed to so called conservative operations. It meant much trouble to the surgeon from the dissatisfaction of his patients, who

too frequently remained uncured.

Dr. E. H. Grandin thought the proposed operation identical with supravaginal hysterectomy. He believed the continuance of the menstrual discharge would be desirable for most women. He agreed with those who objected to partial operations. If the ovary was diseased, one should remove it entirely or let it alone.

Dr. C. C. Frederic thought there was no objection to leaving a few small fibroids in the uterus. Their presence was frequently not inconsistent with normal pregnancy and labor. He knew of but one case in which fibroids thus left had caused subsequent trouble. For young women myomectomy was

preferable to hysterectomy.

Dr. Kelly realized that he had only crystallized, as it were, the thoughts of others. He retained the endometrium as a distinct feature in this operation, and it thus differed from supravaginal hysterectomy. In more than 200 myomectomies, there had been subsequent trouble in only two per cent. of the cases, and pregnancy had resulted in twelve cases. He believed that women were much better when they continued to menstruate, and he had experienced little trouble with those who had required a

repetition of operations.

Six Cases of Cæsarean Section Necessitated by a Previous Ventrofixation.—Dr. E. B. CRAGIN, of New York, defined ventrosuspension as attachment of the uterus to the abdominal partition by a single ligature or cord of new tissue, and ventrofixation as attachment to the same by a broad band of tissue between the fundus and the parietal peritonæum. Either was unsafe, the latter eminently so, should pregnancy occur, for the uterus must develop under abnormal conditions. This implied possibilities of uterine rupture or abnormal and ineffectual labor, the normal mechanism of labor being entirely perverted. Dystocia might exist in the form of transverse presentation, ineffective labor, or obstructed labor. Of course, many women on whom the operation had been performed had experienced labor without dystocia, but, on the other hand, forty cases of Cæsarean section had been reported in which the operation was necessitated by ventrofixation. That dystocia following ventrofixation should occur six times in the experience of one man (the author), and be so marked as absolutely to indicate Cæsarean section, was evidence of the frequency of this sequel. The fixation operations had all been performed by different operators, thus eliminating the personal equation. Notwithstanding these bad results, ventrosuspension, which might in time become ventrofixation, was still frequently performed. Thus, a ventrosuspension which allowed an easy labor and normal puerperium in the first postoperative confinement, might become a ventrofixation, and demand a Cæsarean section, as had occurred in the last case of the author's series. The conclusion which logically follewed was that ventrofixation, and probably ventrosuspension, were not safe operations for the treatment of posterior displacements of the uterus during the childbearing age.

Dr. W. WILLIAMS, of Baltimore, had had an experience of four cases of dystocia dependent upon operations for ventrofixation. In two of the cases Cææsarean section had been required, while the other two were merely cases of very difficult labor.

Dr. R. C. Norris had seen two cases of dystocia resulting from ventrofixation. There were thick bands of new tissue in the anterior uterine wall in both these cases. He agreed with the reader of the paper that there were very many ventrofixation operations which were not followed by dystocia. He hardly thought that ventrosuspension should be

unqualifiedly condemned. The treatment of retrodisplacements by shortening the round ligaments was much the safer way of meeting the difficulty.

Dr. E. P. Davis had not only had experience with dystocia as a sequel of ventrofixation, but he had seen grave intestinal complications from the same source. He had the conviction that the operation

had no field in childbearing women.

Dr. H. D. FRY had seen thirty or forty cases of natural labor following ventrofixation, but he had also seen one case of Cæsarean section. Better than Cæsarean section was the plan of cutting the adhesions binding the uterus to the parietes whenever the diagnosis was made, and allowing labor to progress normally at term.

Dr. W. G. WYLIE stated that he had always been opposed to the operation, and had seen cases in which dystocia had occurred. These cases proved to him that his original opinion was the correct one. The operation was almost always followed by stretching of the uterus, and in many cases preg-

nancy was an impossibility.

Dr. G. C. Gordon did not favor the operation, but treated retrodisplacements of the uterus by

shortening the round ligaments.

Dr. A. L. SMITH was not opposed to the operation of ventrofixation, but did not think it appropriate for childbearing women.

Dr. CRAGIN said that it was possible to cut the tissues between the uterus and the abdominal parietes, but many of the cases were not seen until labor had begun. It was not within the intended scope of his paper to suggest a substitute for ventro-

fixation.

Is Pubiotomy a Justifiable Operation?-Dr. J. W. WILLIAMS, of Baltimore, had had an experience of thirteen cases of this operation, with no maternal deaths, and in only one case had a woman been seriously sick. He employed the Döderlein technique, and had observed hæmorrhage in only one case. The puerperium had been normal in only six of the cases, various minor difficulties having developed. The average duration of the puerperium had been thirty days. In all the cases the women began to walk by the end of the third week, and were dismissed in good condition less than a week later. In one third of the cases there was a permanent mobility between the cut ends of the bone. This did not interfere with locomotion, and perhaps was of assistance in permitting subsequent spontaneous delivery in one of the cases. In ten of the cases the patients were as well as before the operation; three had had subsequent deliveries. operation came into competition with premature induction of labor and other operations in favor of the child. Patients usually did well, unless infected. The feetal mortality was two per cent., which was greater than after the induction of labor, but, on the other hand, the children were better developed. and it would probably supersede that method of delivery. It was much better than symphysiotomy, both for child and mother. It was indicated only in cases in which the conjugata vera measured more than seven centimetres; hence it was not a competitor of the Cæsarean section. Its mortality was far lower than that of the last mentioned procedure, but the latter was to be preferred, if the case is seen just before labor began. It was par-

ticularly applicable to the border line cases, affording a safe method of delivery, after subjecting a patient to the test of several hours in the second stage of labor, while in Cæsarean section the mortality rose steadily with each hour that elapsed after the onset of labor. It compared favorably with craniotomy, the high forceps operation, symphysiotomy, and version. It should be a primary operation as an alternative to craniotomy; it should not be performed in cases of infection, and it should not be performed by the general practitioner.

Dr. E. G. GRANDIN objected to publiotomy as compared with Cæsarean section. He did not think it suitable for an elective operation. In the border line cases, Cæsarean section had less morbidity and less mortality. Induction of labor was to be preferred, if performed after manual dilatation, with version, followed by gauze packing in the uterus. He was willing to accept the author's statistics for

the present.

Dr. F. PFANNENSTIEL had performed the operation twenty-seven times, with no fœtal mortality. He limited the operation to cases in which the conjugata vera measured at least seven centimetres. It should not be performed in cases of infection or by the general practitioner, and should be used

only on special indications.

Dr. E. P. Davis thought that most of the border line cases should have the test of labor. This and other major obstetric operations should be done only by those who had had considerable experience in obstetric surgery. The teachers of obstetrics should caution students and young practitioners in regard to major operations without first having an expert consultation.

Dr. R. A. MURRAY did not think favorably of pubiotomy. He believed in giving a doubtful case the test of labor and then doing a suitable operation, if necessary, under proper precautions.

Dr. B. C. Hirst did not favor pubiotomy for the class of cases in which it had been recommended by the reader of the paper. He would much prefer the premature induction of labor. In this operation the fœtal mortality with him, in a large number of cases, had been no greater than at term. He approved of Cæsarean section in preference to pubiotomy, and thought the latter should be classed with symphysiotomy and performed as frequently as possible.

Dr. H. D. FRY was quite decided in his opposition to pubiotomy. It involved danger to the child in the extraction of the head, and there was also very considerable danger from hæmorrhage. It had a morbidity of fifty per cent., which was perhaps greater than that of any other obstetric operation, unless it was symphysiotomy. One of its possible or probable consequences was septic phlebitis, and it should be limited to cases in which Casarean section could not be performed. As an alternative between this and Cæsarean section, he would certainly prefer the latter, if no other operation had

Dr. R. C. NORRIS was not convinced by the statistical arguments of the paper, though he admitted that he was favorable in a moderate degree to pubiestern in the public bone had been divided, there was need of very careful obstetric work in cases in which this operation was selected. The head was often in the occipitoposterior position and would consequently require very skilful treatment. While he was in favor of pubiotomy in a limited number of cases as an operation of election, he was also in favor of induction of labor, and would not accept the former as a substitute for the latter. The treatment of cases in which either of these operations was to be performed must be governed by the nature of the cases and by the skill of the obstetrician.

Retters to the Editors.

MERCURY IN TUBERCULOUS DISEASE.

43 St. Mark's Place, New York, June 29, 1908.

To the Editors:

As the subject of mercury in the treatment of consumption is growing in interest and application, may I be permitted to call your attention to a short article entitled Syphilis 28. Tuberculosis, which appeared in the Medical Record, vol. xlviii, page 910,

That short paper contained a report of a case of tuberculosis (complicated with syphilis) which cleared up after fifty mercurial inunctions of a drachm each. The case was a bad case of consumption, and its rapid cure with mercury was to me and my medical friends little short of a miracle.

After the publication of my case, a physician from Elmira, N. Y., reported in the Medical Record a similar experience. If I remember correctly, mercury thereafter was used in consumption by several physicians in this and foreign cities with favorable ROBERT ABRAHAMS.

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Diseases of the Breast With Special Reference to Cancer. By William L. Rodman, M. D., LL. D., Professor of Surgery in the Medicochirurgical College of Philadelphia, Professor of Surgery in the Woman's Medical College of Pennsylvania, etc. With Sixty-nine Plates, of which Twelve Are Printed in Colors, and Forty-two Other Illustrations. Philadelphia: P. Blakiston's Son & Co. 1998 Pp. 385 (Price, \$4.)

The author brings to the preparation of this volume the rich experience of twenty-five years' work in surgery, and he pays tribute to the teachings of the late Dr. Samuel D. Gross, who instilled into him a belief in the curability of malignant disease by free and wide removal.

The preliminary chapters are devoted to a description of the anatomy and physiology of the breast, inflammatory and tuberculous diseases, syphilis, actinomycosis, cysts, diffuse hypertrophy, and keloid; the remainder of the book discusses tumors in general. The author accepts Ribbert's classification as best for practical purposes, but uses War-

ren's classification, with some additions, in the text. Be the tumor benign or malignant, he believes it should be removed. In carcinoma he holds that plastic procedures are inadequate, disappointing, and inadequate to the pathological requirements necessary to deal with an infiltrating and disseminated malignant process. Palliative operations are useless, and no benefit has followed an operation for cancer en cuirasse. Inoperable cases may be treated by the x ray and by toxines. The work is most generously illustrated, many of the plates being in colors.

Abdominal Tuberculosis. By A. Ernest Maylard, M. B., B. S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow, etc. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xvi-360. (Price, \$4.)

The author is careful to explain at the outset that his book is to deal with tuberculous disease of al! the abdominal contents, not simply with such disease of the peritonæum, to which the term abdominai tuberculosis is sometimes unwarrantably restricted. The opening chapter is devoted to tuberculous disease in general, with special reference to modes of infection. Through most of the chapter there runs an apparent readiness to fall in with Koch's doctrine of the rarity of the transmission of the infection from the begine animal to man, and vice versa, but, in the light of recent investigations, it ends by leaving the question sub judice. The concluding chapter, too, by Dr. Walter K. Hunter, is on the subject of general tuberculous disease, but is limited to the matter of treatment. This last chapter is an admirable exposition of the present status of the therapeutics of the disease, both curative and prophylactic.

Between these two chapters lies the proper substance of the work. It is perhaps as good a presentment of the subject as could well be made by one man at the present time, but not marked by any striking feature. Fifty-one clinical histories of illustrative cases are introduced, and they are not too condensed for their purpose. The book is illustrated with fifty-seven half tone pictures, and they

are exceptionally excellent.

On pages 310 and 311 there is a very useful statement of the various theories as to the way in which simple abdominal section often proves beneficial in cases of tuberculous peritonitis. The author wisely says: "It is not possible to draw any positive conclusion regarding any one of these theories being more truly explanatory than another. There is this fact, however, that the cases in which success is most marked are those in which fluid is taken away, so that it would seem as if removal of some toxic agent gave the tissues a greater chance of overcoming such of the virus as remains.'

We are sorry that the author has not followed the Lancet's sensible suggestion, put forward several years ago, that it would be useful to attach different meanings to the words tubercular and tuberculous. using the former as synonymous with nodular and restricting the latter to the specific tuberculous disease. He uses the words indiscriminately, but tubercular far oftener than tuberculous. The proofreading throughout the book seems to us to have been rather carelessly performed, especially in the bibliographical lists. All things considered, however, the work is to be commended as a substantial addition to our literature of the subjects with which it deals.

BOOKS, PAMPHLETS, ETC., RECEIVED
Modern Medicine. Its Theory and Practice. In Original
Contributions by American and Foreign Authors. Edited
by William Osler, M. D., Regius Professor of Medicine
in Oxford University, England, Honorary Professor of
Medicine in the Johns Hopkins University, Baltimore, etc.
Assisted by Thomas McCrae, M. D., Associate Professor
of Medicine and Clinical Therapeutics in the Johns Hopkins
University, Baltimore, etc. Volume iv. Diseases of
the Circulatory System—Diseases of the Blood—Diseases
of the Spleen, Thymus, and Lymph Glands. Illustrated.
Philadelpina and New York: Lea & Febiger, 1908. Pp.
18-805.

Guide du médecin oculiste dans les accidents de travail. Guide du medecin oculiste dans les accidents de travail. Par le Dr. Caillaud, Assistant adjoint d'ophthalmologie des hôpitaux de Paris. Paris: Jules Rousset, 1008. Pp. 214. Insomnia and Nerve Strain. By Henry S. Upson, M. D., Professor of Diseases of the Nervous System in the Western Reserve University, etc. With Skiagraphic Illustrations. New York and London: G. P. Putnam's Sons, 1908. Pp. xiii-144. (Price, \$1.50.)

Die Orthoropitgengraphie. Anleitung zum Arbeiten mit

Die Orthoröntgenographie. Anleitung zum Arbeiten mit arallelen Röntgenstrahlen. Mit 32 Abbildungen. Von parallelen Röntgenstrahlen.

parallelen Rontgenstrahlen. Mit 32 Abbildungen. Von Dr. Franz M. Groedel, Bad-Nauheim. München: J. F. Lehmann, 1008. Pp. 76.
Sex of Offspring. A Modern Discovery of a Primæval Law. By Frank Kraft. M. D., Editor of the American Physician. Cleveland: B. Barsuette, 1008. Pp. 112.
Pharmacology. The Action and Uses of Druggs. By Maurice Vejux Tyrode, M. D., Instructor of Pharmacology in the Medical School of Harvard University. Philadel-phia: P. Blekjistonic Son & Co. 1008. Pp. 11225

phia: P. Blakiston's Son & Co., 1908. Pp. 1x-255.
Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Andrew Balfour, M. D., B. Sc., F. R. C. P. (Edin.), D. P. H. (Camb.), Director. Khartoum: Department of Education, Sudan Convergence 1906. Government, 1906. Pp. 255.

Miscellann.

How to Enter the Medical Reserve Corps.-A Medical Reserve Corps, as a constituent part of the Medical Department of the army, is authorized by an act of Congress, approved April 23, 1908, entitled "An Act to increase the efficiency of the Medical Department of the United States Army.' Its provisions are as follows:

SEC. 7. That for the purpose of securing a reserve corps of medical officers available for military service, the President of the United States is authorized to issue commissions as first lieutenants therein to such graduates of reputable schools of medicine, citizens of the United States, as shall from time to time, upon examination to be prescribed by the Secretary of War, be found physically, mentally, and morally qualified to hold such commissions, the persons so commissioned to constitute and be known as the Medical Reserve Corps. The commissions so given shall confer upon the holders all the authority, rights, and privileges of commissioned officers of the like grade in the Medical Corps of the United States Army, except promotions, but only when called into active duty, as hereinafter provided, and during the period of such active duty. Officers of the Medical Reserve Corps shall have rank in said corps according to date of their commissions therein, and when employed on active duty, as hereinafter provided, shall rank next below all other officers of like grade in the United States Army: Provided, That contract surgeons now in the military service who receive the favorable recommendation of the surgeon general of the army shall be eligible for appointment in said reserve corps without further examination: Provided further, That any contract surgeon not over twentyseven years of age at date of his appointment as contract surgeon shall be eligible to appointment in

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the regular corps. SEC. 8. That in emergencies the Secretary of War may order officers of the Medical Reserve Corps to active duty in the service of the United States in such numbers as the public interests may require, and may relieve them from such duty when their services are no longer necessary: Provided, That nothing in this act shall be construed as authorizing an officer of the Medical Reserve Corps to be ordered upon active duty as herein provided who is unwilling to accept such service, nor to prohibit an officer of the Medical Reserve Corps not designated for active duty from service with the militia, or with the volunteer troops of the United States, or in the service of the United States in any other capacity, but when so serving with the militia or with volunteer troops, or when employed in the service of the United States in any other capacity, an officer of the Medical Reserve Corps shall not be subject to call for duty under the terms of this section: And provided further, That the President is authorized to honorably discharge from the Medical Reserve Corps any officer thereof whose services are no longer required: And provided further, That officers of the Medical Reserve Corps who apply for appointment in the Medical Corps of the Army may, upon the recommendation of the surgean general, be placed on active duty by the Secretary of War and ordered to the Army Medical School for instruction and further examination to determine their fitness for commission in the Medical Corps: And provided further, That any officer of the Medical Reserve Corps who is subject to call and who shall be ordered upon active duty as herein provided and who shall be unwilling and refuse to accept such service shall forfeit his commission.

Sec. 9. That officers of the Medical Reserve Corps when called upon active duty in the service of the United States, as provided in section eight of this act, shall be subject to the laws, regulations, and orders for the government of the regular army, and during the period of such service shall be entitled to the pay and allowances of first lieutenants of the Medical Corps with increase for length of service now allowed by law, said increase to be computed only for time of active duty: Provided, That no officer of the Medical Reserve Corps shall be entitled to retirement or retirement pay, nor shall he be entitled to pension except for physical disability incurred in the line of duty while in active duty: And provided further. That nothing in this act shall be construed to prevent the appointment in time of war of medical officers of volunteers in such numbers and with such rank and pay as may be provided by law.

Officers of the Medical Reserve Corps have the rank of first lieutenant, mounted, and, when on active duty, receive the pay of that grade, namely, \$2,000 per annum, or \$166.66 a month.

At the end of five years' active service an increase of ten per cent. is received, making \$2,200 annually, or \$183.33 a month. This ten per cent. increase is given for each period of five years' active service, until at the end of twenty years the maximum increase of forty per cent. is received, making \$3.884.4 menth

Officers of the Medical Reserve Corps on active duty, in addition to their pay, are furnished with quarters either in kind or by commutation at the rate of \$36 a month. Fuel and light are also provided. When traveling on duty mileage is allowed, the amount usually being sufficient to cover all expenses of the journey.

On changing stations they are entitled to transportation for professional books and papers and

baggage, including household effects.

Being mounted officers, they are provided with horses and horse equipments when necessary. Groceries and other articles may be purchased from the commissary. Instruments and appliances and professional books and journals are liberally supplied for the use of all medical officers in the performance of their duties.

Leave of absence on full pay may be allowed at the discretion of the proper superior authority at the rate of one month per year. Absence from duty on account of sickness involves no loss of pay.

In addition to a limited number of officers of the Medical Reserve Corps who are on active duty with the army in time of peace, it is desired to maintain a list of qualified men all over the country who are willing to serve as medical officers in time of emergency. To such men the President is authorized to issue commissions, and it is expected that, as long as they are under commission, they may be relied upon to give service when called. Officers of the Medical Reserve Corps cannot be compelled to accept active service, but should it be declined when offered, the commission will be vacated. Nothing prevents Medical Reserve Corps officers serving with the militia, or with the volunteer troops of the United States, or in the service of the United States in any other capacity, and when so serving or employed they are not subject to call for active duty with the army. Officers of the Medical Reserve Corps who make application for active service may receive such assignment when the necessity exists.

Approved candidates for the Medical Corps who have fulfilled the entrance requirements will be temporarily commissioned as first lieutenants of the Medical Reserve Corps until they have passed through the Army Medical School and their fitness for the Medical Corps has been finally determined. (See circular of information for candidates for the Medical Corps.)

Appointment to the Medical Reserve Corps of the Army is made by the President after the applicant has passed a successful examination before an examining board detailed from the Medical Corps of the Army and has been recommended by the sur-

geon general.

Permission to appear before the board is obtained by letter to the adjutant general of the army, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident. He must also furnish certificates, based on personal acquaintanceship, from at least two reputable persons as to his citizenship, character, and habits.

An applicant for appointment in the Medical Reserve Corps must be between twenty-two and forty-five years of age, a citizen of the United States. a

graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have qualified to practise medicine in the State in which he resides.

The examinations for appointment in the Medical Reserve Corps will be held from time to time at convenient places throughout the country and will

embrace the following:

1. Physical examination. This will be thorough and will conform to that required for officers of the

army in general.

2. Examination of diplomas, certificates from State examining boards, certificates of membership in medical societies, and any other certificates or testimonials which the applicant may wish to submit.

3. An examination on the following practical subjects:

(a) Practice of medicine, including ætiology, clinical description, pathology, and treatment of diseases.

(b) Surgery—principles and practice.

(c) Obstetrics and gynæcology.

(d) Hygiene—personal and general, especially as to the prophylaxis of the more prevalent epidemic diseases.

This examination will be oral and sufficiently comprehensive to determine whether, in the opinino of the board, the applicant is (or is not) qualified to practise his profession under the usual conditions of the military service.

Should the oral examination in any subject be unsatisfactory the applicant may be required to take a written examination on that subject.

Successful candidates will be recommended to

the President for commission.

It is recognized that, except for the limited number of Medical Reserve Corps officers who are on active duty in the army, in time of peace there are few material inducements for representative physicians to apply for appointment in the corps. The possession of a commission from the President of the United States setting forth his confidence in the patriotism, fidelity, and abilities of the holder is, however, something that any one might be proud of, and the contact that the War Department will be able to maintain with the best class of young medical men throughout the land will, it is expected, be of great value in emergency.

It is especially hoped that medical officers of the militia of the various States may be sufficiently interested to secure positions on the Medical Reserve

Corps list.

Officers of the Medical Reserve Corps who may desire to enter the Medical Corps of the army must be between twenty-two and thirty years of age (except in the case of former contract surgeons who entered the service as such before the age of twenty-seven and who were in the service at the time of the passage of the act of April 23, 1908); they must fulfill all requirements for appointment in the Medical Corps that are imposed upon applicants who are not members of the Medical Reserve Corps. Full information in this regard is contained in the circular of information cited above, a copy of which will be furnished upon application.

Official Rems.

Health Reports:

The following cases of smattpax velicus fever, cholera and plague have been reported to the surgeon general United States Public Health and Marine Hospital Service, during the week ending July 3, 1908:

| auring the week ending Jul | | | |
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| mailpo | 1 350 | × 11. | |
| l'laces. | 1 1 | te Ca | ises leath- |
| \labama-Huntsville | June | 5 18 | 85 |
| Alabama—Mobile | June | 7-13 | I . |
| California—Los Angeles | . Dec | Ture Trees | Present |
| California-Cakland | . May | | 12 |
| alifornia-San Francisco | June | 0.29 | 1 1 |
| Illinois—General | 1. June | 14.2 | ~ |
| Illinois—Chicago | Lune | 1-31 | |
| Indiana-General | April | 1-30 | 93 |
| Kansas-General | April | 1-30 4 | 3- |
| Kansas Kansas (ity | . June | 8-15 | 3 |
| Kentucky-Covington | Lune | 31.3- | 3 |
| Louisiana-New Orleans | . June | 14-20 | 6 |
| Missouri-Conway | April | 20-June 19 | 29 |
| Missouri-Kansas City | . June | 14-20 | 2 |
| Missouri-St. Loseph | June | 7.20 | 1 |
| Nebraska-Friend | . April | 13-June 18 | 13 |
| Nebraska-South Omaha | June | 7-13 | I |
| New York—New York City | June | 14-20 | 1 |
| North Carolina—General | April | 14-20 | 61 |
| Ohio-Cincinnati | . Tune | 20-26 | 4 |
| Ohio-Dayton | June | 14-20 | 4 |
| Tennessee-Nashville | . June | 14-20 | I |
| Texas—Fort Worth | Lune | 1-31 | 9 |
| Places. Mabama—Huntsville. Mabama—Mobile | . May | 1-31 | 3.3 |
| Virginia \lexandria | June | 25-27 | 1.3 |
| Washington—Spokane | June | 7-20 | 25 |
| Wisconsin-12 (rose | Lune | 16-20 | I |
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| Smallpo | xF01 | eign. | |
| Arabia—Aden | May | 28-June 1 | 2 |
| Austria—Galicia | May | 24-30 | I |
| Brazil-Santos | May | 11-24 | 14. |
| Canada-Nova Scotia-Halifax | June | 14-20 | h |
| Ceylon—General | April | 1-30 | 2 |
| China—Hongkong | May | 10-16 | 3 1 |
| Egypt—General | May | 3-24 | 4 |
| Egypt—Cairo | May | 30-Tune 3 | 6 2 |
| Egypt-Suez | . May | 0-20 | 5 |
| Formosa | May | 2-9 | 1 |
| France—Paris | May | 31-June b | I |
| Great Britain-Liverpool | April | 30-June 0 | 1 |
| India-Bombay | May | 20-20 | 31 |
| India-Calcutta | May | 10-10 | 11 |
| Italy—Catania | May. | 22-June II | I |
| Italy—Palermo | May | 24-June 6 | 7 |
| Japan-Nagasaki | May | 17-24 | í |
| Japan-Osaka | . May | 10-10 | 20 17 |
| Various Arras Calientes | Lune | 8-14 | 3 |
| Mexico-Mexico City | . Mav | 10-16 | 3 10 |
| Mexico-Monterey | June | 8-14 | 1 |
| Philippine Islands-Manila | May | 3-9 1 | 11 4 |
| Russia—St. Petersburg | April | 27-30 | 19 12 |
| Spain—Barcelona | Tune | I-10 | ī |
| Arabia—Aden. Arabia—Aden. Austria—Galicia Brazil—Rio de Janeiro Brazil—Santos. Canada—Nova Scotia—Halifax Ceylon—General. China—Hongkong. China—Bhanghai. Egypt—General. Egypt—General. Egypt—General. Egypt—General. France—Paris. France—Paris. France—Paris. France—Paris. Iraly—Salentia—Liverpool India—Bombay. Italy—Catania Italy—Catania Italy—Catania Italy—Palermo. Jayan—Nasasaki. Jaya—Batavia. Jaya—Batavia. Jaya—Batavia. Mexico—Mexico City Wexico—Monterey. Philippine Islands—Manila Russia—Wassaw Spain—Baredona Spain—Valencia. Spain—Valencia. Turkey in Europe—Constantinoph Chekena India—Bombay. | June | 1-6 | 1.7 |
| Turkey in Europe—Constantinople | eJune | 1-7 | 7 |
| Cholora | -Forè | ign. | |
| India-Bombay | May | 20-26 | |
| India—Calcutta | May | 10-16 | 109 |
| India—Bombay. India—Calcutta. India—Madras. Straits Settlements—Singapore. | . May | 10-22 | 3 |
| Straits Settlements—Singapore | May | 10-10 | 1 |
| Yellow Fe | er—F | oreign. | |
| Brazil—ManaosBrazil—Para | May | 26-30 | 2 2 |
| | | | 4 4 |
| Pia , w | Fore | 131. | |
| Brazil-Rio de Janeiro | May | 11-17 | 4 |
| China—Hongkong | May | 10:10 | 11. |
| India-General | May | 9-10 | 5,708 |
| India—Calcutta | . May | 9.10, | 1.45 |
| Japan-Formosa | May | 23 3 | 27. |
| Peru-Callao | . May | 23 30 | 15 set 1 |
| Trinidad. | To I | une i | [1] 501 1 |
| Turkey in Asia Bagdad | June | 7.13 | |
| Brazil—Rio de Janeiro China—Hongkong India—General India—Bombay India—Bombay India—Calcutta Iapan—Formosa Peru—Callao Siam—Tongkah Turkey in Asia—Bandad Venezuela—La Chana Venezuela—La Chana | June | 10.2 | |
| Venezuela—La Cinana | Int e | 17 () | |
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Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and noncommissioned officers of the United States Public Health and Marine Hospital Service for the week ending July 1, 1908

CARLTON, C. G., Pharmacist. Granted leave of absence for

thirty days, from August 1, 1908.

DREW, A. D., Acting Assistant Surgeon. Granted leave of absence for thirty days, from July 3, 1908, without pay.
FRIEDMAN, H. M., Acting Assistant Surgeon. Granted leave of absence for twenty-eight days, from July 5,

GASSAWAY, J. M., Surgeon. Directed to proceed to Reedy Island Quarantine Station for special temporary duty, upon completion of which to rejoin his station at Phil-

adelphia, Pa.

Geddings, H. D., Assistant Surgeon General. Directed to proceed to Philadelphia, Pa., and Reedy Island Quarantine station, for special temporary duty, upon completion of which to rejoin his station at Washington, D. C.

Gieson, F. L., Pharmacist. Directed to proceed from Hono-

GISSON, F. L., Pharmacist. Directed to proceed from Honolulu, Hawaii, to Molokai, Hawaii, from time to time, as the exigencies of the service may require.
GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Directed to proceed to Baltimore, Md., for special temporary duty, upon completion of which to rejoin his station at the Hygienic Laboratory, Washington, D. C.; directed to proceed to Alexandria, Va., for special temporary duty, upon completion of which to rejoin his station.

Gray, George E., Acting Assistant Surgeon. Granted leave of absence for five days, from June 22, 1908.

Hobby, W. C., Passed Assistant Surgeon. Relieved from duty on examining board, San Francisco, July 6, 1908.

KING, W. W., Passed Assistant Surgeon. Detailed as recorder of examining board, San Francisco, July 6, 1908.

LAVINDER, C. H., Passed Assistant Surgeon. Leave of absence granted for four days, from June 16, 1908, amended so as to grant leave of absence for three days

OAKLEY, J. H., Passed Assistant Surgeon. Granted leave

of absence for four days

ONUF, B., Acting Assistant Surgeon. Granted leave of absence for two days, from June 20, 1908, on account of sickness.

ROBERTS, Norman, Assistant Surgeon. Granted extension of leave of absence for three days, from July 1, 1908.
SALMON, T. W., Assistant Surgeon. Granted leave of ab-

sence for seven days, from June 28, 1708, under paragraph 101, Service Regulations.

Wertenbaker, C. P., Surgeon. Granted leave of absence for three days, from July 1, 1908.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending July 4, 1908.

BAKER, F. C., Captain. Ordered from Fort Oglethorpe, Ga., to Chickamauga Park. Ga., for duty. CLARK, J. A., Captain. Relieved from further duty at Fort Oglethorpe, Ga., and from temporary duty at Madison Barracks, N. Y., and ordered to proceed on

Madison Barracks, N. Y., and ordered to proceed on August 1st to Fort Liscum, Alaska, for duty.

Grissinger, J. W., Captain. Relieved from duty at Fort Ethan Allen, Vt., and ordered to proceed on August 1st to Fort Egbert, Alaska, for duty.

Hanson, L. H., First Lieutenant. When relieved at Fort Liscum, Alaska, ordered to Seattle, Wash., for orders. Kinkpatrick, T. J., Major. Ordered from Fort Moultrie, S. C., to Chickamauga Park, Ga., for duty.

Lamson, T., Captain. Granted leave of absence for two months, with permission to ask extension of one

months, with permission to ask extension of one month.

Manly, C. J., Captain. Granted leave of absence in the United State from Inly 12 to September 15, 1008.

SCHMITTER, F., Captain. When relieved at Fort Egbert, Alaska, ordered to Seattle, Wash., for orders.

Vose, W. E., Captain. Ordered from Fort Des Moines, Ia., to Fort Mackenzie, Wyo., for duty in the field.

In the A. M. Captain Leit Fort Sam Houston, Lex. or duty at camp, Lean Springs, Lex.

WICKLINE, W. A., Captain. Left Army G. H., San Francisco, Cal., with one half of Company B, H. C., for duty at Leon Springs, Tex.

ZINKE, S. G., Captain. Ordered from Fort Des Moines

Ia., to Fort Mackenzie, Wyo., for duty in the field.

Ia., to Fort Mackenzie, Wyo., for duty in the field. The following medical officers left the General Hospital, Washington, D. C., with fifty men of Company C, H. C., for Chickamauga Park, Ga, Field Hospital No. 8; Captain C. R. Reynolds, First Lieutenant C. D. Cowles, Jr., First Lieutenant E. G. Huber, and First Lieutenant J. S. Lambie, Jr. The following medical officers have been ordered to report at Washington, D. C., on September 21, 1908, for examination for promotion: Majors William C. Borden, W. D. Crosby, G. L. Edie, C. B. Ewing, C. M. Gandy, J. R. Kean, W. D. McCaw, J. L. Phillips, E. A. Mearns. William Stephenson, and M. C. Wyeth.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Navy for the week ending July 4, 1008:

FREEMAN, J. F., Passed Assistant Surgeon. Detached from the navy yard, Boston, Mass., and ordered to the

Montana, when commissioned.

HOEN, W. S., Passed Assistant Surgeon. Detached from the California and ordered to continue treatment at the

Naval Hospital, Mare Island, Cal.

McDonnell, W. N., Passed Assistant Surgeon. Detached from the Severa and ordered to Camp Perry, Ohio, on July 5th, for duty in connection with the Navy Rifle Team.
PAYNE, J. H., Jr., Passed Assistant Surgeon.

from the naval recruiting station, Cleveland, Ohio, and ordered to the navy yard, Boston, Mass., and to addi-

URIE, J. F., Surgeon. Detached from the Pennsylvania and ordered to report before a naval retiring board at the navy yard, Mare Island, Cal., on July 10th, for examination for retirement, and then to the Naval Hospital for treatment. White, E. C., Assistant Surgeon.

recruiting station, Cleveland, Ohio.

Births, Marriages, and Deaths.

BAILEY—PERKINS.—In Woodstock, Vermont. on Tuesday, June 30th, Dr. Walter Channing Bailey, of Boston, and Miss Ruth Perkins.

BURLEY—COCHNANE—In Almont, Michigan, on Monday, June 22d, Dr. J. A. Burley and Miss Myra Cochrane.

LINCOLN—GARWOOD.—In Philadelphia, on Wednesday, June 24th, Dr. George Washington Lincoln and Miss Effie Julia Garwood

Julia Garwood.

Julia Garwood.
Muschlitz—Roper.—In Slatington, Pennsylvania, on Saturday, June 27th, Dr. C. H. Muschlitz, of Philadelphia, and Miss Minnie M. Roper.
NAULTY—ALEEE:—In Perth Amboy, New Jersey, on Wednesday, June 17th. Dr. Charles W. Naulty, of Philadelphia, and Miss Muriel Albee.
Roosa—Bullard.—In Buffalo, on Wednesday, June 24th, Dr. Charles Compton Roosa and Miss Mabel Jennison Paullard.

SACKS—RACOOSIN.—In Washington, D. C., on Sunday, June 14th, Dr. Samuel M. Sacks and Miss Freda Racoosin.

BANKS.-In Livermore, Pennsylvania, on Friday, June

Banks.—In Livermore, Pennsylvania, on Friday, June 26th, Dr. M. R. Banks, aged ninety-five years.
Burnett.—In New York, on Monday, June 29th, Dr. Peter V. Burnett, aged fifty-four years.
Fitch.—In Philadelphia, on Thursday, June 25th, Dr. Pelatiah Fitch, aged sixty-six years.
Lynch.—In Milwaukee, Wisconsin, on Thursday, June 25th, Dr. D. W. Lynch, aged sixty years.
SHADD.—In Washington, D. C., on Wednesday, June 24th, Dr. Furman J. Shadd, aged fifty-five years.
Wilson In Philadelphia Burday June 26th, Dr. William H. Wilson.

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WHOLE NO. 1546.

Original Communications.

THE CÆSAREAN OPERATION: INDICATIONS AND TECHNIOUE.*

By John Osborn Polak, M. S., M. D., Brooklyn, N. Y.,

Obstetrician to the Methodist Episcopal Hoseital: Gynæcelogist the Williamsburgh, Jewish and Deaconess Hospitals.

Cæsarean operation, as now understood, may be either an abdominal or vaginal procedure. dications for the performance of the operation are divided into those which are absolute and those which are relative. The indication is absolute, when the child cannot be born through the natural passages, because of the presence of some pathological condition which admits of no other method of delivery, as in extreme degrees of pelvic contraction, or pelvic deformity, in which the conjugata vera is less than 6.75 cm., or 25% inches; also in high grades of kyphosis, osteomalacia, spondylolisthesis, and Nägele pelves, or where new growths occur in the pelvis, or at the pelvic brim, as osteomata, or where these growths become incarcerated in the bony pelvis, such as fibromata, dermoids, and ovarian cystomata, and obstruct the passage of the head through the birth canal. Cicatricial contraction of the vagina, as also cancer of the cervix and of the rectum, may occasionally result in the formation of such dense and rigid tissues as to make delivery impossible by other than the abdominal route.

The indication for delivery by abdominal section is relative when the operation is put in contrast with some of the intrapelvic methods of delivery, and elected because of its advantages to the mother and the child. The spontaneous birth of an ordinary full term child is impossible when the conjugata vera is less than 7.5 cm., and in view of the excellent results from the modern Cæsarean section done as an elective procedure, before labor or during labor, before the woman is exhausted or infected, I am fully in accord with Williams when he suggests that the upper limit for the relative indication be placed at 8.5 cm. in flat pelves and 9 cm. in the generally contracted pelvis. This places the operation in competition with symphysiotomy or pubiotomy, induction of premature labor, and high forceps, in that class of cases referred to by Milne Murray, where the head does not tend to engage in the brim. Williams lets his patient have the test of labor, particularly if she is a primipara, allowing her a full hour in the second stage; if then there is no engagement and the head cannot be made to enter the brim by

'Read as part of a "Symposium" before Queens Nassau Medica Society, May 23, 1908.

pressure, or tentative traction with the forceps, he elects between the Cæsarean operation and pubiotomy. Such procrastination is, I believe, detrimental to the interests of the mother, as it submits her to a labor in which the bony or other mechanical obstacles are too great to be overcome by the normal expulsive powers, and then requires her to undergo a section when she is already tired out.

Reynolds has shown in his analysis of 289 cases of Cæsarean section by twenty different operators that when the section is performed for purely mechanical indication, its morbidity and mortality are proportionate to the amount of labor which has been endured before the operation. The truth of this observation has been borne home to me many times in my own experience; my patients have convalesced as after a normal labor when the section has been primary and elective, while those patients who have had the test of labor, particularly those who have entered the second stage before the operation was performed, have had a distinct morbidity and much postoperative discomfort.

Certain obstetrical emergencies have been included among the relative indications for abdominal delivery-i. e., eclampsia and placenta prævia centralis. In eclampsia the mass of authority is against the operation, except in the presence of some positive indication, such as contraction of the birth canal. These patients are not good operative risks, standing shock and sepsis badly, and the fœtus is often toxic. The late Lawson Tait and Palmer Dudley performed successful Cæsarean operations for central implantation of the placenta, and became strong advocates of this method of delivery, but when we consider how few viable children are met with in this type of placental displacement, as well as the great improvement made in the manner of controlling hæmorrhage, and of accomplishing the dilation of the cervix, since the introduction of the Pomeroy bag, my inclination would be to adopt intrapelvic methods of delivery rather than to resort to one that is yet comparatively untried.

In an exhaustive paper on primary section in the obstetrically unfit, Reynolds has shown that there is a class of women who are physically unfit to undergo the trial and traumatism of labor by the natural passages, because the expulsive powers are too weak to overcome the normal degree of resistance. This, I think, should include women suffering from endocardial lesions in whom there have been signs

of broken compensation prior to pregnancy.

A further indication of the relative type is when the pelvic outlet is so contracted as to make a forceps delivery impossible, though here the operation comes into competition with embryotomy, also in certain cases already referred to, of an obstructing tumor which becomes incarcerated in the pelvis, as well as in marked displacement of the cervix due to a previous ventrofixation of the uterus. This latter condition has necessitated the operation in forty-one recorded instances. One point needs emphasis, and that is, when section is necessary, it is desirable that it should be determined upon in advance, and be performed as a primary, not a secondary, operation. This necessitates frequent observation of our obstetrical patient during pregnancy, in order that we may estimate the relative size of the child to the pelvis, and the physical strength of the patient.

Vaginal Cæsarean operation has, in my opinion, but a limited indication, notwithstanding Dührssen's enthusiasm—i. e., in primiparous eclamptics, before viability, or before term, with long rigid cervices. In this class of cases vaginal incision will find its widest field, as it affords a prompt surgical means of emptying the uterus without unnecessary trauma.

Technique.—When the operation is determined upon, if elective and time permits, the patient should have the same preparation of her bowels and abdomen as is practised before any abdominal section. If it is an operation of emergency, she should have an enema, be catheterized, and have the skin of the abdomen prepared after she is in position and on the table ready for the operation. This may be done by thorough scrubbing of the abdominal wall, from the mons to the ensiform cartilage, with green soap and warm water, using large hand sponges of gauze as scrubs. The suds are removed with sterile water, and the skin surface is bathed with a I to I,000 bichloride solution in seventy per cent. alcohol. Just before the incision is made tincture of iodine is freely painted over the field of operation, which is protected by a sterile lap sheet placed over the patient. This cleansing of the abdomen is done while the anæsthetic is being given. My choice of anæsthetic is chloroform-oxygen, given with an open Esmarch mask, through which the tube from an oxygen tank is run. Since using this combination I have never noticed anæsthesia of the fœtus, so frequently met with when ether was used, and no efforts to resuscitate the baby have been necessary. A hypodermic of ergotole, 20 minims, is given just as the anæsthetic is begun, or if the uterine contractions have been so violent as to threaten uterine rupture, a sixth of a grain of morphine may be given hypodermically while the preparations for the anæsthesia and the operation are going on.

The instruments necessary for a Cæsarean operation are as follows: Two scalpels, one to incise the abdomen, the other to make the incision into the uterus. Four long hysterectomy forceps, to be used in case it is necessary to do a Cæsareohysterectomy. A pair of heavy, straight scissors, one dozen artery clamps, a needle holder, one dozen long, straight, sharp pointed, Keith needles, and one dozen sharp Hagedom needles. Sterile chromicized catgut No. 2, also one or two tubes of No. 2 plain sterile catgut, or medium braided silk, and sufficient strong silkworm gut to close the abdominal wound. It is well to have the long Keith needles threaded with No. 2 chromic gut, each suture being about twelve inches long, and arranged on a sterile towel before

the operation is begun; by this forethought much delay in suturing the uterus is avoided.

With the patient anæsthetized and on the table, the operator makes the abdominal incision, beginning three inches above and an inch to the right of the umbilicus, and extending it downward to about four inches above the pubes. When the peritonæum is opened, any existing anterior adhesions are freed and the uterus is lifted up by an assistant against the abdominal wound by pressure on the outside of the abdomen, but not eventrated through it, and held in this relation. The operator then takes another sterile knife, and makes a longitudinal incision in the upper anterior surface of the uterus; the wound should be at least five inches long to avoid tearing the myometrium. The uterine wound should be through the thickened upper segment of the organ; one hand is now introduced through the uterine incision, the membranes ruptured, or if there is an anterior implantation of the placenta, the placenta is pushed aside, and the child seized by the feet and withdrawn, while the assistant crowds the uterus well up into and eventrates it through the abdominal wound, as the baby is withdrawn, so as to prevent the escape of liquor amnii and blood into the peritoneal cavity. Soiling of the intestines is prevented by placing a moist sterile towel over the wound back of the uterus. The second hypodermic of ergotole is given at this time, while the placenta and its membranes are being removed manually. Hot sterile salt solution is poured into the uterine cavity, and the uterine suture begun by passing long straight needles armed with No. 2 chromic gut through both sides of the uterine muscle at once. Skipping the mucosa, these sutures are passed at one half inch intervals from below upward, their ends clamped and held by the assistant. The uterus immediately begins to contract as the muscle sutures are introduced; if these do not control the hæmorrhage, the assistant, whose hands are encircling the uterus, may make compression of the broad ligaments, and so arrest the bleeding. This, however, I have seldom found necessary. These sutures are now tied and the ends cut short and buried with a continuous peritoneal suture of fine catgut. organ is then gently massaged and wrapped in hot, moist sterile towels, the abdominal cavity wiped dry of any blood or liquor amnii which may have escaped into it, the omentum is brought down over the intestines, and behind the uterus, and the uterus is dropped back into the peritoneal cavity. The abdominal wound is now closed in layers, peritonæum to peritonæum, with catgut, fascia to fascia, and muscle to muscle, by figure of eight sutures of silkworm gut, thus closing the fat layer without leaving any more absorbable suture material within . the wound. The dressings are applied and held in place with two inch zinc oxide plaster, encircling the body, one of these plaster bands being placed so as to make pressure just above the fundus.

The points of technique which I specially wish to call attention to are: First, that two doses of ergotole are given, one when the anæsthetization is begun, the second as the suture of the uterus is begun. Second, that chloroform-oxygen is the ideal anæsthetic for the child as well as the mother, as it not only does not nareotize the child, but maternally

shortens the narcosis. Third, that control of the hæmorrhage is accomplished by the assistant, who keeps the uterus firmly against the abdominal incision until the child is extracted, and then pushes the uterus through the parietal wound and compresses the broad ligaments until the uterine sutures have sufficiently stimulated the uterus to contract on the uterine sinuses and so secure the hæmostasis. Fourth, that the uterine muscle is closed with chromic catgut instead of silk, and the sutures are introduced through both sides of the uterine incision at once. The observance of these points of detail materially increases the speed of the operation.

In a series of thirteen consecutive and successful Cæsarean operations which I recently reported, my longest time was thirty-five minutes, in a case in which I sterilized the patient by removing both tubes, while my shortest time was sixteen minutes for an ordinary hysterotomy, and the uterine and

abdominal suture.

In closing, let me say that the Cæsarean operation, properly chosen, gives the woman and child equal chances, and deserves a more extended use in the hands of the abdominal surgeon.

287 CLINTON AVENUE.

DIES CANICULARES.

"Dog Days": "The Physitians Vacation."

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A., Etc., Dublin, Ireland.

Who knoweth not, that when the Dogge-starre ariseth, the heate of the Sunne is fiery and burning? the effects of which starre are felt exceeding much vpon the earth. seas at his rising do rage and take on, the wines in sellars are troubled, pooles also and standing waters doe stirre and moue. A wilde beast there is in Ægypt, called *Orix*, which the Ægyptians say doth stand full against the Dogstarre when it riseth, looking wistly vpon it, and testifieth after a sort by sneezing, a kind of worship. As for dogs, no man doubteth verily, but all the time of the canicular daies they are most ready to run mad

Such was the belief, and the teaching, of the laborious and conscientious compiler of the first encyclopædia of science known to the literature of Western Europe: the Natural History of Caius Plinius Secundus (as Englished by that indefatigable "Translator General," Philemon Holland, "Doc-

tor of Physicke").

In the prehistoric centuries, when Chaldwan and Egyptian stargazers laid the foundations of astronomy upon the data of keen and continous observation, furnished through the medium of a cloudless atmosphere and transmitted through untold generations in the keeping of a skilled and privileged hereditary aristocracy, the richly (even riotously) productive imagination of those subtropical and oriental regions did not fail to contribute liberally to the decorative embroidery of the science. A certain proportion of this survived as the formative nucleus of the astrology of succeeding ages; and is distinctly traceable even in the scientific nomenclature of the twentieth century, as well as in the traditional allusions which are so often met with in its general literature. In those remote golden periods of human existence, when our planet formed the fixed centre of a freely mobile and never resting

universe, it was very natural, indeed, that its spherical surface should constitute something of a microcosmic reflection of the latter; as the minutest concentric sphere has-necessarily-at the extremity of its every radius a point which precisely corresponds to that in which the rectilinear continuation of the same intersects the circumference of the outer globe, however large. And as the greater may readily be fancied-especially in the vulgar mind-to influence in every way (as well as to include) the less, the genesis of the idea that all matters terrestrial were originally and ultimately regulated by stellar movements is not after all so very far to seek.

When the facts and opinions based on the sensory observations and associated intellectual reflexions of the homo sapiens of unrecorded antiquity had, to a certain superficial degree of penetration, satisfied his inquiring curiosity regarding the earthy and watery-the respectively solid and fluid-constituents of the surface strata of the world in which he had been permitted to exist, he raised his eyes more frequently to the overarching canopy which he could not (physically) reach, and the intervening and investing atmosphere whose phenomena he could not (mentally) comprehend. The more mysterious and the more remote, the more worthy of worship; and, accordingly, the earliest recorded traces of man's conception and adoration of the divine are distinctly traceable to the sources of light which providence had placed in the heavenly firmament. Abram, the divinely elected progenitor of the chosen priesthood of the human race, came from (arose from) "Ur (light, fire) of the Chaldees," and traveled westward in (and under) the auspicious guidance and protection of the Almighty Father of all, in obedience to the will of Jehovah as he guided him on his earthly pilgrimage. One of the most obvious facts which must have attracted the observation and speculative inquiry of our prehistoric ancestors is the dependence of life and growth on heat (light, fire) and moisture, and the respective central sources thereof; the sun in the heavens above, and the water on the earth beneath. Thus arose the conception of the four original and ultimate elements, earth, water, air, fire, in their naturally stratified arrangement of gravity and levity. And thus, too, was conceived the original idea of the primordial genesis of matters mundane which resulted from the conjunction of the male (superior) parent, cxlum, and the female (inferior) terra. The former overarched—and, as a mere matter of course, governed-the vast underlying and femininely productive field of mother Nature; and in course of time was (for the benefit of the uninitiated vulgar) made incarnate as Jupiter Diespiter. The Son (Sun) of this almighty creative father crossed the bosom of the latter day after day, in his passage from east to west, where he rested from his diurnal labors. His presence was absolutely necessary to life-to existence, reproduction, and growth. With his gradual meridional descent coincided the annual failure of light, heat, vegetative growth, and animal reproductive vigor. After a three days' sojourn in the abysmal darkness of the #000 of the brumal solstice, sol invictus arose again with life and healing on his wings. He was elevated on the ecliptic

cross at the vernal equinox at the sign of aries. "the crucified lamb." And so he was recognized as the friend and savior of not only the human race

but of all animal and vegetable life.

We have the very respectable authority of Lucian of Samosata for the fact that the earliest "dawn of astronomy" descended-with the mysterious Nile -from Ethiopia into Egypt. This latter country being essentially a product of the annual inundation of that unique stream, it is easy to fancy that its inhabitants, whose very existence depended on the regular repetition of that aqueous phenomenon, would watch with the most anxious care every feature of the physiognomy of Nature which might be suspected of exercising even the smallest influence thereon. And through the cloudless atmosphere of that remote territory, on a large portion of the surface of which a drop of rain is rarely, if ever, known to fall, there annually appeared at the exact approach of the summer solstice the longed for vision above the horizon of the most brilliant of all the fixed stars. With a regularity which hardly ever deviated from mathematical precision, the annual swell of the bosom of the Nile proceeded to develop directly after the manifestation of the presence of its celestial herald—the harbinger of life and plenty to the inhabitants of the surrounding country. It is, accordingly, easy to comprehend how the native Egyptians, who appreciated, almost to adoration, the devotion and vigilance of their canine contemporaries, came to associate the idea of the annual appearance of the star in question with the comparably reliable and welcome manifestation of the "watch dog's honest bark."

Those who have had some experience in tracing individual items of the history of etymological research will, however, be prepared to learn without surprise that this origin, and original application, of the epithet of dog star has not been unanimously agreed to. We ascertain from the wealthy lore and stately diction of Sherburne that, according to Arte-

midorus ·

Why it is all'il the Dog Star. The Star Syrius (saies he) is the Cause of Feavers, and therefore by some call'd the Dog, which is a Creature Fierce, and yet fawning, and for that reason πυρέτω ομοίον, resembled to a Feaver.

This derivation is, very evidently, an attempt to bring into evidence the coincident-while contradictory-powers of light and fire, life and death. By corresponding psychological gymnastics, Apollo, as sun god, caused the genesis and diffusion of plagues; and, as medicine god, healed their victims. ready noted, matter was made to consist, in a general way, of four elements: Water (beneath the earth: it was always found there when digged for to a sufficient depth, while its fluidity always enabled it to display its tendency to the lowest attainable level), earth, air, and fire. Accordingly, in the palmy days of the prosperity of the Pythagorean philosophy, the zingues was essentially formed of those constituents arranged in concentric shells in the order so indicated—the rotundity of our planet being recognized. But there was a something else necessary; and the existence of this fifth quiddity, more inexpressibly subtle by far than any of the four element of the group pestulated as a miner, wager The gunder of a community of an improvent;

it played a necessary rôle in the genesis and progress of every physical and vital incident and phenomenon. It penetrated and permeated every interstice of every form af matter, while its presence and influence were essential to every phase of functional activity. It became philosophically familiar afterwards as the Greek $Al\theta\eta\rho$ (ether), and in time became incarnate for the Roman zulgus as one of the avatars of their own supreme Jupiter.

As vain man was placed by his earliest recorded philosophy at the centre of a universe of vastness unthinkable, and as earthly products were obviously influenced by the lights of the overhanging firmament, it is not difficult to conceive how he came to recognize the governing and mediating powers of the "heavenly host." And thus Plutarch, as interpreted to English readers by the illuminating genius of

Philemon Holland:

For the reasons, the blace and the influences of God, which are in Heaven and amongst the Stars, do there continue and remain; but those which be disseminated among the sensible and passible bodies, in the Earth and in the Sea, diffused into the plants and living Creatures, the same dying and being buried, do many times revive and rise again fresh by the means of generations. And hereupon the fable saith thus much more, that Typhon cohabiteth and lyeth with Nephthys, and that Osiris also by stealth and secretly, keepeth company with her: for the corruptive and destroying power, doth principally possesse the extream parts of that matter which they name Nephthys and death: and the generative and preserving vertue, conferreth into it little seed, and the same weak and feeble, as being marred and destroyed by Typhon: unlesse it be so much as Isis gathereth up and saveth, which she also nourisheth and maintaineth.

Such are, of course, the expressions of a profoundly observant and hieroglyphic philosophy, concentrating its parabolic powers on the interpretation of the periodic mysteries of Nature. The Chaldaan shepherd was filled with devotion to the "heavenly host" on whose annual revolutions the growth and increase of his flocks depended-as well as the herbage from which their nutriment was derived. And the Egyptian agriculturist was annually treated to still more cogent and convincing demonstrations of solar and stellar influence. The growth of his cattle and of his vegetables was fairly similar to what was observable in neighboring territories; but the very existence of the soil to which both herb and beast must ultimately look for necessary nutriment depended on the annual tidal rise of a certain stream —which stream was in its turn apparently under the presiding influence of a single fixed star, and that the brightest of all! Easy it is then to the discerning intellect to comprehend the fitness of the perennial inspiration which guided Egyptian wisdom in the production of its wondrous system of natural theology, of which a diluted form was afterwards transplanted into Greece, and graced as it grew with the exquisite symmetry of Hellenic art. Continuing the above quoted reflections, Plutarch proceeds:

But in one word, and to speak more generally, he is still better, as Plato and Aristotle are of opinion: for the natural puissance to engender and to preserve, moveth toward him as to a substance and being: whereas, that force of killing and destroying moveth behind, toward non subsistence; which is the reason, that they call the one lisis, that is to say, a motion animate and wise; as if the word were derived of Feodua, which signifiest to move by a certain science and reason, for a barbarous word it is not. But like as the generall name of all gods and god leases, levil, is derived of air trait fragrants, that is to say,

of visible, and από row θέσντος, that is to say, of running; even so, both we and also the Egyptians, have called the goddesse elois and Isis, of intelligence and motion together. Semblably Plato saith, that in old time, when they said Isia they meant Osia, that is to say, sacred; like as Noesis also & Phronesis, quasi νέφομα, that is to say the stirring & motion of the Understanding, being carried & going forward: & they imposed this word συνείναι, those who have found out and discovered Goodness and Vertue: who have found out and discovered Goodness and vertices but contrariwise, have by reproachful names noted such things as impeach hinder and stay the course of natural things, binding them so, as they can not go forward, to wit, $\kappa\alpha\kappa(i\alpha)$, Vice, $\alpha'\kappa\sigma\rho(i\alpha)$, Indigence, $\delta'\epsilon\iota\lambda(i\alpha)$, Cowardice, and $\delta'\kappa(i\alpha)$, Grief, as if they kept them from $\delta'\kappa(i\alpha)$, or $\delta'\kappa\sigma\rho(i\alpha)$, that it is they kept them from $\delta'\kappa(i\alpha)$, or $\delta'\kappa\sigma\rho(i\alpha)$. that is to say, free progresse and proceeding forward. As for Osiris, a word it is composed of notos and ispos, that is to say, holy and sacred; for he is the common reason or idea, of things above in Heaven, and beneath: of which, our ancients were wont to call the one sort, $i \in \rho \alpha'$; that is to say, sacred; and the other $\delta \delta i \alpha$, that is to say, holy. The reason also which sheweth celestial things, and such as move upward, is called *Anubis*, and otherwhiles *Her*manubis; as if the one were meet for those above, and the other for them beneath; whereupon they sacrificed unto the former a white Cock, & to the other a yellow or of saffron colour; for that they thought those things above, pure simple and shining; but those beneath, mixed of a medly colour.

Such thoughts and illustrations as these exhibit. as I conceive, striking and instructive examples of the inevitable entanglement of the spiritual and the material in this still mysterious universe which exists within and beneath, as well as above and around. that still perplexing entity, the human personality. And very similar ones, indeed, were developed by the Chaldwan star gazer on his alternately scorched. and drenched, and storm swept plain, as well as by the Persian magus on his inspiring mountain summit, to those which occurred to the ancient Egyptian seer as he nightly watched his cloudless horizon for the vision of the joy bearing dog star, which heralded the approach of the annual Nile tide on which depended the collective existence of his nation with the inhabitants thereof. Each saw the continuous struggle which pervaded the whole of the visible universe: above, between light and darkness, day and night, heat and cold; around, between good and evil, pleasure and pain, rest and agitation, health and sickness; and beneath, between gravity and levity, solid and fluid, perpetual water and occasional fire. The philosophic observer of stellar movement, as he sat on the bank of the Nile or of the Euphrates, looked upward with awestruck admiration to the heaven which he could not reach. He looked into the water at his feet and saw all its phenomena reproduced.

Then he turned to the minute sparkling dew drop, and he found there a spherical mirror which actually concentrated beneath its tiny surface a reliably representative, if immeasurably smaller, picture of all the same details. The powers above evidently paid conscious attention to that liquid droplet. Of course, they permeated and regulated his own system! He thus developed the idea of the human microcosm. And the various visible powers which resided in the firmament above received distinctive Thus Plutarch: appellations.

But in the Books of Hermes or Mercury, so called, there is written by report, thus much concerning sacred names, namely, that the power ordained over the circular motion & revolution of the Sun, the Egyptians called Horus, & the Greeks Apollo: that web is over the wind, some name Osiris, others Sarapis, and some again in the Egyptian language Sothi, which signifieth as much as con-

ception or to be with Child: and thereupon it is, that ception or to be with Child: and thereupon it is, this by a little deflection of the name, in the Greek tongue that Canicular or Dog-star is called $K \nu \omega \nu$, which is thought appropriate unto Isis. Well I wot, that we are not to strive as touching names, yet would I rather give place unto the Egyptians about the name Sarapis than Osivis; for this is a most Greek word whereas the other is a strive of the stripe of for this is a meer Greek word, whereas the other is a stranger: but as well the one as the other signifieth the same power of Divinity. And hereto accordeth the Egyptian language; for many times they term Isis by the name of Minerva, which in their tongue signifieth as much, as I am come of myself. And Typhon, as we have already said, is named Seth, Babon, and Smy, which words betoken all, a violent stay and impeachment, a contrariety and a diversion or turning aside another way.

These were, of course, the supreme powers which necessarily received earliest special notice—as most powerfully influencing the life history of man. And the chain of ideas was forged out link by link down through untold centuries on the banks of the Nile, by the members of a royal and hereditary hierarchy. The conditions for the collection and concentration of philosophic wisdom were, perhaps, as nearly perfect as they have ever been in the chequered course of human progress. The unity of the entire cosmos was thoroughly elucidated, and the conception of its representative concentration in the human microcos-

mos was firmly inculcated.

Then, in immediately environing proximity to the person of homo sapiens, there was that mysterious 'element" which so completely evaded the powers of vision, and (in more restricted degrees) those of the various other senses. Its current must freely enter his nostrils in order that the most elementary functions of life may be preserved—the life giving "spirit" was surely in the air, but was the latter wholly of it? Was this agent of animation wholly and absolutely identical with the element whose hurried movements produced the prester and the typhoon? The final answer was slow to come.

There was placed in most remote order the "element" whose manifestations were those of light and Physically it formed the stars; theologically it represented the substance of souls. Thus again

The Priests of Egypt affirm, that the bodies not of these gods only, but also of all others, who have been ingendred, and are not incorruptible, remain among them where they were honored and reverenced; but their Souls became stars, and shine in heaven; and as for that of Isis, it is the same which the Greeks call Cyon, that is to say, the Dog-star, but the Egyptians Sothis: that of Orus is Orion, and that of Typhon, the Bear

There is little difficulty in conceiving how readily spiritual emanations were suggested to the Oriental imagination by observation of the rays of the sun and of the effects of the movements of the invisible The essential and insoluble unity of the universe effectively postulated a great first (originating and continuously governing) cause. And thus we find that in each of the old grandly mystical systems of the Hindus, of the Chaldwans, of the Egyptians, of Zoroaster, of Pythagoras, and of Plato, the anima mundi was an emanation of the ineffable and unknowable Supreme Power, and the anima microcosmi was an offshoot of the anima mundi. rays, genial or scorching, of the illuminating sun, of the moister moon, and of the unnumbered stellar items of the "heavenly host" were all the divine messengers (angels) which descended to earth, and to its theomorphic inhabitant, man.

We also find that humanity, then as now, displayed much gratitude to its deceased benefactors, even when negligent of its living ones:

Now Isis and Osyris for teaching the Egyptians agriculture were after their deaths by them Deified: Osyris adored in the Sunne and Isis in the Moone; because heat and moysture doe procure fertility. Isis is also taken for the land of Egypt, in that so extraordinarily fruitfull: and is said to mourn for the losse of Osyris; that is when the Sunne is in the winter Tropick, the Earth being then disrobed and barren.

Such is the view of Ovid's eminent interpreter, George Sandys, who calls attention to

"that ancient inscription on the Columne of Isis. I am Isis the Queen of Egypt, instructed by Mercury. The lawes which I have made let no man dissolve. I am the wife of Osyris, the Inventresse of Tillage, and mother to Orus. In Heaven I am the refulgent Dog-starre. The city Bubastis was built in my honour. Rejoyce, rejoyce, O Egypt, in that thou hast nourished me."

This learned interpreter of the *Metamorphoses* finds it, of course, necessary to notice, and account for, the association of Isis and the dog with a star of special brilliancy which also displayed unique influences:

Said to be the Dog-starre, in that the Egyptian Astronomers, having the benefit of a plaine countrey, and perpetuall serenity, from their high Pyvamides observed when that starre first appeared before the sun-rising, not eclipsed by his greater light, then being when twelve degrees distant from the Sunne in starres (as this is) of the first magnitude; from thence accounting, untill discovered as before the yeare following. And because the vines and fruits then ripen, the bountifull Nilus begins to flow, and contagious sicknesses to cease, (which in that season in other regions is most outragious) they attributed all these notable benefits to the influence of that starre; and therefore worshipped it under the name of Isis.

And as the priestly seers of the land of the Nile collected, century after century, the results of their continuous observations and reflections on the members —individual, collective, and grouped—of the lights of the nocturnal firmament, they arrived at many curious conclusions. Many were, perhaps, in the view of modern science, very absurd; some were fanciful and poetic; others were exceedingly subtle in their efforts to penetrate the investing cosmic darkness; others still would almost appear to have been inspired-many even profoundly prophetic. Their immeasurable and unbridgeable remoteness of distance; their ineffable loftiness of position; and their (presumably) everlasting and (apparently) spontaneous luminosity conspired to give the heavenly lights a peculiar and inspiring position in the field of human thought. The sun, as "lord of day" and "lord of hosts," and the moon, as "queen of heaven," occupied monarchic positions by day and night, respectively. The "heavenly host" over which they presided was arranged in groups of varied dignity and significance. A foremost degree of importance was attached to those stellar groups within whose limits the sun was always found to perform his yearly revolution. This stellar zone, the Zodiac, was divided into twelve segments; the resulting "constellations" corresponded respectively to the twelve parts into which the period of the sun's "annual" revolution was divided—the portions of time and of space being made to suit by artificial arrangement. The elemental composition of the inaccessible luminaries naturally exercised the speculative curiosity of the natural philosophers. The opinions of the most prominent of that class among the Greeks have been collected by Plutarch. They are as follows (Holland's version):

Thales affirmeth them to be terrestriall, and nathlesse fiery and ardent.

Empedocles holdeth them to be entlained by that tare, which the skie containing within it selfe, do violently send forth at the first excretion. Anaxagoras saith, that the skie which environeth is indeed of the own essence of a fiery nature; but by the vilent revolution of it selfe snatcheth up stones from the earth, and setting them on fire they become Stars.

Diogenes thinketh that Stars be of the substance of a pumish stone, as being the breathing holes of the world; and againe, the same Philosopher saith, that they be certaine blind-stones not apparent; howbeit, falling often to the earth, are there quenched, as it hapneth in a place called αίγος ποταιοί that is to say, Goats rivers, where there fell some time a stone-star in forme of fire.

Empedocles holdeth, that the fixed Stars which wander

Empedocles holdeth, that the fixed Stars which wander not, be fastned to the chrystall skie; but the planets are loose and at liberty.

loose and at liberty.

Plato giveth out that for the most part they be of fire, and yet neverthelesse they participate with other elements

in manner of glue or sodder.

Xenophanes is of opinion, that they consist of clouds inflamed, which notwithstanding are quenched every day, and afterwards againe be fired in the night in manner of coles: as for the rising and setting of Stars, they be nothing else but their catching fire and quenching.

of coies: as for the rising and setting of stratagency mothing else but their catching fire and quenching. Hiraclides and the Pythagoreans hold, that every Star is a world by it selfe, containing an earth, an aire, and a skie, in an infinite cedestiall nature; and these opinions go current in the verses of Orpheus, for they make of every Star a world. Epicurus reproueth none of all this, but holdeth still that old note of his: It may so be.

A somewhat motley array of opinions, the above series forms at first presentation to the critical eve: still, when closely scrutinized in the light of contemporary philosophy and science, the elements of probable or possible incompatibility become almost evanescent. We know from other sources that the sphere of aër reached out to the orbit of the moon, which thus constituted its constringing girdle. Thus came the special significance of the old epithet of sublunar; it applied to the earthly sphere and the contents thereof, and in the more "shady" or de-rogatory sense—as distinguished from celestial. The influence of the evil one and his host of fallen angels was conterminous therewith; in fact, certain heretical doctrinaires of the early centuries of the Christian era maintained the thesis that the rebellious angel of light, when expelled from the presence of the Almighty Father, was permitted to create a world of his own for the permanent future residence of himself and his host of fallen angels. Our planet was the product of that license; and the advocates of this version of terrestrial cosmogony confidently pointed to it as the only possible explanation of the events of daily life and experience in connection with matters moral, social, and political! But on the other side of the moon's surface celestial influences prevailed, and these became more and more divinely pure of essence as the distance from this our terra centralis progressively increased. stance of the heavenly luminaries-sun, moon, and stars-was necessarily the element which afforded light and heat, ignis, fire. Yet those luminous masses were but dense aggregations of the sparsely diffused particles which occupied the vast interstellar spaces. The "Son" [Sun] was "of the same sub-stance with the Father" (Diespater, Jupiter Diespiter), the personification of the utterly indescribable sky (heaven), which was composed of the quintessential Æther.

The inspired speculations of those fanciful and at least semipoetic philosophers of the grand old pagan schools placed "The forme and figure of Stars" in aspects almost as instructive as they did "the substance" of those "angels of the night." learn from the same Plutarch, in the same version,

The Stoicks say, that the Stars be sphearick or round like the world, the sun and moon. Cleanthes holdeth them to be pointed and pyramidall. Anaximenes saith, they stick fast in the chrystalline skie, like a number of nailes. Others imagine, that they be fiery plates, like unto flat

The rays of the sun were rendered distinctly visible when passing through the interstices of an intervening cloud; and the still more delicately subtle ones of the twinkling members of the nocturnal "host of heaven" came in time to be regarded as functional agents in the conveyance of the divine will to the surface of our planet. The stars became the "messengers"—angels—which conveyed to man the words of the remote invisible and ineffable Deity.

The order and arrangement of the celestial luminaries in the limitless regions of space formed a confusing puzzle in the domain of ancient cosmog-According to the system which proved most satisfactory, as well as geometrically neat, the cosmos essentially consisted of twelve concentric spheres, beyond the circumference of the outermost of which was located the immobile empyrean, the eternal abode of the ineffable deity. The central (terrestrial, sublunar) nucleus of this series, which was destined to be the abode of man, included four of those superimposed (concentric) strata: earth, water, air, and fire. Each of the seven planets was set in the wall of a crystalline sphere of immaculate translucency, by the diurnal revolution of which it was carried around its terrestrial centre. A single such crystalline shell was made to function as supporting frame to the whole heavenly host of fixed Manifold were, as might be expected, the heretical modifications of that neatly mathematical arrangement. Plutarch has marshaled a goodly series in illustration of this and other philosophic With regard to "the order and situation Placita. of stars," we ascertain that:

Xenocrates supposeth that the Stars move upon one and the same superficies: but other Stoicks affirme, that there be some afore others in height and depth.

Democritus rangeth the fixed Stars first;

Planets; and after them the Sun, the Moon, and the Day-

star Lucifer.

Plato, after the situation of the fixed Stars, setteth in the first place that which is called Phænon, to wit, the Star of Saturne; in the second, Phaeton, which is the Star of Jupiter; in the third, Pyroeis, that is to say, fiery or ardent, and it is that of Mars; in the fourth Phosphorus, and that is Venus; in the fifth Stilbon, which is Mercury; in the sixth, the Sun; and last, in the seventh, the Moon. Of the Mathematicians some accord with Plato, others place the

Sun in the midst of them all.

Anaximander, Metradorus the Chian, and Crates affirm, that the Sun is placed highest of all, next to him the Moon,

and under him the fixed Stars and the Planets.

By ingenious invention and superposition of cycles and epicycles, the Egyptian astronomy, as expound-'ed by its literally "royal" astronomer, Ptolemy, was made to adapt itself to, and account for, all (or nearly all) the more prominent stellar and meteorological phenomena known to the centuries of the Christian era which preceded the explosive Renaissance. The heavenly motor had by the latter date become quite too perplexingly entangled by its cyclic phenomena, and the engineering skill requisite for its management became progressively harder to attain. So reformation became inevitable: Hieronimo Fracastorio was born in the same year with Martin Luther, and the number of cosmic spheres with whose special localization and gyrational mechanism he was obliged to make himself acquainted, in the course of the acquisition of his unparalleled encyclopædic attainments, amounted to 74! So the machine was bound to fall to pieces-even by its own weight!

It is interesting to notice how the presidential guidance of the times and the seasons and the days and the years was in some instances recognized by the pagan philosophers of classic Greece in tone and language which display a close relationship of thought and diction to those of the Mosaic account. Let us again look upon the page of Plutarch, as viewed through the quaintly tinting prism of Phile-

mon Holland:

Of the signification of Stars, and how commeth Winter and Summer.

Plato saith, that the tokens and significations both of Winter and Summer, proceed from the rising and setting of Sun, Moon, and other Stars, as well fixed as wandring. Anaximenes saith, that none of all this is occasioned by the Moon, but by the Sun only. Eudoxus and Aratus affirm them to be in common, by means of all the Stars: and Aratus sheweth as much in these verses:

"These radiant stars and lights so evident As signs, God hath set in the firmament, Distinct, in great fore-sight, throughout the year, To shew how all the seasons ordered were

And here, in the midst of a critical and, perhaps over much self satisfied generation, I cannot refrain from a moment's contemplation of the unlimited expansion of the divinely revealed cosmogony which is reflected to us from the pages of the Hebrew lawgiver; and the almost similar grasp of universality and correlated unity displayed in the philosophy of Epicurus, as presented to us in the magnificent metres of the Roman Lucretius. The "inspiration" of the "divine" Newton in the domain of celestial mechanics may be said to have limited itself to the solar system; and when that famous scientist deviated through the turnstile of the gateway of chronology he executed a fiasco which has often since procured his followers a temporary detention in the (scientific) doubting castle of the grimly o'ermastering Giant Despair. The theory of Whitehurst confessedly confined itself to the solar system. Burnet, Whiston, Buffon, la Metherie, Baillie, and Kirwan delivered, each in his turn, a cosmogonic message of interpretation (and apology); but limited the same to our own planet and its investing atmosphere. In this special feature, the "father of modern philosophy" offers a very striking contrast to his scientific posterity, and an outline of distinctive resemblance to the poetically inspired philosopher, Lucretius, and the divinely inspired prophet, Moses. Both Epicurus and Descartes adopted the fundamental hypothesis that the initial power of motion was communicated to matter for the grand purpose of creation. Thus endowed, the chaotic mass was allowed, as well as obliged, to enter business on its own account. And so, after the experiences and the

exhibitions of countless ages, the occurrence of all possible-conceivable and inconceivable-junctions and disjunctions, unions and ruptures, decompositions and recombinations, marriages and divorces, we find ourselves in presence of a world so evolved —not yet perhaps to that form of finality calculated to afford supreme satisfaction (the realization of the summum bonum) to the majority of philosophic observers, whether Epicurean or Stoic, Academic or Peripatetic, or-etc. The primordial particles of Epicurus are not all of the same figure; are in no case infinitely divisible; their figures are unchanging and unchangeable; and so the variety of their outlines is the final cause of the variety of texture of the innumerable aspects and forms of compound matter. Then these primordial particles emerge into scientific light again in modern times as the elementary corpuscles of Sir Isaac Newton; and even the nineteenth century corpuscles of (discovered or invented by) Lesage will be found by the trained eye of the expert scientific historian to prevent distinctly recognizable features of their atavistic precession in the course of generative time. And the radiations of to-day are but physically executing the poetica: functions of the primordia minima of Lucretius.

But the elementary matter of Descartes presents the supreme peculiarity of being infinitely divisible. (This was also a distinctive feature of the solitary element 80wp, from which Thales prepared his edition of the zάσμος.) It is also adaptable to circumstance, as evidenced by the fact that its constituent particles, which were all angular at the time of their original endowment with perpetual motion, have, for the most part, at least, long since become perfectly globular by the abrasions produced by ever repeated concussion and friction. And the angular particles detached in those bumping collisions necessarily underwent in their turn a corresponding rounding and smoothing process; thus was produced a series of globular particles of dimensions immeasurably smaller than the original specimens. cordingly, in direct descent from the angular corpuscles of chaotic matter, we have derived three species of material "atoms," globular of a larger size. globular of smaller dimensions, and angular or jagged. The smaller of the spherical corpuscles are, in virtue of their very littleness, gifted with greater activity and passive mobility; and have, accordingly, been used in the formation of the sun and the fixed stars. The larger and, consequently, more quiescent spherules have been spread out to form the ethereal firmament (sky or heaven); while the sedimentary debris of angular or jagged particles were utilized in the creation of the earth, planets, comets, and other meteoric bodies of inferior order.

This primal conception of the creation from an elementary corpuscular chaos was further elaborated for general adaptation by postulating the genesis of sundry and manifold series of perpetual vortices, each in an immense and distinct mass of matter, which owed their origin to the primordial principle of motion with which each was originally endowed. This gyratory movement involved the whole of the mass in each individual case, and thus the origin of such whirl laid the foundation of a distinct and independent planetary system. Every such mass be-

ing composed, too, of the three varieties of corpuscles already enumerated, there resulted in each the formation of specimens of corresponding varieties of orbs; while the vast unemployed series of larger spherules penetrated and permeated each and all. In this fundamental particular, the corpuscular economy of Descartes formed almost an inverted image of that of Epicurus. Each constructed the planet on which he existed from an agglomeration of the jagged and angular, and consequently less mobile and volatile particles. But Epicurus employed his larger globules in the construction of sun, moon, and stars; while he scattered the smaller ones broadcast to make the ethereal atmosphere of interstellar space, and flow with unopposed current through the intercorpuscular interstices of all compound substances and bodies, inorganic and organic; mineral, vegetable, and animal. Each made earth a vortical centre; and the principal difference in the conceptions of the two great cosmogonists lies in the fact that Epicurus really recognized but a single all comprehending vortex, while Descartes had recourse to a process of decentralization (somewhat comparable to the "devolution" of Irish political platforms!) and planted out centres of local government in series of endless array. Such reflections sometimes lead the thinking reader of the twentieth century to wonder how many of the scientific experts of this generation ever remember that the all pervading ether whose presence guides and controls all their subtlest and most mysterious physical phenomena is the Zeus of the philosophic Greek, and the Jupiter of the poetic Roman, of the classic centuries; that they are, in fact, worshiping the same unknown deity—not, of course, "ignorantly," as in the days of Saul of Tarsus. Thus the divine Maro:

Tum pater omnipotens fœcundis imbribus Æther Conjugis in gremium lætæ descendit, who elsewhere sings:

A Jove principium, Musæ: Jovis omnia plena. while his subjacent spouse, and immortal sister, Juno, is the Air ("II pa = uer, by displacement of a single letter) of modern meteorology; facts which clearly account for the thunderings and lightnings of the former, and the frowns and tears and ever changing temper of the latter, divinity.

Let us now turn again to Plutarch to see—with the aid of the spectacles of Philemon Holland—our dog star in another aspect:

... Eupolis, the comicall Poet ... in his comedy named Colaces, that is to say, Flatterers or Parasites, thus saith:

"For why? This rule and precept streightly gave Protagoras. To drinke; that men might have Their lungs well wet and drencht with liquor cleare, Ere that in skie the Dog-star doth appeare."

The torrified atmosphere through which the dog star was wont to make its annual apparition in those southern regions inevitably led to its association with the seasonal development of maximum elevation of temperature. And at the other end of the meteorological pole was manifested its attraction for the life preserving moisture, the supply of which was then so necessary to the preservation of life, both animal and vegetable. We know that some cosmologists were much disposed to reduce the number of actual primordial elements below the four

usually recognized. When Greece had transplanted oriental wisdom into its own productive soil, and began to exhibit Magi of home manufacture, the first of these, Thales, maintained that the primordial form of matter was of one single and undivided element, water (moisture). It did not require excessive ingenuity of reasoning to convince a philosopher of the land of the Nile of the capital importance of this parental constituent of matter. And the characteristic meteorological phenomena of the thirsty season in which the dog star appeared above the horizon undoubtedly led to the growth of the associational idea of the physiological necessity or desirability of deep potations-aqueous, vinous, or mixed-at the approach of, and during, that trying period. The connection is, indeed, sufficient to account for the inspiration of the lines above quoted; and the prevalence of the opinion and the practice is amply testified by the references found in the pages of the classic writers, Roman as well as Greek, in both prose and poetry. But as human nature has, after all, remained radically the same down through all the ringing changes of philosophic theory and physical discovery, we cannot doubt, and surely need not wonder, that the importance of vinous, as well as aqueous, humidity had received ample recognition for untold centuries before the birth of the first of Greece's "wise men."

The importance of the presence of the aqueous element in the process of the decomposition of flesh was too obvious to escape the notice of those early observers, and Plutarch does not fail to preserve an account of a philosophic discussion of the same for the benefit of an inquiring posterity. In an inspiring record of one of the Symposiaques of the intellectual aristocracy of the wisest and most accomplished of existing communities, we learn that:

"I hope, the dog star Sirius, In fiery heat so furious With raies most ardent will them smite And numbers of them dry up quite."

This was fairly in accordance with the teaching of the first of Greece's wise men, who affirmed that all matter was fluid and variable, while the stars were "earthly, yet fiery"; there existed no vacuum anywhere in the cosmos; every specimen of body was divisible in infinitum; and, accordingly, there were no such things as "atoms." And "running to moisture," which was the essential modification of organic matter in the process of decomposition, was after all, but a return to the primordial element from which it had been originally produced, or formed, or created.

And in the same treasury of the philosophic ac-

quisitions of that most interesting age and country, we find, in connection with the discussion of this subject, an allusion which exposes a weak point in the armor of "the most poetical of philosophers," and relieves the modern reader for a passing moment from the depressing burden of the habitual consciousness of his own intellectual inferiority:

It hapned one day in summer time, that one of the company where I was at supper came out with this verse of Alcaus, which every man hath readily in his mouth, and pronounced it with a loud voice:

τεργε πλευμοια- οίνω, το νάρ άστρον περιτλάιετως, that is to say:

"Now drinke and wet thy lungs with winc. For why? the hot dog star doth shine."

No marvell (quoth Nicias) then (a Physician of the City of Nicopolis) if a Poet as Alcæus was were ignorant in that which Plato a great Philosopher knew not: and yet Alcæus in some sort may be borne out in saying so, and relieved in this wise: namely that the lungs being so neere as they are unto the stomack, enjoy the benefit of the liquid drinke, and therefore it was not improperly said, that they be wet and soaked therewith; but this famous Philosopher by expresse words hath left in writing, that our drinke directly passeth for the most part thorow the lungs.

It seems strange, if true, that the great founder of the Academy, who certainly had a fairly approximate (if not absolutely accurate) notion of the (general or "systemic") circulation of the blood, and of the phenomenon of universal attraction, should have actually retained and taught so crudely blundering a version of the very elementary physiological act of deglutition. But the present writer, for one, declines to admit the credibility of the testimony—as superficially interpreted. It is much more probable that the most poetic of philosophers allowed himself loosely to deviate into parabolic or metaphoric expression which might convey such meaning to the uninitiated critical, but was not allowed to deceive the privileged hearers and readers of his esoteric doctrines. The literature of every system of philosophy which has been profoundly and comprehensively elaborated will be found to contain many superficialities of expression and apparently contradictory statements which are read by the profane and the initiated with very wide difference of meaning.

The eternal restlessness of the atoms of ancient philosophy tended in the lapse of ages to their ultimate dissociation from the various corporate masses which they had originally been utilized to create. And thus there necessarily existed throughout all nature a tendency to the same uniform dead level of temperature, and the motion on which temperature depends. Few physicists of the school of Lord Kelvin appear to have dwelt on the fact that their great Caledonian master had been teaching the same lesson in the nineteenth century in different words, when speculating so acutely and profoundly-whether prophetically or unprophetically—on the gradual lowering of the sun's calorific supply, and the general tendency of universal matter to settle down to the quiet of an absolute zero temperature. And how few even of the leaders of the "higher criticism" appear to read, as they run, the fact that as combustion is essentially but a process of decomposition which more rapidly approaches the goal towards which all motion of matter tends, the "general conflagration" with which the Stoics of old wound up the business of their universe, and which reappeared in the Christian apocalypse, was simply another Helenic version of the same story. It was the final stage of the progressive resolution ("devolution") of complex compounds into simpler ones, of the latter into their constituent elements, and of the elements into the one undivided and invisible primordial principle of "ether"—the divine "spirit" which originally moved on the face of the waters.

On examining the cosmogony of P. Ovidius Naso we inevitably find the dog star placed in a position

of special prominence:

Sex ubi, quæ restant luces, Aprilis habebit, In medio cursu tempora veris erunt. Et frustra pecudem quæres Athamantidos Helles, Signaque dant imbres, exoriturque canis.

No contributor to the classical cyclopædic series of sacred lore in the palmiest days of pagan infallibility more fully recognized the dignity of position and cosmic influence of this star than did the apostle of the practice, in all its perfection, of the inspiration which radiated from the person of the ever youthful god of love. And both the poles of its diametrical effect were—as in the case of other celestial powers -fully recognized. The rays of the solar deity promoted growth and life and healing by the genial influence of their warmth; under other conditions they conveyed blight and plague in their intolerable ardor. And so of our dog star; it announced and promoted the inundation of the heavenly gift of the waters of the Nile; it sometimes also blighted the vine and the corn, the annual hope and staff of life of the struggling Italian peasant:

. . . si culmos Titan incalfacit udos Tunc locus est iræ Diva timenda tuæ.

sang the author of the *De Arte Amandi;* and the same ever present consciousness of the irresistible influence of the heavenly bodies upon vegetable growth is to be found reflected in the pages of all classic writers who have referred to the subject. Let us again turn to those of the elder Pliny, who is, as usual, more full in matters of detail than other authorities of pagan antiquity:

The summer Sunstead falleth out alwaies [in Italy] to he just upon the 24 day of Iune, at what time as the Sunne is entred eight degrees within Cancer, as hath bin said before. This is that great point & Tropick of the world: now is the heaven in most force, and the Sun at the highest of his power and vertue. . among those stars that est of his power and vertice.

Trule this season from the Sunstead beforesaid, vnto the setting or occultation of the Harp-star; Casar saith that six daies before the Calends of Iuly; to wit, the 26 of Iune, Orion riseth to the inhabitants of Italy; howsoeuer the star called Orions girdle, appeareth not to the Assyrians before the fourth day of Iuly, vpon which day in Egypt the star Procyon, i. the fore-runner of the Dog-star Syrius, sheweth in the morning, and commeth in very hot and fierie: and sixteen daies before the Calends of August, to wit, the seuenteenth of Iuly, the foresaid star Procyon riseth to them in Assyria. The morrow after, which is the 18 day. them in Assyria. The infortow arter, which is the so all Writers in manner doe agree vpon the rising of that significant and notorious signe, which commonly we call the Dog-star; to wit, when the Sun is entred the first degree of Leo, which falleth out to be the 23 day after the Summer Sun-stead. And in truth both sea and land do find and feele the arrival or comming of this star, yea, and many a wild beast besides, according as we have shewed already in place conuenient. Neither is this starre lesse worshipped and adored than those renowned Planets which carrie the names of gods and goddesses, and haue Divine honours done vnto them. He it is that inflameth and setteth the Sunne on fire: to him is imputed the greatest cause of that extreame hot weather during the canicular daies. . . . This halfe quarter or six weeks space, is that which determineth of vines and vintage, by the meanes of that star which wee called Canicula, the very ruler indeed ouer Vineyards, and whereupon dependent the good or bad season for all our grapes and wine the next yeare. From hence it is, and not otherwise, that the vines are said to be blasted, & the grapes burnt (as it were) to a coale. No haile stormes, no tempest of wind or raine is comparable hereunto, nor doth the like harme to corn and grapes: this causeth many a time scarcitie, and bringeth extream dearth and famine, which neither haile nor tempest doth. As for these tempests, they indomage haply and hurt some fields here and there; but the blast beforesaid plagueth whole countries, far and neare.

The grand old natural philosopher was, of course, thoroughly up to date in his intimacy with the propitatory observances which the very practical pagan theology of his time prescribed for the prevention of those dreaded visitations. Hence were developed the national celebrations of special festivities, and the careful repetition of necessary sacrifices and accompanying ceremonies. The cause of the husbandman's anxiety is fully recognizable:

For mine owne part, I would thinke verily, that the Summer Sunstead ordinarily upon the 25 of Iune is as dangerous; as also the rising of the great Dog-star which alwaies falleth out to be 23 daies after the said sunstead, if so be that the moon doe change in any of these two daies; for then commeth the harm by extremity of heat, which doth so bake and harden the yong kernels of the grapes and Oliues new knit, that they be tanned as it were into a tough callosity, that they can thriue and grow no more from that day forward.

Accordingly, we are prepared to find that a star possessed of so great influence over two of the most important national products received specially prominent recognition in even the liber primus of that divinum ac culestis rationis opus, the Astronomicon of Manilius:

Subsequitur rapido contenta canicula cursu, Quâ nullum terris violentius advenit astrum, Nec gravius cedit. Non horrens frigore surgit, Nec vacuum solis fulgentem deserit orbem. Sic in utrumque movet mundum, et contraria reddit. Hanc qui surgentem, primo cum redditur ortu, Montis ab excelso speculantur vertice Tauri. Eventus frugum verios, et tempora dicunt: Quaque valetudo veniat: concordia quanta. Bella facit pacemque refert, varieque revertens, Sic movet, ut vidit, mundum, vultuque gubernat. Magna fides hoc posse, color cursusque micantis In radios. Vix sole minor, nisi quod procul hærens Frigida cæruleo contorquet lumina vultu. Cætera vincuntur specie; nec clarius astrum Tingitur Oceano, cælumque revisit ab undis.

—thus Englished by Edward Sherburne, Esquire (MDCLXXV):

Next after whom with rapid Motion bent.
(No star than that 'gainst Earth more violent)
The fietee Dog runs; not one for Heat does rise,
Not one for Cold more grievous quits the Skies,
The World afflicting with a different Fate:
Nor ever fails upon the Sun to waite.
Who this from Tawrus Crown first rising see
Ghess thence of Fruits what the Event may be:
What Health, what Quiet may the Year befal:
Here War it makes, there Peace does reinstal:
And as it variously returns doth awe
Th' inferiour World; It's Aspect is their Law.
'Tis strongly credited this owns a Light
And runs a Course not than the Sun's less bright,
But that remov'd from Sight so great a Way
It seems to cast a dim and weaker Ray
All other Stars it foyls, none in the Main
Is drench'd, or brighter thence ascends again.

The interval of twenty-three days between solstice and rising of Sirius is increased to twenty-nine by Varro, and by Columella to thirty. And wider discrepancies are found in connection with the manifestations of the influence of this star; duplex series of which developed by reason of the dating of some from the cosmic ascent, and of others from the heliacal: while others ignored, or were ignorant of, the effect of the precession of the equinoxes.

As the experienced reader would anticipate, there were sundry versions of the terrestrial career of that particular member of the canine tribe whose celestial transmigration and metamorphosis resulted in the formation and location of the dog star. The following is the account given by George Sandys, whose reference to the Egyptian view has been already quoted:

This Icarius was a guest to Bacchus, who gave him a Borachio of wine, and bade him communicate it to others. Certaine shepheards, in his returne into Attica, drinking thereof immoderately, intoxicated fell on the Earth; and imagining that he had poysoned them, slew him with their staves. His dog Nerea by running before and howling, showed Erigone her father where he lay unburied: who after she had interred him, ascended the mountaine Hymettus and there hung her selfe. It is fained that Jupiter, at the intreaty of Bacchus, changed them both into Constellations: calling Erigone, Virgo; one of the six Northerne signes, who carries in her left hand an eare of corne, with a starre of the first magnitude; and her father Bootes; between whose legs shines the eminent Arcturus, which in revenge of his murder ariseth in tempests. But Icarius his dog, which died at the feet of his hanging

Mistris, was called Astricyon, by us the Dog-star: his malignancy as they faigne, proceeding from the former occasion; causing burning fevers, frenzies, and infections: whose reigne determines with the rising of Arcturus; the season then suffering an alteration.

Cicero (de Divinate) bears instructive and interesting testimony to the devoted attention displayed by the Ceans to the annual reappearance of the dog star, and their unlimited faith in its influence and the modes of the manifestation of the same:

Ceos accepimus ortum caniculæ diligenter quotannis servare, conjecturanque capere, ut scribit Pontielus Heraclides, salubrisne an pestilens annus futurus sit; nam si obscurior, quasi caliginosa, stella extiterit, pingue atque concretum esse Cœlum, ut ejus aspiratio gravis, ac pestilens futura sit; sin illustris et perlucida stella apparuit, significari Cœlum esse tenue purumque, et propterea salubre.

The celestial herald of the annual salvation of the land of Egypt became in time known to the Greeks of classical times as χυνός ἀστερισμός and as σείριος. To account for the origin of the latter cognomen, the scholiast of Apollonius cites the testimony of Timosthenes to the effect that it had been the name of the dog-when living here belowwhich had been translated to that position by a special exercise of divine power. We possess the statement of Plutarch to the effect that the ancient Egyptians believed that the constellation in which the star so brilliantly presides had formerly been the soul of Isis. But the divine stage of preexistence is limited by Diodorus Siculus to the single star, Sirius, which figures in ore canis. The testimony of the columnar inscription on the head has already been quoted from the version of Sandys.

The origin of the name acipus has, as might be anticipated, itself given a good deal of trouble to the

astronomical etymologist. It has been derived from σίρειν, to gape; from the fact that the torrid temperature which accompanies its annual preeminence has the effect of compelling dogs to assume that gesture of weariness. It has also been traced to an ancestral σειραίω. to make dry; because its appearance above the horizon was always associated with the parching and cracking of the muddy crust of the subjacent earth: agente terra per caniculam rimas (Virgil in Catalect). Yet again: from 5601 (= @stu)—from its association with torrid climatic phenomena. Still another origin: ἀστεροῦ, i. e., exinanio; quia sudere fluxo nos, exinaniat-according to the authority of the scholiast of Apollonius. Furthermore, from $\Sigma i \rho i s$, an epithet which the Ethiopians had conferred upon the Nile; "as if it were Sydus Niloticum, by reason of the great affinity between Nilus and that Star, for in the Dog days that River hath its greatest Inundation." In that colossal storehouse of learned lore, the Exercitationes Plinianæ of Salmasius, this erudite antagonist of the author of the Paradise Lost remarks that: Stellam porro, quæ in ore canis, Græci σείριων appelarunt a candore, et luciditate flammæ. He points out, too, that the learned grammarians-some of them even Greek-were mistaken in regarding the word as one of Egyptian origin. The name was really of Greek extraction, and he gives references —some of which are quoted below—to its employment by some of the purest Greek writers.

Salmasius embraces—and with apparent pleasure, as might be anticipated from the well known brotherly love of the giants of criticism-the opportunity afforded in this connection of pointing out the confusion of ideas which had developed in the mind of Scaliger anent the nomenclature of Sirius and Canicula: "Græcis σείριως stella in maxilla, vel ore canis. Hanc propriè caniculam appellari Latinis, totam autem μύρφωσως canem notat Scaliger, et fallitur. Nam caniculam etiam Latini vocarunt sidus ipsum, quod Græci κύνος ἄστρον appellant." And he quotes corroborative witnesses. Varro has: "Inde ad caniculæ signum dies viginti novem." And Festus: "Rutilæ canes, ut ait Atejus Capito, canario sacrificio immolantur pro frugibus deprecandæ sævitæ causa sideris caniculæ."

In the progress of his comment on this subject,

Salmasius goes on to observe:

"Græci quoque σείριου pro toto sidere plerunque usurpant. Stellam porro, quæ in ore canis, Græci σείριον appellarunt a candore, et luciditate flammæ,

"HEER deining!

Id est, acutissime splendet, et acutissimi est candoris. . . . Falluntur, qui vertunt, exsiccat, aut incendit. . . . Recte Hyginus: et Sirion appellasse propter flammæ candorem: quod ejusmodi sit, ut præter cæteras lucere videatur.

The word σείριον was used by Æschylus as an epithet of the sun, on account of the brilliancy of its radiations. And from Sophocles we have σειρίων κυνὸς δίκην; while Ibycus applied the epithet to every bright star; "omnia astra ipta vocabat ab eodem candore lucis.'

(To be continued.)

SYPHILIS EXTRAGENITALLY ACQUIRED IN EARLY CHILDHOOD.*

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There are no sadder cases in medicine than the innocently acquired chancre, which appears not infrequently in those who have lived the most exemplary of lives. This disease, frequently so loathesome, swoops down on those least suspecting, infection occurring through the most minute abrasion. This subject, although almost worn threadbare, because of the thousands of cases reported, nevertheless should always be borne in mind lest a mistake be made in the diagnosis. What could be worse than in childhood, even in infancy, to be afflicted with syphilis, due to an innocent infection from some accidental source. The various sources of infection are almost too numerous to mention. It has been the aim in this paper to cull out all but the most striking cases of infection, and those occurring, with but a few exceptions, under five years of age. Extragenital chancre is acquired either by direct contact with the secretion of a syphilitic lesion, with the blood, or with the saliva of a luetic patient, and also indirectly from contact with some object containing the same.

Sources of Infection.—The various sources of infection can be classified under several general headings: Parturition, circumcision, vaccination, breast feeding, hand feeding, fondling, household utensils, toilet articles, unsterilized surgical, dental, and electrical appliances, careless and unclean methods in caring for wounds and removal of foreign bodies, and miscellaneous sources.

Parturition.—Although but few cases have been reported of this origin, yet it can be easily seen that contact of the infant's head against mucous patches upon the mother's vulva may produce inoculation. Grünfeld and Weil have each reported a case of this character. In Grünfeld's record a three weeks' old infant was attacked with a chancre on the scalp, followed in six weeks by secondaries. In Weil's case an infant was attacked with a chancre upon the root of the nose, four weeks after its birth. The mother in each case had contracted syphilis late in pregnancy, and the vulva showed numerous mucous patches. In each case also the reporter considered the contact of the head of the infant against the vulva the source of the infection.

Circumcision.—Although circumcision syphilis can scarcely be classed under the title of extragenital, yet it may be mentioned as a prolific source of infection in certain communities. Epidemics have been reported by Segel, Ricord, von Pitha, Hutchinson, and others. Hutchinson describes an interesting series of circumcision chances. The rabbi, who operated on these cases, invariably placed the foreskin, which had been removed, in the same compartment of his operating case. The fresh gauze for the next infant was then placed in the same compartment where the previously removed foreskin had been. A syphilitic infant thus became, because

of the luetic secretions on the fresh gauze, the source of numerous inoculations.

Vaccination.-A great many writers have reported both single cases and epidemics supposedly of this origin. The details in a great many of these are either too indefinite or else insufficient in data to be absolutely sure that vaccination was really the cause. Cases have been reported by Whitehead, Bromière, Morax, Sebastian, and by numerous others. Taylor records a case of vaccinal syphilis, and his diagnosis was concurred in by several other authorities on the subject. Several individuals were successively vaccinated, the same scarifier being used on all without even being cleansed of secretion. The woman vaccinated just before the infant infected was proved to be syphilitic. A chancre appeared upon the right arm of this six months old infant just twenty days after the scarification. The secondaries appeared in six weeks. The largest vaccinal epidemic was known as that of Rivalta, and has been recorded in detail by Cerisse and also by Pacchiotti. This epidemic occurred in the little town of Rivalta, in Italy. An eleven months old boy, suffering from syphilis, was first vaccinated. the surgeon, Cagiola, not noting this condition. This syphilitic child was then used as the vaccinifer for the others. This one source of contagion caused eighty cases of syphilis, consisting of forty-six children, twenty-six mothers and nurses, five husbands, and three brothers and sisters of those infected.

Breast feeding.—The source of infection under this heading has been from large, and also from the most minute lesions of syphilitic origin, on or near the nipple of the nursing woman. Boeck reports two interesting cases in infants. In the first, a child of three months, acquired a chancre on the tongue, from a specific ulcer on the nipple of a wet nurse; in the second, an initial lesion developed on the right side of the frenum of the tongue of an infant boy, from a small luetic fissure on the mother's nipple. Arning has also recorded a case, in which the infant acquired a chancre on the left corner of the mouth from a sore upon the breast of the mother, this latter infant dying from the disease. Some few cases of supposed infection through breast milk have been reported, notably by Cerasi, and also Steinberger.

Hand feeding.—The greatest care should be exercised in the feeding of infants, seeing that all the food and utensils are scrupulously clean. Boeck, Sigmund, Gilbert, Plumbert, and others have recorded cases of infection from hand feeding. Boeck reported a case in which an infant was infected with a chancre of the mouth by a nurse who partially masticated its food for it. In Gilbert's paper a mother and her baby each acquired a chancre of the lip from using the same nursing bottle after a foundling. Sigmund, and also Plumbert, have reported infections from using sugar teats, previously sucked by luetic infants. The former records two infants, each infected with an initial lesion of the lip; in the latter's two cases, a mother was attacked with a chancre upon the right angle of the mouth, while her baby acquired one on the chin.

Fondling.—The fondling of children, chiefly by kissing, has given probably the greatest number of individual cases of extragenital chancre. The

source of infection may be divided into the kissing of parents, relatives, playmates, boarders, strangers, prostitutes, and nurses. Thomas, and also Sterling, have reported an inoculation from the kiss of a The former's case occurred upon the forehead of a two year old boy, while the latter's developed on the lower lip of a boy of six months. In the cases recorded by MacKay, Ryan, and McGuire the mother was the infective source. In the one case, the chancre developed on the right upper evelid in a boy of six years; in another, upon the forehead of a three year old girl; and in a third, on the tonsil of a boy of six years. Solomon and Ivanyi have each reported an example of infection, transmitted by the kiss of an aunt with mucous patches in her mouth. In one case an eight months old infant acquired an initial lesion upon the lower eyelid; in the other, a girl of three, contracted one upon Playmates by their intimate relationship are the communicators of syphilis. A. H. Griffith and Bulkley have each reported a case of this origin. Griffith's patient was a boy of three years, who had been infected upon the upper lip. In Bulkley's case the lip was also the seat of the chancre, in a girl three and one half years old. Fox details an interesting family epidemic from the caress of a boarder. The youngest child, a boy of two years, was first infected with a chancre of the tonsil. He in turn communicated the disease to four other members of the family. Cases of inoculation from the kiss of strangers have been recorded by Despagnet, and by Eltzina. In the former's case, the initial lesion occurred upon the right lower eyelid, in a thirteen months old boy; while in the latter's, the chancre developed upon the last two phalanges of the little finger, of the left hand, in a girl of thirteen months. In Despagnet's case the infant died from the disease. Rollet has recorded the infection of an infant of fifteen months, with a chancre of the lip, a prostitute with mucous patches in her mouth being the inoculator. This infant gave the disease to two sisters, two brothers, and to her grandmother. Nurses by their constant contact with infants have been the source of syphilis. Tchistiakoff and Ivanyi have each detailed examples of this mode of infection. In the former's case, a boy of eight months was inoculated upon the forehead; while the latter recorded two infections, a chancre being acquired on the lip in each case, one patient being a boy of thirteen months, and the other eleven months of age.

Household utensils.—The use of glasses, knives, forks, spoons, etc., in common, has been the not in-frequent origin of lues. Wilson, Roussel, Knowczyuski, and Vidal have each reported either an individual case or an epidemic under this heading. Wilson described an epidemic of five cases in the same family. The baby first acquired an initial lesion of the mouth, from nursing at the breast of The infant also, because of insufficient breast milk, was fed with a spoon. The eldest daughter, eleven years of age, while feeding the haby, tested the heat of the spoon with her lips. She also fed two other children, a girl of seven and a boy of four years, with the same spoon. The three children were attacked with a chancre of the mouth. The mother acquired an initial lesion of the breast from her syphilitic infant. The father and two other

children, who did not use this spoon, remained free from the disease. Roussel has recorded a case, in which a child of seven years acquired a chancre of the right tonsil from using a spoon after her luetic mother. In Knowczyuski's case, a child acquired a chancre of the palate, from using a dessert spoon immediately after an individual with mucous patches in the mouth. Vidal recorded a small epidemic of extragenital chancre in a weaning house. Four children became infected upon the lip after drinking out of the same tin cup from which a syphilitic child had just drunk.

syphilitic child had just drunk. Toilet articles.—These articles of daily use have also added their toll to the long list of those accidentally inoculated. Baxter has described an unusual case, in which a boy of three years contracted a chancre of the tongue from sucking his father's toothbrush. The father was suffering from a recent attack of syphilis and had moist papules upon the tongue. In the case detailed by Pellizari, the infant acquired an initial lesion on the scalp, the source of infection being a comb, which had just been used upon another child who had a pustular

syphilid of the scalp.

Unsterilized surgical, dental, and electrical appliances.-Instruments which have not been thoroughly cleaned have frequently been the cause of a specific infection. Numerous epidemics of vaccinal syphilis have been caused by soiled scarifiers, and might therefore be classed as instrumental. But as these cases have been discussed under vaccinal syphilis, they will not be detailed again under this heading. Secheyron has described an instructive case, in which a child of five years acquired a chancre by the catheterization of the nasal canal. Barclay gives the history of a young girl who had her lip abraded while having a tooth drawn by a dentist. A chancre developed on this site, apparently from infection by the dental instrument. Pellizari reported an unusual case, in which an electric brush was the inoculating medium. The child, who suffered from infantile paralysis, acquired an initial lesion on the leg.

Careless and unclean methods in caring for revounds and the removal of foreign bodies.—Although comparatively few cases have been reported under this heading, yet there are a sufficient number for care to be exercised. Robins has recorded a case, in which a syphilitic uncle was the source of infection by sucking an incised wound, supposedly to promote healing. The primary sclerosis develop-ing upon the dorsal surface of the hand, in a girl of seven years. Björken gives the history of an unusual source of inoculation. A little boy found a discarded mercurial plaster which he placed upon a wound on the back of his hand. A chancre developed on this site. His brother had previously worn the plaster upon a discharging luetic lesion. Kobner has given the details of a case, in which a child of two and one half years acquired an initial lesion between the toes, at the site of a severe intertrigo, infection occurring by using the same water, just bathed in by a syphilitic father, with discharging lesions. Bardinet has given the details of an epidemic from a most unusual procedure. A midwife, with mucous patches in her mouth, formed the habit of rubbing the umbilical cord of each infant she de-

livered with her fingers moistened with saliva; all the infants so treated acquiring initial lesions. As a result of this carelessness fifteen wives, nine husbands, and ten infants were infected. Three of those inoculated died from the disease. Crude methods in treating conjunctivitis and blepharitis have also been the avenue of syphilitic inoculation. Wecker and Baudry have recorded infections from this source. In the former's case, a girl of six years acquired a chancre on the conjunctiva of the right eye, from a mother who cleansed the eyelid with her spittle; of the two cases of the latter, the first was a girl of twenty-five months, who acquired an initial lesion of the eye, caused by the nurse's sister in law rubbing the eye with her finger moistened by saliva; in the second, a boy of four years acquired the lesion upon the lachrymal portion of the left upper eyelid from the mother moistening her finger or a cloth with saliva and then rubbing the child's eye. Two of these children had a conjunctivitis and the other a blepharitis. Szokalski has described a case of infection of a young boy by a syphilitic man, who attempted to remove a foreign body from the eye with his tongue. The boy's chancre originating on the tarsal conjunctiva of the lower eyelid.

Miscellaneous sources .- Six cases reported by Trousseau, Dowse, Taylor, Engelsted, Pontet, and Sigmund have been classed here. Trousseau has detailed the history of a boy, four months of age, who acquired a chancre on the buttock, from contact with mucous patches on the mother's vulva. The child was in the habit of going to sleep with its buttocks against the mother's abdomen. Dowse records the occurrence of an initial lesion of the forearm, at the site of a scratch, in a nine year old girl, from a syphilitic infant. The infant's anus, while being carried, rested on the scratch on the girl's forearm. The infant had numerous condylomata around the anus. The girl was attacked with a malignant ulcerative syphilis, which ended fatally. Taylor has described the history of a girl of ten years, who acquired a chancre of the upper lip from placing the whistle of a conductor between her lips. The conductor boarded in the same house and had mucous patches on the lips and in the mouth. In the case detailed by Engelsted a boy acquired a chancre of the lip from smoking his uncle's discarded cigar stump. The uncle was syphilitic with fissures and moist papules of the mouth. Pontet has recorded an infection of syphilis in an infant of eighteen months, caused by the habit of poking its finger into other people's mouths and then into its own. The source of contagion was a luetic nurse. In Sigmund's case the inoculating agent was the mother's finger, used to cleanse the lips and mouth of her infant. The mother was a midwife with an initial lesion of the finger. baby acquired a chancre on the angle of the lips. It should be stated that in the cases mentioned in this paper, in which infants acquired syphilis from the mother, the mother in each case was attacked with lues either late in pregnancy or after the birth of the child. Therefore no exception to Profeta's law is recorded.

The following case was seen in the skin dispensary of the Children's Hospital:

in two sear of age came to the km dis-

pensary of the Children's Hospital on September 30, 1907. She was plump, bright, and very well formed for her age. The child had had the usual diseases of early life, but with the exception of these had been uninterruptedly healthy. On the first visit, as soon as the child walked in, a raised lesion was noted upon the cheek. The mother stated that the lesion had started on the cheek as a small red sore, on September 3, just four weeks previous to her first visit to the dispensary. The lesion was situated on the left cheek, one half inch to the left of the ala nasi, and just above the left angle of the mouth. It was a dime in size, sharply marginate, raised, densely indurated, inflammatory, and the surface was covered with a yenowish brown sublingual and the submaxillary glands were slightly ensuring of syphilis were present. The surface was covered with a yellowish brown crust. larged, but no other signs of syphilis were present. The patient was carefully examined again on October 4th, patient was carefully examined again on October 4th, the glandular enlargement was noted to be more marked, the anterior and posterior cervical glands could also be palpated, and a faint mottling could be detected on the trunk. On the 9th a faint, brownish, macular eruption could be seen on the trunk, with large pin head sized account of the production of the posterior systems of the predictions. vesicopustular lesions on the posterior surface of the neck A pharyngitis was also present, and the child was pale and peevish. On the 14th mucous patches were noted on the vulva and around the anus; split pea sized, and smaller, flat papules were seen on the neck, inner side of the thighs, and on the lower back. The child had become very anæmic, fretful, and weak. The mother stated that the sleep was disturbed, and the child complained of pains in the body. The specific treatment was not started until dis-tinct secondaries had appeared. To determine the source of infection a careful examination was made of the mother. The mother was found to have a fading macular eruption upon the trunk; mucous patches were also found in the upon the trunk; mucous patches were also round in the mouth. The eruption first developed upon the mother in the early part of July. The source of the child's chancre was thus easily explained. The father's entire cutaneous surface was examined, and also the mouth, but no trace of syphilis could be found. The mother evidently contracted the disease from some outside, unknown, possibly innocent,

In the early part of this paper the transmission of syphilis by means of breast milk and by vaccination has been touched upon. Practically all modern writers agree that uncontaminated breast milk is not an inoculator of lues. The secretions from an insignificant fissure upon the nipple, which might be overlooked, may mix with the breast milk, and thus give rise to the initial lesion. Lee has written an interesting paper which seems to prove conclusively that breast milk is not the communicator of syphilis. In his case a married woman took a strange infant to nurse, giving it one breast and her own child the other. A chancre developed on the breast given to the foundling, but although her own infant continued to nurse at the other breast for six weeks after she developed a syphilitic eruption, it escaped infection. It should be stated that apparently vaccine serum has not been the source of the so called epidemics of vaccinal syphilis. They have apparently been due to uncleansed scarifiers or to the accidental admixture of the blood with the vaccine serum of the infected individual, this mixture of syphilitic blood and vaccine serum then being used for vaccination in the arm to arm method. Foster has written extensively on this subject. In conclusion, the frequency of extragenital chancre in childhood might be mentioned. Fournier, Tarnovsky, Gay, and the Kalinkinsky and Alexandrovsky Infirmaries, have reported seventeen cases of extragenital chancre in children under two and one half years of age, out of 807, or not quite two per cent. Fournier, out of forty-five cases with extragenital lesions, found four, or somewhat less than nine per cent., in children. Kapusun states that in Russia twentythree per cent, of infantile syphilis, from one to ten years of age, is acquired extragenitally. Syphilis extragenitally acquired in early childhood is an uncommon condition, notwithstanding the numerous cases cited in this paper. During the last decade but few cases have been reported under five years

I wish to express my thanks to Dr. Arthur Van Harlingen for the privilege of recording this case, and wish to state that many of these references have been obtained from Bulkley's excellent monograph,

Syphilis Insontium.

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332 SOUTH SEVENTEENTH STREET.

THE MODERN ADMINISTRATION OF GENERAL ANÆSTHESIA IN MOUTH, NOSE, AND PHARYNX SURGERY.

With Special Reference to Pharyngeal Tubage and Laryngeal Intubation.

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The satisfactory administration of a general anæsthetic in operations within or about the mouth, nose, or pharynx has been a problem with which, until quite recently, both operator and anæsthetist have struggled with but little hope of a successful The subject is of such practical importance, and the difficulties have been so felicitously overcome that the writer has been induced to emphasize the salient points of the question by this paper, basing his remarks exclusively upon his practical experiences during the past few years, mainly at the German Hospital, New York. He is especially led to do this as the main progress along these lines does not seem to be generally known, for even the most recent textbooks on anæsthesia, including the latest edition (1907) of Hewitt's classical and comprehensive work, refer only to the older methods.

In considering this question it must be borne in mind that the class of operations under discussion can be divided into two distinct subclasses, i. e., operations of short duration and usually of trifling significance, and operations which require a long anæsthesia and are generally extensive and of serious import. It is principally with the latter group that this paper will deal, as the former cases rarely cause either the operator or the anæsthetist much concern. In tonsil or adenoid operations, for instance, a few whiffs of nitrous oxide or ethyl chloride may be given, and the operative work can be performed before the patient recovers consciousness. I no longer use ethyl bromide for this type of cases, as safer and more agreeable anæsthetics are available. Generally an ether, chloroform, or anæsthol anæsthesia, administered until rather deep narcosis is obtained and then discontinued, answers the purpose admirably. The so called Aether Rausch or primary ether narcosis, as first suggested by Packard in 1877 and later advocated by Sudeck in 1901 is popular abroad for these cases. I have occasionally used the Juillard mask for bringing about this condition. As the patients in all these methods rapidly recover consciousness, the position best suited to the operation may be used, and one need not worry about the possible aspiration of blood as the laryngeal reflex is either never abolished or promptly returns after the anæsthesia is stopped.

In larger and more extensive operations the difficulties of the situation are numerous. Aspiration pneumonia has been the bête noir of the surgeon when working about the upper respiratory passages. To prevent the inspiration of blood and mucus is but one of the problems, however. The operator and anæsthetist are in constant conflict, the one ever interfering with the other's work. This, of course, renders a perfect operative technique, an aseptic field, and a quiet uniform, and safe anæsthesia impossible. Various manœuvres were made use of to attempt to overcome these obstacles. Tracheotomy was formerly advocated and the tampon cannula of Trendelenburg, Hahn, or Gerster used. It is now generally conceded that a preliminary opening of the trachea, with its attendant dangers, is an entirely unjustifiable complication except in major operations upon the larvnx itself.

The use of morphine prior to the administration of a light anæsthesia as advocated first by Thiersch for operations about the mouth is of unquestionable service. The patient can be kept in an analgesic condition, suffers little pain, and can frequently assist the operator by phonating, swallowing, expectorating, etc., if necessary. Yet the routine use of morphine is not without disadvantages, aside from the possibility of it being given to patients with an idiosyncrasy toward the drug. Morphine confuses the clear picture of the anæsthesia, particularly so far as the pupillary reflexes are concerned, and I am convinced that many times the respiratory difficulties, which one encounters, such as cyanosis. slow, shallow breathing, and occasional cessation of breathing, are directly traceable to the drug. Further, this interrupted anæsthesia, or as Mikulicz termed it Halbnarkose, with or without morphine, is incompatible with modern surgery. Not only is the essential quiet of the operation and the comfort and ease of the operator decidedly disturbed, but the asepsis is also grossly interfered with. It might also be emphasized that the shock of an extensive resection of a sarcomatous tonsil, for example, is unquestionably increased if the patient is half awake, feels pain, and is struggling during the greater part of the operation. Hæmorrhage is aggravated by the resistance of the semiconscious patient, and the possibility of "fright syncope" must also be considered. That the psychical factor is an important one and that fear can directly produce cardiac paralysis is quite certain, as the interesting cases of Kappeler and Sir Jame. Sumpson show

The use of the Junker apparatus or the more modern Braun and Gwathmey inhalers with oral cannula was a distinct advance, but none permits of a smooth anæsthesia, nor is the aspiration of blood, etc., prevented. The simple attachment of a catheter to these appliances and its passage into the pharynx, as Hewitt suggests, offers the same objections as do the Mason mouth gag or the Hewitt chloroform prop.

Rectal etherization, primarily proposed by Roux and Pirogoff as early as 1847 and revived by Mollière and Yversen in 1884, was shown by many observers, particularly Weir and Bull, to be dangerous and unjustified. The anæsthetic is not under control, and malæna, colitis, stupor with cyanosis. asphyxia, and death may follow its use. Of late this question of rectal anæsthesia, somewhat modified, has been again brought forward in this country by Cunningham and Lakey and Leggett. condensation of ether in the intestine is avoided by keeping it at a temperature of 37° C., and an outlet tube is used to withdraw the vapor if necessary While these modifications may render the method safer than it formerly was, it is still in too experimental a stage for routine practice, and after all it does not do away with the aspiration of blood and its evil consequences.

Various positions of the patient have been tried to obviate the difficulties attending the anæsthetizing and operating on these cases under discussion. The hanging head or Rose posture, the semirecumbent with the head extended, or Payr position, the sitting. Trendelenburg and Kocher, positions all have certain points in their favor, but none overcomes the main obstacles, and all more or less interfere with the operator and his work.

Intubation for anæsthesia scarcely need come into consideration for operations upon the mouth and nose. For pharynx cases it is an important adjuvant to our technical resources, and I shall consider the question more in detail later.

In 1903 Crile proposed a method of administering the anæsthetic in mouth operations which commends itself both for its simplicity and practicability. With some modification I have used this method most successfully in a considerable number of cases and find that it can be applied equally well to nasal and oral operations, except when the nasopharynx or oropharynx is involved. In fact the method was found so useful that its application was extended beyond the scope originally intended for it, and it was used in numerous other head and neck operations, such as mastoid, gôitre, gland, and brain cases, as it enabled one to conduct an anæsthesia often more smoothly than in the ordinary way, and at the same time kept the anæsthetist entirely away from the field of operation. Briefly the plan as originally suggested for mouth cases is a double tubage of the nares into the pharynx, and a packing of the oropharynx with gauze. In nose operations I pass the two tubes through the mouth and pack the oropharynx and nasopharynx. As the success of the method depends mainly upon carefully carried out technical details and the failures one meets with are usually due to lack of attention to these, I shall give an exact description of the plan Technique of Nasal Tubage of the Phorynx.

Fifteen minutes before beginning the anæsthesia the patient is given hypodermatically gr. ½ to gr. 1/6 morphine sulphate combined with gr. 1/200 to gr. 1/150 atrophine sulphate according to age and sex, and provided no idiosyncrasy exists. This combination usually insures a quiet anæsthesia, good respiration, a dry throat, and an avoidance of cardiac inhibition from the anæsthetic or from pharyngeal stimulation. The writer agrees with Schaefer that the preliminary administration of atropine is of decided advantage in every anæsthesia and should be adopted as a routine measure. The patient is then anæsthetized in the usual way with chloroform or a chloroform mixture on an open mask, in order to avoid coughing, salivation and the hypersecretion of mucus which might follow the primary use of ether. When a fairly deep anæsthesia is reached, a Dehnhardt mouth gag is inserted, and the nares and pharynx are cleansed and then swabbed with a four per cent, solution of cocaine in 1 to 5,000 adrenalin chloride. A deep anæsthesia is essential, as the pharyngeal reflex is one of the last to be abolished and the swabbing guarantees a completely anæsthetic state of the pharynx, thorough dryness and the greatest possible patency of the nares. My early failures were all due to carelessness in this matter or to too great haste in introducing the tubes. If the pharynx is not sufficiently anæsthetic the tubes will not be tolerated. They will induce gagging and holding of the breath with an establishment of an actual vicious circle, the cessation of breathing causing the patient to come out of the anæsthesia, and this increasing lightness of the narcosis being responsible for greater irritation on the part of the tubes. Further, secretion of mucus will be stimulated, the tubes will become plugged, the patient will become cyanotic, and the induction of anæsthesia becomes impossible. Should this error have been made it is useless, nay dangerous, to force the anæsthetic. All that can be done is to recognize the mistake, promptly withdraw the tube, induce a deeper anæsthesia with the Esmarch or Schimmelbusch mask, swab the pharynx and try again, although it must be noted that after one failure the irritability of the pharynx seems to be increased and the chances of success on the second attempt are by no means certain. The best way is to carry out the details properly from the beginning, and if this is done the tubes can be easily passed through the nose into the pharvnx and retained.

I have experimented with a number of kinds of tubes and find that a firm walled, soft rubber Nélaton catheter is the most satisfactory. Besides the lateral there should be an end opening, but the tube should have a conical tip, as this facilitates the introduction. Although these catheters can be purchased from the instrument makers one can easily make one by passing a red hot nail through the tip of an ordinary catheter. For adults, Nos. 25 to 27 French is a convenient size. The tube should be well oiled with petrolatum and cautiously passed, with lateral openings downward, horizontally backwards in the inferior meatus until it reaches the posterior pharyngeal wall. One must be careful not to lacerate the nasal or pharyngeal mucosa, as bleeding is undesirable, for the blood will occlude

the tubes and may be inspired. The tube is allowed to pass downwards until the tip is just above the level of the opening of the glottis. The finger is the safest means of determining the correctness of the position. I have made repeated cadaver measurements, including a number on sagittal sections of the head, and find the average distance from the anterior nares to the proper point on the posterior pharyngeal wall just above the glottis to be seventeen centimetres in adults.

After both tubes have been passed, the tongue is transfixed with a silk suture and drawn forwards. Then the posterior part of the mouth and the pharynx is tightly packed with gauze, forming an air chamber between the tubes and larynx. This tampon accomplishes the double purpose of forcing nasal respiration through the tubes, excluding oral breathing, permitting complete control of the anæsthesia, and preventing the aspiration of blood, mucus, and saliva. The two catheters are fixed in position by small plaster strips attached to the face, and if there is any leakage of air, the anterior nares can be further plugged with small cotton tampons. (See Fig. 1.)



Fig. 1.—Nasal tubage of the phatynx for mouth operations (Crife's method), showing the proper position of the tube and tampon.

The tubes are then connected by means of a glass, metal, or hard rubber Y piece tubing. Glass is preferable, permitting of better observation, and the leg should obviously be somewhat larger in diameter than the arms. A convenient length of stiff rubber tubing is attached to this and into the tube is inserted a perforated metal funnel with gauze or cloth cover and a ring for convenient holding. The cut shows the apparatus I have had constructed for this purpose. (See Fig. 2.) It can be easily sterilized. The funnel, as Pedersen correctly suggested, should be held below the level of the head to prevent the anæsthetic running into the larynx. Chloroform or anæsthol is generally used, as they produce the quietest anæsthesia, and with these anæsthetics the depth of the anæsthesia is more quickly regulated. Ether, however, can be used quite as well, especially after the anæsthesia is already induced and running smoothly. Should it be necessary to exclude air the perforations of the funnel can be closed with a plaster strip. Should oxygen be needed, as for instance if cyanosis develops due to the slightly impeded intake of air from the

presence of the tubes, it can be passed through one of the holes in the funnel. One should always remember to avoid ether when the Paquelin is used. I recall an occasion on which I was amæsthetizing a patient for a carcinoma of the tongue operation and not seeing the field of operation was administering ether while the operator amputated the tongue with the cautery. There was a slight leakage of ether vapor through the tampon and this ignited, though fortunately it was quickly extinguished before any damage was done, and the ether withdrawn and chloroform substituted.



F10. c- Apparatus for tubage of the pnarvnx for anæsthesia in mouth or nose operations

If the tubage has been successful, respiration is quiet, and the regular tubular breathing is heard. If the tampon leaks, a whistling is heard or a bubbling is noticed, which is readily controlled by tighter packing. It is manifestly essential that the air chamber between tubes and pharynx be kept closed.

It occasionally happens that one nostril does not admit a tube owing to a deflected sæptum or spur. One tube can then be used, and the other nostril can be plugged, though of course two tubes are preferable, as they permit a larger volume of air, and in case of one becoming accidentally plugged, the other functionates.

Technique of Oral Tubage of the Pharynx.

Though neither Crile nor McHenry, judging from their most recent publications on the subject



(1906), seem to have tried this scheme, it has proved so successful in my hands, in nasal operations, such as extensive plastics for instance, that I deem it

worth the dignity of a separate brief description. After the same preliminaries, except nasal cocainization, the gag is inserted and the tubes, unvaselined, are passed, lateral opening downwards, one on either side of the mouth, along the cheek to the proper point on the posterior pharyngeal wall, just above the glottis. Adhesive plaster is used to fasten them in this position. The tampon is then inserted first behind the soft palate into the nasopharynx, next into the oropharynx over the tubes, and finally between them in the oral cavity. This forces breathing through the tubes and prevents blood from running down from the posterior nares. The tube should be inserted about fourteen centimetres from the teeth. (See Fig. 3.)

the teeth. (See Fig. 3.)

The advantages of these tubage methods are manifold. A quiet. continuous anæsthesia is maintained, and the dosing of the anæsthetic can be accurately gauged. There is no coughing or vomiting to interfere with the operation, and the aspiration of blood, mucus, and saliva is out of the question. Hæmorrhage is readily controlled, the head can be held in the position most suitable for the operation, and the anæsthetist is entirely out of the way of the surgeon and does not interfere with his asepsis.

Another point that I wish to emphasize here is that the nasal tubage itself frequently corrects an imperfect anæsthesia, as it overcomes certain factors which tend to interfere with a quiet narcosis.

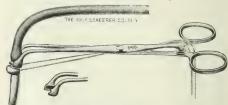


Fig. 4.—Forceps and cannula for intubation on thesia, showing detail of forceps jaw.

I refer especially to the falling back of the base of the tongue against the pharynx. The tube invariably abolishes this form of respiratory obstruction. Recognizing this fact I frequently pass one or two nasal tubes in an ordinary anæsthesia, if this difficulty is met with.

Before leaving this phase of the subject I wish to briefly record the following experience where the introduction of the tubes not only served as a means of administering the anæsthesia but actually prevented asphyxiation and diverted the necessity for a tracheotomy.

Patient, J. B., aged thirty-nine, suffered from a large sar coma of the tonsil which projected into the oropharynx. Anæsthesia was begun with chloroform on an Esmarch mask. When the patient began to relax, sudden deep cyanosis developed, the cause of which was soon found to be the tonsilar tumor, which, owing to the pharyngeal relaxation and enlargement of the growth from the venous engorgement, entirely closed up the oropharynx. Mouth gag and tongue traction being of no avail, the nasal tubes were rapidly introduced. They passed between the tumor and the posterior pharyngeal wall, and the result was an immediate relief of the respiratory obstruction. A long, deep inspiration, as after a tracheotomy, occurred, and then quiet, normal breathing. Color returned, and the operation was performed under tubal anæsthesia, which was continued with perfect smoothness.

Intubation of the Larynx for Anæsthesia.

Laryngeal intubation for the purposes of administering an anæsthetic was probably first suggested by Maydl in 1893, who conceived the idea of attaching a rubber tube to the O'Dwyer cannula, but who leaves us in the dark as to the technical details of introduction, etc. Eisenmenger in the same year used a Schroetter hard rubber laryngeal catheter for this purpose, and O'Dwyer in 1894 indicated that his artificial respiration cannula might be used for narcosis.

Three years later Doyen advocated the use of a special cannula with introducing forceps in nasobuccal operations and to inflate the lungs in opera-

tions upon the chest.

A year later Van Stockum constructed a complicated intubation apparatus for anæsthesia. It consisted of a tube to which was attached an inflatable rubber balloon as in the Trendelenburg tracheal cannula. A rubber tube was attached to the intubation tube, and a special forceps was used for introduction.

Since 1901 the main advocate of intubation anæsthesia has been Kuhn, who had constructed a very elaborate and expensive apparatus for this purpose. He and his pupils, Krug, Floren, and Dirk, have written a large number of papers on the subject, and they advocate the method for practically all operations upon the mouth, nose, and pharynx. Schlechtendahl, Lipburger, and Royce in 1902, and Herzog in 1904 have all favored intubation for general narcosis in mouth operations. They have all used very much the same methods. They intubate in the ordinary O'Dwyer method, and then attach a flexible tube to the intubation cannula.

Though I believe that nasal and oral tubage of the pharynx, as described, entirely do away with the necessity of intubation in ordinary mouth and nose operations, including those upon the palate, it is obvious that in pharyngeal operations, particularly in the removal of large tumors from the nasopharynx, a preliminary intubation for narcosis is the ideal

method.

As the instruments which have hitherto been suggested for this purpose have been either unsatisfactory or difficult to use, or else too elaborate and costly, I have devised a simple tube and forceps which I have tested experimentally upon the cadaver and which has worked most satisfactorily. (See Fig. 4.) It consists of a metal or hard rubber intubation tube constructed on the O'Dwyer principle, but shorter, without obturator, and with carefully rounded inferior extremity. The upper end has a special neck with double collar, the lower for the jaw of the introducing forceps and the upper for the firm, soft rubber tube connecting the intubation cannula with the anæsthesia funnel. The cannula is made in various sizes for different ages. A silk thread through the usual hole makes extraction easy should the rubber tube slip off.

The introducing forceps has the curve of the O'Dwyer introducer, as this is unquestionably the best curve for the purpose. The jaw is so built to firmly grip the lower collar on the neck of the in-

tubation tube.

The tube is introduced after anæsthesia has been induced in the usual way and gauze packing is

placed as needed to make the exclusion of the larynx from the operative field complete. Aspiration is absolutely prevented, and a quiet anæsthesia can be conducted, while the operator works in the pharynx uninterfered with by the anæsthetist. The tube is well borne, nothing more serious than an occasional hoarseness, lasting a day or two, need be feared.

Kuhn, who, as noted before, used his instrument in all mouth, nose, and pharynx cases, also recommends it to overcome laryngeal spasm, straining, and pressing during anæsthesia, particularly in abdominal cases. While I am of the opinion that these disagreeable symptoms can usually be corrected by other means, intubation can be thought of as a last

resort in extreme cases.

The instrument I have described might also be used for the positive pressure method in intrathoracic surgery, which it appears is destined to supplant the more cumbersome and less practical Sauerbruch cabinet. I think that attached to an apparatus such as Greene's it would answer the purpose admirably.

As an additional refinement to technique, a stomach tube might also be introduced. The pharynx could then be tightly packed with impunity, and, should the patient vomit, the stomach could easily empty itself without there being any interference

with the working of the apparatus.

In conclusion I would like to suggest that the present methods of artificial respiration would be greatly improved upon if, when necessary, the patient was rapidly intubated with an instrument like the one described and the rubber tube connected with an artificial respiration bellows, which should be in every operating room.

1356 Madison Avenue.

A CASE OF NEUROGLIOMA GANGLIOCELLULARE OF THE BRAIN: OPERATION: RECOVERY.

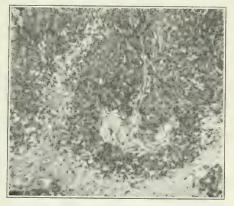
By T. M. T. McKennan, M. D., Pittsburgh, Pa., Neurologist, Allegheny General Hospital. AND F. R. PROESCHER, M. D.,

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The patient, a male, thirty-nine years of age, was a butcher by occupation. He had never had any serious illness during his life and had always been strong and

On December 4, 1906, he commenced to have daily head-aches and daily vomiting. Treatment by his physician failed to give any relief. I saw him with his physician, Dr. J. C. McElroy, on March 11, 1907, or about three months after the commencement of symptoms. His symptoms at that time were severe headache, projective vomiting, both paroxysmal and severe, and a marked degree of optic neuritis. There were no motor, special sense, or general sensory disturbances. There was no dizziness and no incoordination. There had been no fever. The intellectual state was clear. He could answer questions correctly. There was a peculiar emotional state. Every few minutes he would break out with uncontrollable laughter and this would only cease when the headaches became severe. The headache seemed to be intense. There was a peculiar glint or stare to the eyes. This, his wife said, was not normal to him, and it tended to make her somewhat afraid of him. I had him removed to the Allegheny General Hospital, where I observed him for a few days. I made up my mind that: 1, There was evidence of a brain tumor; and 2, that this was probably situated in the right frontal lobe

of the brain. My reasons for this opinion were that the pain was most intense on the right side of the forehead, and he localized this pain with his hand, and there was the positive evidence of the emotional condition and the negative evidence of lack of any symptoms pointing to an involvement of the motor area of the parietal, occipital, or temporal lobes, or the base of the brain. (Furthermore, I had in remembrance a case of brain tumor where the patient had localized the pain by his hand. He had mental involvement alone, and I found on post mortem examination a tumor of the frontal lobe just underneath the place where he had localized his pain.) I then determined to



Fic. 1 -Neuroglioma

have performed an exploratory operation over the frontal lobe with the centre of operation over the seat of pain. Dr. O. C. Gaub operated upon the patient on March 14, 1907. He made a large osteoplastic flap and opened the dura. There was no tumor visible, but by the sense of touch Dr. Gaub localized a tumor of the size of a large pecan nut and readily shelled it out. The whole area of brain exposed presented a peculiar yellowish appearance such as I had never seen before. The situation of the tumor was in the second frontal convolution about one and one half inches from the median line.

The patient showed marked shock after the operation, but soon rallied and made an uneventful recovery. He left the hospital in two weeks after the operation. For three months he was apprehensive about himself and had considerable dull headache. He then started to work and has been at work ever since. At this date, May II, 1908, he is well. After operation he did not again exhibit the emotional condition of uncontrollable laughter.

The tumor hardened in formalin, was 2.5 cm. long, 1.5 cm. broad, and 1.8 cm. deep, irregular in outline, grayish white in color, and covered with a very thin, transparent membrane (arachnoidal), thickened at some places. It was fairly hard to the knife in cutting, reminding one of brain tissue, and contained numerous punctate hæmorrhages. The tumor was composed of pale round oval cells, grayish at the borders and rich in protoplasm and with large nuclei, grouped in the form of irregular round or circular groups. Between them could be seen a coarsely fibred, elongated, partly hyaline, partly homogeneous, yellowish mass which was filled with small, round chromatinic cells, most of which contained no protoplasm. These and the mass of cells were highly vascular. Hæmorrhagie foci were also noticed.

The large cell groups, rich in protoplasm under a higher objective, were found in groups or lying thickly together or in isolated positions and were round or oval in shape. Atypical karyokinitic figures were frequent in these cells. The cells wherever they appeared thickly together were of various shapes on account of pressure. They were about the size of normal ganglion cells; a few were twice as large. Occasionally a short, small dendrite was found. Sometimes one of the cells seemed to have two nuclei.

and partly with fine chromatin bodies. The cells for the most part appeared closely together without there being an intracellular substance between them. At some places a homogeneous, pale yellow mass was seen which surrounded three or four cells. Many blood vessels were noticed whose walls were formed almost entirely of a thick layer of round cells, rich in chromatin, similar to glial cells. They were converted in some places to homogeneous mass without nuclei except in the outer layer of cells. We occasionally found between the cell masses more or less curved fibriallary masses; only a few of these fibrillæ seemed to have a membrane. In addition to these cells we found smaller ones of similar morphological characteristics lying closely together, or separated by either a finely fibrillary or homogeneous hyaline substance and interspersed with small cellular masses rich in chromatin.

spersed with small cellular masses rich in chromatin.

The cells did not stain equally, and they showed evidences of necrobiosis where they appeared far from a bloodvessel. The nuclei stained very faintly. The glial cells and fibres seemed predisposed to hyaline degeneration. An hemorrhagic focus contained numerous cells rich in pigment about the size of a large lymphocyte (meta-

morphosed hæmoglobin).

The small cells which were so chromatinic had a very small zone of protoplasm, and the chromatin of the nuclei was in the form of fine granular bodies. Most of the cellular masses rich in chromatin were found embedded in the above described fibrillary and partly also homogeneous cell masses, sometimes thickly, sometimes sparingly. These small cell masses often appeared in rows arranged like a rosary, and extended into the protoplasmic cell masses in this form. No connection between these cells and the fibrillary masses was found, and at some few places where the cells and fibres were not so abundant, swollen fibrillary prolongations were noticed.

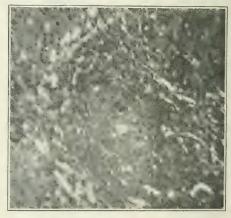


Fig. 2 - Neuroghoma

The microscopical examination therefore revealed a tumor chiefly of ganglion cells, which appeared as closely as the epithelial cells of a carcinoma and were without intercellular substance. Sometimes three or four appeared to be surrounded by a thin capsule similar to what we find with cartilage cells. True axis cylinder prolongations were only occasionally found. Between these ganglionic cells were found normal glia cells which were in places so thick that no glial fibres were found. In other places glial fibres were converted into a homogeneous hyaline mass.

Cellular elements—atypical glial cells—were also noticed They were smaller than the before mentioned ganglionic cells and had a small but distinctly demarcated protoplasmic wall. The nuclei contain small chromatic granules, as cylinder prolongations were absent. They were as thickly interspersed at some places as the ganglionic cells. At other places many glial fibres were found in between. This was not a surprising discovery, for developmentally glial as well as ganglionic cells are derived from the same mother cells. Ganglion cells and glial cells are similar

even in the fully developed nervous system (Kölliker). In such a tumor we can expect to find similar to what is found in the atypical neoplasms, intermediate stages between typical glia cells and ganglion cells.



Fig. 3.-Neuroglioma.

The cellular mass was very vascular. The walls of the bloodvessels were formed directly of neuroglia cells, the cells being arranged in circles. The nerve fibres were mostly nonmedullated, medullated being noticed in a very few places.

Can we regard this tumor as a true neoplasm or as a simple hypertrophy of the brain substance? We believed it to be a true neoplasm, the structure was so different from the brain mass itself. We see here a tumor formed almost entirely of ganglion cells, which were not given time to form cells with fully developed axis cylinders.

We know nothing of the nature of the neuroglioma ganglion cellulare, but it is probably due to misplaced ganglionic cells. Its incomplete development seems to indicate this, also its irregular construction, naked axis cylinders, and ganglion cells without prolongations and bloodvessels whose walls

are formed of glia cells.

Tumors of the central nervous system composed of newly formed ganglion cells and nerve fibres are very rare. In the older literature many tumors are described in which nerve fibres were supposed to be the chief portion. A critical review of these cases shows that only a small portion of the growths were truly composed of nerve elements. Most of them were fibromatous growths, and could only be considered as pseudoneuromata.

We can distinguish, according to location, central and peripheral neuromata. Tumors composed of nerve fibres are called myelinic and amyelinic neuromata, according as to whether they are medullated or nonmedullated. Virchow believed that myelinic neuroma are developed from unmedullated fibres, those which are formed of nerve fibres and ganglion cells are called ganglionic neuroma or neuroma gangliocellulare, or, briefly, neuroglioma.

Pseudoneuromata, which do not interest us here, arise from the endoneural or perineural connective tissue, and are found in the sympathetic as well as

in the spinal and cerebral nerve tracts, and also in the ganglia. It is questionable whether Ranke's neuroma (traumatic type of neuroma, amputation neuroma) can be considered to be a tumor of nerve fibres. In the first type the proportion of nerve substance has been overvalued, as it is very difficult to distinguish nonmedullated nerve fibres from connective tissue bundles. According to Thoma, traumatic neuromata result from a regeneration which extends beyond the physiological limits.

Many writers, therefore, deny that there can be a tumorous growth of nerve fibres. This is the case especially for neuroma of the central nervous system which are said to contain proliferative tumorlike collections of ganglion cells and whose existence is not universally recognized. We must remember that in the various kinds of tumors of the central nervous system (glioma, sarcoma) nerve fibres and ganglion cells are found which are probably remnants of the preexisting nerve tissue. Also developmental disorders of the central nervous system occur in which a transplantation of gray and white matter takes place, the result being an enlargement without us being exactly able to speak of a neoplasm. Not rarely a hyperplasia of normal brain substance occurs which may reach a large volume (corpus striatum). It would be wrong to class this as a neuroma.

On the other hand, we cannot exclude the possibility of transposed nerve tissue becoming the origin of a free neoplasm. We know that some, not all, congenital malformations become the starting points of autonomous cells which may reach an enormous size. The energy which normally is used in keeping the cells to the size necessary for function is freed, and this vegetative growth is the result.

We find in literature a few cases of true neuroma. Virchow and Wagner have described true ganglionic neuroma, originating in the ependyma of the ventricles of the brain, and which contained glia, nerve fibres, and ganglion cells. These were probably of congenital origin. Klebs observed two cases, in one of which the entire spinal cord was surrounded by a mucoid transparent mass which partly entered into the normal nerve substance and which contained many ganglion cells and nonmedulated nerve fibres. In the other there was found a rather sharply circumscribed round growth in the gray matter extending into the white, which also contained numerous ganglion cells and nerve fibres.

That the microscopical picture of a neuroma may be produced, artifically, through traumatism, has been discussed by Van Gieson and Lubarsch. Ziegler described the neuroglioma as a diffuse nodular intermescence of the central nervous system, of a white to gray color, and of slightly harder consistency than the normal nervous tissue, and due to a disturbance of embryonal growth. The glia fibres are mostly of a smooth, shiny appearance; the ganglion cells are of different forms and without dendrites. Neuroglioma have been described which were said to consist only of glia cells and nerve fibres. But the position we take to-day is that such tumors are without significance, as every nerve fibre arises from a ganglion cell, and an isolated neoplasm of nerve fibres is not possible.

BESSEMER BUILDING, SIXTH STREET AND DU-

QUESNE WAY.

A NEW CORSET FOR GASTROPTOSIS.

By Anthony Bassler, M. D., New York,

Visiting Physician to St. Mark's Hospital Clinic.

To relieve the subjective symptoms so that the woman who is suffering from gastroptosis, which, by the way, is not a disease, can digest her food with comfort and can thus take larger meals and become better nourished; to prevent the drag on the lesser omentum caused by the weight of food in a sagging stomach, the musculature of which I believe to be more or less atonic in every case; and to assist in the amelioration of the corporal debilitated neurasthenic picture complex found commonly in these patients, as a therapeutic measure, a support to the abdomen is indicated in all instances, together, of course, with such other important matters as proper dieting, rest, intragastric faradism, tonics and abdominal exercises.

To be helpful to a patient, such a support to the abdominal walls must raise the lower end of the stomach and maintain the organ in this higher level; likewise also the liver, kidney, colon, and small intestine, should they also be low. To do this are used the adhesive plaster bandages of Rose and Rosewater; various kinds of belts, too numerous to mention; and corsets. As each one of these measures presents some advantages over the others a moment might be spent in the consideration of them.

The adhesive plaster belt of Rose's, when properly adjusted, is a valuable appliance. It possesses the advantages of being quickly put on any patient without much preparation or measurement; of being a sort of physiological support; of remaining tight enough to be depended upon for about two weeks; and of being inexpensive. It possesses the disadvantages, however, when continually used, of becoming uncomfortable and irritating to many skins; of the curling over of the edges, so that the face of the plaster adheres to the underclothing; of soon becoming loose from the body, boardlike, and wrinkled, and therefore worthless as a support; and lastly, of the patient being deprived of bathing while the appliance is on. But when a quick relief from the symptoms is desired, for a short time or until a more comfortable support can be made up, it deserves our first consideration. Beyond this its employment is usually not satisfactory.

The objection to most belts that are used is that enough attention to the details of their construction and close fit is not observed. Like with a truss for a hernia, we must not leave these matters to the surgical appliance maker alone, unless he has been specially taught and can be depended upon. The straight transverse belt, however made, only compresses the abdomen. And thus it is that the viscera are pushed directly backward, and then, as the back of the abdominal cavity is resisting, continued pressure raises the viscera. But this is really a long way upward, and in many medium and all thin subjects the x ray examinations show it to be only a fair way at best. Now the object of a belt is not only to support the outside of the abdomen by its circular compression, but it must also serve in the raising of the viscera, that is, it must be a sort of artificial mesentery in ad-

This means the drawing together of the lower front of the abdomen with the waist line in the rear (prolapsed viscera upward as well as backward). Such a belt must be especially constructed with these objects in view (1) and have perineal straps on it to keep it from riding. I agree fully with Pfahler (2) that an x ray examination should be made both before and after the support to the abdomen is adjusted, so as to make sure that it is doing its intended work. It is a practical fact that, unless we are dealing with a patient who has a prominent abdomen sufficient in size so that there is enough bulk to it to give a good purchase to the front of a belt so that a firm draw can be made to raise the viscera, a belt is of little value. In the Landau cases of splanchnotopsia such abdomens are the rule and the belt serves well. But then there are the many other women of thin and medium build, pronounced cases of gastroptosia with subjective symptoms, in whom the best constructed belt is decidedly of less value as a support than the cheapest constructed straight front store corset would be. For the attendant to prescribe the wearing of a belt to such a woman simply induces the conscience of a physician into the belief that he is doing wisely without his taking into consideration the important fact that the belt is going on a flat abdomen which will slip around on the inside of it no matter how tight it may be, and thus it will do no good.

A close observation of this subject in these women has invariably proved that the corset offers the best solution of support, and it may be truthfully said that, while the habit of wearing the waist compressing corset is no doubt responsible for the production or aggravation of many of the cases of ptosis that we see, another corset, specially constructed for the purpose, and not any less fashionable than the first, can be made and comfortably worn to correct it.

Together with the essentials observed by Gallant (3) in the corset he has advanced, that is, "made to order, of fashionable design, gracefully curving in at the waist, and with ample room above the waist line," such a corset should make a deliberate effort to raise and hold up the organs within by a mechanical pressure upon the region of the abdomen bounded by the umbilicus, front points of the ilia, Poupart's ligament, and the pubes; and such a pressure cannot be depended upon as being sufficiently made in slim women by any form of corset that has a flat or convex shaping to the abdomen in this zone. My x ray examinations of the lower border of the stomach with such corsets on have proved this to be the fact beyond the less than half number of women who assert to derive benefit from it. Of course, it must be plainly evident that to any woman who has a large displaceable abdomen such a corset may be quite satisfactory, but it must also be remembered that even in these subjects the pulling up of the mass of soft flabby skin and subcutaneous adipose tissue of the abdomen does not always mean, even if the waist line is materially enlarged thereby, that the internal viscera have also been elevated and are being sustained.

The corset here advanced is particularly for the medium and slight woman, although it can just as well be used for the stout woman. I use it in all

cases of Glénard's disease. Its special feature is that it has a concave abdomen, concaved in its depth according to the extent of prolapse of the organ or organs within and the bulk of the abdomen, otherwise it is a well fitting, stylish, made to order corset, not any larger in the circumference at the waist line than the normal measurement would be, with a contraction transversely to shape it in at the waist, and a corresponding fullness in the costal region to allow for the sustained organs. The concavity is below the umbilicus and at the sides, between that and the anterior superior spines of the ilia down to Poupart's ligament. This feature is brought about by a series of corset steels, which have been bent, then



Author's corset on an extreme case of gastroptosis in a medium sized young woman in whom the corset raised the pyloric portion of her stomach eight cm. with almost immediate relief of the gastric distress after eating, complete relief of constipation, and marked subsequent benefit to her general health.

tempered, and placed in the corset as this illustration shows.

I desire to call particular attention to the fact that, unlike the Gallant corset, the one here described does not depend upon any extreme degree of snug fitting about the hips and lower abdomen to squeeze the underlying tissues and thus hold up the viscera. Even with the women standing the lower part of the corset does not have the extreme close fit as the previously mentioned garment with the women lying down. With my corset the entire hand can be readily slipped between it and the abdomen, and still the support factor is accomplished. Nor is it necessary to loosen the lower string of the corset to put it on, as is necessary in the other garment; the corset when once adjusted is taken off and put on without any widening change, and thus its degree of support is not changing day by day, as is the case when the

strings are constantly being adjusted. Also, in no instance did I find it necessary to pad the lower edge of the corset so as to relieve point pressure on the anterior superior spines of the ilia or elsewhere.

The corset is put on in the following manner, with the patient in the recumbent position: The garment, without loosening the lower strings, is wrapped around the body and the lowest eyelet is fastened in place. The woman now bends her knees, raises her hips from the bed as high as possible, maintains this position for a moment or two before beginning, and then fastens the remainder of the hooks until the corset is closed. This is best done under extreme exhalation. After this the woman is allowed to get up and continue her dressing. Under no conditions must the corset be put on while the patient is in other than the described position, because holding the abdomen up while she is upright with one or two hands is not sufficient to elevate the organs.

Up to the time of this writing twenty-one women have been fitted with this corset, which I may mention can be made by any good corsetière. In all of these has it not only been successful in the way of relieving the subjective symptoms due to the prolapse, but in every instance it has been all that could be asked for in actually and comfortably keeping elevated the lowered organs. And inasmuch as the slim women have always been the most difficult to assist in this way, and as my results have been so gratifying, I advance its use for more general adop-

tion in these cases.

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3. Gallant. New York Medical Journal, lxxxvi, No. 11 228 EAST NINETEENTH STREET.

A CASE OF DERMOID TUMOR OF THE CONJUNCTIVA.*

By Marcus J. Levitt, M. D., Brooklyn, N. Y.,

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Dermoid tumors of the conjunctiva are comparatively rare. They are always congenital, benign in nature, and are usually connected with some other malformation or deficient development of the eyelid or other part of the face, such as coloboma or harelip. The usual seat of the tumor is at the sclerocorneal junction, but it may occur at any other place of the conjunctiva. The size varies from that of a split pea to that of a cherry. Histologically, these tumors contain all the elements of skin and its appendages, such as hair follicles, sebaceous and sweat glands. In consistence, they are either hard or soft, according to the amount of fatty tissue they contain.

Dr. Ryba, in 1853, was the first to describe such tumors, calling them dermoids, which name they

*Presented before the Williamsburgh Medical Society N -ember in the 100%

have since retained. According to Van Douyse, dermoids are due to the remains of the amniotic adhesions. Remark describes them as due to the invagination of the ectoderm.

CASE.—S. G., baby, male, five weeks old, was referred to me by Dr. Gingold on June 20, 1907, for some growth of the eye. Mother's age, twenty-one years; father's, twenty-five. History negative. Labor was normal. On examination, the growth measured about 8 or 9 mm. in length, 6 to 7 mm. in width, and 2 to 3 mm. in thickness. It was located at the sclerocorneal junction, more overlapping the cornea. It was somewhat hard in consistence. There was no inflammation and the rest of the eyeball was clear. Four months later the growth was somewhat enlarged, and encroached more on the cornea. The baby was fat, well nourished, and presented no other abnormality. Immediate removal was advised, but the mother preferred to wait until the child grew a little older.

This case is particularly interesting, because the patient has no other abnormity, as is usually found with dermoids; also because it has been under observation almost from birth.

The following cases have been recorded in the

literature since 1865:

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615, 1888.

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RENAL PYURIA WITHOUT APPARENT LESION IN THE KIDNEY.*

By ISAAC LEVIN, M. D., New York.

The parenchyma of the kidneys consists of a conglomeration of a vast mass of urinary tubules and minute bloodvessels, very intimately interwoven. It is very easy for leucocytes to exude from the blood into the tubules and from these to be washed out by the urine. As with other abnormal constituent parts of the urine, leucocytes usually migrate when the epithelial cells of the tubules become diseased. But it is also a priori possible that leucocytes will exude through normal renal epithel

* production to the transfer of the North Andrew North A

ium, in conditions of hyperleucocytosis in the blood, as Talma (1) has recently shown in two cases of renal pyuria due to pyæmia. Consequently, renal pyuria occurs frequently in a great many pathological conditions of the kidney; and the quantity of pus in the urine does not indicate the severity or character of the lesion of the kidney.

We may meet practically normal clear urine in pyonephrosis, where the whole kidney is changed into a pus sac; on the other hand, a great deal of pus may be secreted by a kidney that shows very

little anatomical lesion, if any.

The two cases that I shall report here illustrate this latter condition.

Case I.—Mrs. H., aged forty-eight, came to me in March, 1907, complaining of attacks of pain in the right lumbar region, which had continued for the last six years. At first the attacks occurred once in three to four months; lately they came on every week. Three years ago a diagnosis of kidney stones was made in a Vienna clinic.

The patient was a very robust woman. The lungs and heart were normal. She gave no family history of tuberculosis. On palpation the region of the right kidney was sensitive, but the kidneys could not be felt on account of the great amount of subcutaneous fat. The urine was very turbid, had an acid reaction, contained a great deal of pus and a quantity of albumin corresponding with the amount of pus. Microscopically pus cells and cocci; no blood nor casts. Cystoscopic examination showed normal bladder, pus escaping from the right ureter. Urine drawn from the left ureter was normal.

I considered the case one of a right nephrolithiasis, and made a nephrotomy. At the operation the kidney appeared large and congested; the pelvis was perfectly normal; there was no stone either in the calices, pelvis, or ureter; no abscess anywhere. The kidney was closed with deep sutures. The patient made an uneventful recovery, and has had no attack of pain since the operation, the urine re-

maining free from pus.

The second case gave a different clinical picture.

CASE II.—Mrs. J., aged twenty-nine, suffered from pul-monary tuberculosis in 1903, which became quiescent. Three months previous to the last illness she had an interval appendectomy done. On May 28, 1907, the patient had a sudden chill with severe pain in the right lumbar region. When I saw her the temperature was 104° F., pulse 124, tongue coated. The right kidney could be palpated two fingers below the border of the ribs; it was large and painful to the touch. The urine was turbid; full of pus; reaction acid. Microscopically pus cells and cocci; no tubercle bacilli, no blood, nor casts. For ten days the patient was kept in bed and treated internally without any change in her general condition, the temperature ranging between 101° and 105° F. The quantity of pus in the urine did not diminish. I then made a cystoscopic examination The bladder appeared normal; pus was excreted by the right ureter; urine drawn from the left ureter was normal. Under the impression that I had here to deal with a pyonephrosis, probably of tuberculous origin. I performed a right nephrotomy. right nephrotomy.

At the operation the kidney appeared large and congested. There was no suppuration anywhere in the cortex or pelvis; no tubercles. The kidney was closed with deep sutures. The temperature became normal on the next day. In ten days the urine was clear of pus, and has remained

normal since.

Neither of these cases can be considered, in my opinion, as simple catarrhal pvelitis. In the first place, with the severe condition of the patients clinically and the great amount of pus in the urine. there should have been found some lesion on the walls of the pelvis. Furthermore, at the operation the kidneys were incised and then immediately closed, without draining the pelvis, and still the pyuria ceased imediately.

The first case resembles most the cases of

nephritis accompanied by renal colics and hæmaturia as described by J. Israel (2), which he cured by nephrotomy. The only difference is that in the case described here there was no blood, but pus in the urine. That leucocytes may appear in the urine in Bright's disease, Schnütgen (3) has shown in his analysis of a number of cases from Senator's clinic. Talma reports two cases of renal pyuria, where, at the autopsy, the kidney was otherwise perfectly normal, and only microscopically the canals were filled with leucocytes. Von Jaksch (4) also describes two cases of pyuria in tuberculous patients where, at the autopsy, no lesion was found in the urinary organs. Guyon (5) asserts that tuberculous patients occasionally suffer from pyuria without any lesion in the urinary organs, "pisseurs de pus" he calls them.

The second case, while clinically resembling very closely an acute attack of pyelitis, presented at the operation a perfectly normal pelvis. Furthermore, it was certainly not a case of an ascending pyelitis, and since the pyogenic infection was travelling through the bloodvessels of the cortex of the kidney, it is natural to suppose that the bacilli invaded the whole body of the kidney and caused a general intoxication of the organism, without producing a

localized lesion in the kidney. In my estimation, these cases seem to indicate again that nephritis may be unilateral and present a clinical picture of a surgical disease of the kidneys, and then be amenable to surgical treatment. It may be well to consider in this connection whether, in cases of renal pyuria with uncertain ætiology, that do not respond to medical or dietetic treatment, it would not be proper to wash the renal pelvis before proceeding with operative interference. In my opinion, lumbar incision and inspection of the kidney is hardly a more dangerous undertaking to the patient than a pelvic lavage. On the other hand, we know that there is not another field of surgery where the operator meets with more surprises than in an exploratory incision of the kidney. The biggest stone I ever extracted from a kidney, weighing forty-two grammes, was from a patient with a floating kidney, who had suffered apparently only from general neurasthenia and some vague discomfort in her right side. The examination of the urine showed no abnormality. The house physician and myself were under the impression that a great many of her nervous symptoms were due to the floating kidney, and after eight months of medical treatment and the use of an elastic abdominal binder, we de cided to anchor the kidney, with the result that stones were found.

Consequently, unless it seems absolutely certain that the renal pyuria is due to catarrhal pyelitis, without any involvement of the kidney, nephrotomy is a better procedure than pelvic lavage.

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- 129 WEST ONE HUNDRED AND TWENTY-SECOND STREET.

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LETTER FROM LONDON.

The Research Defense Society.—The Sculptures on the British Medical Association's New building. The New New Nurses' Registration Bill.—The Franco-British Exhibition.—A New List of Honors to Medical Men.—Sir Henry Pilman's Hundredth Birthday.—The Late Dr. Bertram Abrahams.

LONDON, June 30, 1908.

The first meeting of the Research Defense Society took place on June 19th, Lord Cromer, the president, being in the chair. Mr. Stephen Paget, the honorary secretary, stated that there were now 1,290 members, and the number was rapidly increasing. They had already issued a series of pamphlets and leaflets, and these included a short account of all experiments on animals made in Great Britain during 1906, a pamphlet by Dr. Courtauld on the value of antitoxine in the treatment of diphtheria, and a reprint of Dr. Osler's evidence before the Royal Commission on the relation of experiments on animals to the prevention of malaria and yellow fever. The committee had also published a monograph by Colonel David Bruce on the extinction of Malta fever. The committee had decided that the society ought to be incorporated under the Companies Liability Act. In conclusion, the report stated that applications for membership had been received, not only from all parts of the United Kingdom, but from America, Canada, India, and Egypt. There was reason to believe that the example of the society would be followed in America, and that an American society would act in association with that of Great Britain. Lord Cromer then delivered the presidential address. He stated that when he was invited to become president of the society he was surprised, as, not having any special scientific knowledge, he considered himself unfit for the post of president. But it was pointed out to him that this absence of specialized scientific knowledge was an advantage. The men of science wished to show that they had the support of those who could lay no claim to special scientific knowledge. Lord Cromer then eloquently and forcibly gave a defense of vivisection. He had received many letters and communications from antivivisectionists, couched in violent and unreasonable language, but he respected their motives, and would reply to them in no unfriendly spirit. He then went on to show that, from his own experience, he had seen malarial fever almost entirely disappear from the town of Ismailia and the Suez Canal. Had it not been for experiments on animals, the cause of malaria could never have been discovered. He also dealt with rabies and diphtheria, pointing out how in each case experiments on animals had led to results which benefited humanity.

Sir Thomas Barlow then proposed the first resolution, that the Research Defense Society be constituted to make known the value of animal experiments to mankind. He laid stress on the determination of the society to put before the public the whole facts of experimentation on animals and its results, which had been so persistently misrepresented and

distorted.

Lord Robert Cecil, in seconding the resolution, made a most effective speech. On being put to the meeting, the resolution was carried unanimously. Mr. Walter Long then proposed the second resolution, that it should be among the objects of the society to establish branch societies and to take such steps as the committee might, from time to time, think advisable in the interests of science. He referred to the work of stamping out rabies in this country, in which he took so prominent a part, and said that the Government would never have embarked on that enterprise had it not been justified by the knowledge of scientific experts on whose advice it was able to rely.

Dr. C. J. Martin, in seconding the resolution, made a good point when he stated that the progress in the study of cancer was not realized by the public, and he observed that it was not generally known that one out of every eight women or eleven men who reached the age of thirty-five years was, according to the registrar general's return for 1905 and 1906, fated to die from cancer. This resolution was also carried unanimously. Altogether, it was a most successful meeting, and the result speaks well for the success of its future work.

The new buildings of the British Medical Association, in the Strand, are just being completed, and the boardings in front of the building taken down. Several fine statues are exposed in front of the building, and one or two of the London newspapers have been regaling their readers with lurid accounts of indecent statues exposed in public. The eager public has crowded in the Strand as a consequence to gaze on the statues. As a matter of fact, the statues are placed so high up that it is difficult for any one in the street to see them plainly, but, now that attention has been drawn to them by the papers, some of the spectators have come with opera and field glasses to gaze on the spectacle.

Among the medical profession, Mr. Edmund Owen has objected to them as being indecent, and for a time the boardings in front were replaced to hide the statues from view. The Times and other better class newspapers, however, defend the statues, which are also highly praised by architects and artists, including the Slade professor of art of Oxford University. The subject was carefully considered by the building committee of the British Medical Association, and they have recommended the Council to leave the statues as they are. Probably the whole matter is the result of a cleverly engineered scheme of the sensational newspapers to give their readers some spicy copy. The Council

are wise not to take any notice of it.

A new bill has been brought into the House of Lords by Lord Ampthill, to deal with the question of registration of nurses. It provides for the incorporation of a general council of nursing education and registration for the United Kingdom, to be constituted as follows: Three persons appointed by the Privy Council to represent the training schools for nurses in the three kingdoms, five registered medical practitioners appointed by the various medical organizations, and ten registered nurses elected as direct representatives of the registered nurses of

the United Kingdom. Members will hold office for

The duties and powers of the council are to publish annually a register of trained nurses, with their qualifications; to appoint examiners and inspectors; and to issue and cancel certificates. For existing nurses the requirements for registration are that the applicant must be at least twenty-one years of age and of good character, and must either hold a three years' certificate of training from an approved general hospital or poor law infirmary, or produce satisfactory evidence of training, and have been for at least three years in bona fide practice. The examination and registration fees are not to exceed five guineas. This is a comprehensive measure, but it has not much chance of becoming law during the present session of Parliament.

The Franco-British Exhibition is now approaching completion, and the aspect presented by its interior is magnificent. The buildings are all painted white and beautifully decorated, and are arranged as a series of courts with central gardens. The arts and sciences are well represented, including French, English, and colonial exhibits. Most of the scientific institutions of Great Britain and France are represented, including an interesting exhibit by the

Pasteur Institute.

The Honors List in connection with the King's birthday was issued last Friday, and the medical profession are well represented. Among the baronets are the names of Sir Thomas Lauder Brunton, M. D., F. R. C. P., F. R. S., and William Watson Cheyne, C. B., F. R. C. S., F. R. S. Knighthood has been conferred on Colonel David Bruce, C. B., F. R. S., and Robert William Burnet, M. D. Sir Lauder Brunton is sixty-four years of age, and was knighted in 1900. His name is well known to all medical men. Mr. Watson Cheyne is one of the best known surgeons in England. He acted as consulting surgeon to the British forces in the South African campaign, for which he was made C. B. Colonel David Bruce has distinguished himself in bacteriological work, especially in connection with Malta fever. Dr. R. W. Burnet was the medical attendant as well as the friend of the late Prime Minister, Sir Henry Campbell-Bannerman, although his title to recognition does not rest by any means on that circumstance alone.

To-morrow, July 1st, Sir Henry Pitman, M. D., will celebrate his hundredth birthday. Sir Henry is consulting physician to St. George's Hospital, and was one of the first graduates of London University. It is probable that he is the dean of the medical

profession in this country.

I regret to announce the death of Dr. Bertram Abrahams, senior assistant physician to the Westminster Hospital, at the early age of thirty-eight. In addition to being assistant physician he was lecturer on medicine and subdean. He was elected a fellow of the Royal College of Physicians in 1904. He was recently appointed medical inspector of schools to the London County Council. In 1907 he delivered the Arris and Gale lectures before the Royal College of Surgeons. He was the author of several medical works, and edited a German-English dictionary of medical terms.

Therapeutical Aotes.

Formaldehyde Against the Bites of Insects.—According to Joly (*Presse médicale*), the following mixture is useful to allay the irritation caused by the bites of mosquitoes and similar insects. The parts bitten should be lightly touched with the solution by means of the glass stopper of the container:

| P_{i} | Formal | | | | | | | | | | | | | | | | | |
|---------|--------|--------|------|-----|------|------|--|--|------|--|---|--|--|---|----|----|---|---|
| | Acetic | | | | | | | | | | | | | | | | | |
| | Xylol, | | | | | | | | | | | | | | | | | |
| | Canada | turpe | ntii | ıe, | | | | | | | ٠ | | | g | Γ. | X | V | , |
| | Oil of | star a | nis | e, | | | | | | | | | | | | q. | S | |
| M. | | | | | | | | | | | | | | | | | | |

The Egyptian Treatment of Uncinariasis.— This method of treatment is described by Albert G. McGill, in *The Journal of the Arkansas Medical Society* for May 15, 1908, as follows:

After having administered a preliminary purgative to clear out the canal, give the following:

| \mathbf{R} | Oil of eucalyptus, | | |
|--------------|---------------------|------|--|
| | Spirit of chlorofor | | |
| M. | Castor oil, | | |
| TATE | | | |

This mixture is divided into two or three doses, and a dose is given every two or three hours, the whole to be followed by a saline purgative.

The Intravenous Administration of Strophanthin.—The Medical Chronicle for July, 1908, cites an article by C. Höpffner, in the Deutsches Archiv für klinische Medizin (1908, 92, p. 485), reviewing the results in a series of cases in which strophanthin was administered intravenously. Höpffner has treated thirty-four patients, giving seventy-eight injections in all. He recommends the dose of one milligramme (1/64 grain), which may be repeated in not less than twenty-four hours. One of his cases, a patient with chronic nephritis and heart failure, received and profited by eleven such doses in six weeks. The treatment is said to be indicated in severe cases of heart failure that will not react to digitalis, or in patients where an immediate effect upon the heart is desired, and strophanthin is employed to pave the way for digitalis, or thirdly, in cases of chronic nephritis with heart failure. No unpleasant symptoms follow these intravenous injections, now that the drug is supplied and administered sterile.

Another report on the use of strophanthin administered intravenously in cardiac lesions by Dr. F. Lust is also reviewed in the number of the Medical Chronicle previously cited. After a reference to the papers of other writers, Lust describes his own experience of the method, saying he had been highly impressed with its merits and the good and speedy effects it had upon the failing heart. The strophanthin is supplied in sterilized solution; the dose is one third to one milligramme (approximately 1/192 grain to 1/64 grain); the intravenous injections should not be given more often than once in twentyfour hours. Their good effect in slowing, regularizing, and strengthening the cardiac contractions appears in a few minutes; the respirations become less rapid, and the secretion of urine is much accelerated within a few hours' time. The number of

injections that it is advisable to give in any given case depends upon the way in which the patient reacts to the drug. If no improvement is seen after two or three doses, treatment with digitalis, theocin, diuretin, or some other diuretic may well be begun; most cases of heart failure with œdema, however, react well to strophanthin. Lust gives details, pulse tracings, and tables showing the good effects of the intravenous injection of the glucoside in a number of patients with heart disease. He also notes that there are cases of failure of the cardiac muscle in which all drugs seem powerless, and he is as vet doubtful whether strophanthin can be employed with success to ward off heart failure in lobar pneumonia. He has only once seen any ill effects follow its employment, due attention being paid to the fact that it exerts a cumulative action. If there is much arteriosclerosis, the dose should be one third to one half milligramme, that is, 0.30 to 0.50 c.c. of the solution in which the drug is supplied.

Caustic Paste for Old Ulcers.—Felix (Gasette médicale de Paris, June 15, 1908) is the author of an interesting note on the treatment of the old and rebellious ulcers (rodent ulcer, varicose, indurated, and syphilitic ulcers, etc.), which occupy so much of the surgeon's time and attention. Positive results have been obtained in the treatment of these cutaneous lesions by means of the rational use of x rays and radioactivity, especially of radium bromide, yet it is not always possible to apply these agents, their use being denied for obvious reasons to practitioners in remote country districts. It is for the benefit of such that Dr. Felix describes his method of cauterization by means of a paste composed of substances that are respectively caustic, antiseptic, anæsthetic, hæmostatic, and modifiers of tissue. The formula for his paste is as follows:

| P. | Wheat flour, |
|----|------------------------------|
| | Starch, Siss; |
| | Corrosive sublimate, gr. xv; |
| | Thymol iodide,gr. xv; |
| | Cocaine,gr. xv; |
| | Monobromated camphor, |
| | Carbolic acid, crystals, |
| | Zinc chloride, dry, |

Mix the ingredients in a glass or porcelain mortar, having previously reduced each drug separately to a state of fine powder. When all are sufficiently mixed add in small quantities at a time enough distilled water to make a homogeneous paste free from gritty particles or lumps. The paste is made more ductile and malleable by the addition of a small amount of glycerin.

Formula for a Sulphur Bath.—To prepare a sulphur bath, order to be dissolved in a large sized bath tub of water the following mixed powder:

| R | Sodium | sulphide, | , | | | | | | ٠ | | | | | | | . 3 | i ; | |
|----|--------|------------|---|--|--|--|--|--|---|--|--|--|--|--|--|-----|-----|--|
| | Sodium | chloride, | | | | | | | | | | | | | | šii | | |
| | Sodium | carbonate. | | | | | | | | | | | | | | 311 | 11 | |
| Μ. | | | | | | | | | | | | | | | | | | |

Formic Acid as a Tonic After Diphtheria.—In doses of from five to twenty minims of a twenty-five per cent. solution, formic acid is recommended for its tonic and stimulating effects in convalescence from diphtheria, by C. B. Kerr and D. H. Croom. It is given in the doses stated every four hours.—Berliner klinische Wochenschrift, June 22, 1908.

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NEW YORK, SATURDAY, JULY 18, 1908.

"THE OPERATION WAS SUCCESSFUL, BUT THE PATIENT DIED."

This hackneyed statement has long been a favorite with those who delight in a "policy of pin pricks" directed against the medical profession, and few are the penny a liners who are above the temptation to use it, on account of its supposed humor, without any real intention of casting a slur on operative surgery. And yet it is quite conceivable that it was first employed by a surgeon and with perfect propriety. Many a surgical operation has been begun and abandoned unfinished. The difficulties may have been foreseen, and yet the operator, acting to give his patient the only chance, has hoped that they would prove less serious than he had supposed, but only to meet with disappointment. Again, difficulties not at first expected may have shown themselves in the course of the operation. Such occurrences result in an unsuccessful operation. If the obstacles to the completion of an operative procedure, whether expected or unforeseen, are overcome, the operation is correctly classed as successful, no matter what the final result to the patient may have been. No experienced surgeon needs to have instances of either of the causes of failure which we have mentioned brought to his attention; he will readily recall them from his own observation.

The situation is not without parallel in other than surgical undertakings. Last Sunday the New York Times published a picture the legend of which was as follows: "Transplanting an oak tree sixty feet in height. A locomotive crane moved this tree 200

feet recently at Ampere, N. J., and it was replanted with success." Now, what does "with success" mean in this legend? The employment of the word "recently" seems to imply that not enough time had elapsed since the undertaking was carried out to establish the fact that the great tree lived and flourished after its accomplishment. We all know that the transplantation of a large tree is a piece of work that calls for exceeding carefulness if the tree is to take to its new site and maintain its life. Some of its vicissitudes, some of the elements that preclude its continued life and growth, are perhaps beyond our ken, but we do know that, unless certain precautions are observed, ultimate failure is inevitable. If these known requisites are complied with, the transplantation itself (the analogue of a surgical operation) may properly be described as successful; if the unknown requisites alone have not been met, the tree languishes and finally dies, but in the light of our present knowledge, no fault can be found with him who declares that the process of transplantation was successful.

A REVISED NOMENCLATURE AND CLASSIFICATION OF DISEASES.

We would call particular attention to a circular recently issued by Dr. Cressy L. Wilbur, chief statistician of the Bureau of the Census, concerning the work of revising the nomenclature and classification of diseases and injuries, undertaken by a special committee of the American Medical Association acting in conjunction with the Bureau of the Census, the government medical services, and various medical organizations. We print Dr. Wilbur's circular in our department of Miscellany this week. The committee will be glad to receive suggestions from any source. They may be addressed either to Dr. Wilbur, Bureau of the Census, Washington, D. C., or to the chairman of the committee, Dr. Frank P. Foster, 554 West 114th street, New York. It is desirable that they should be received before October, as the work of arranging them for the committee's consideration will necessarily take a good deal of time, and after that the final revision will have to be made.

The nomenclature drawn up by a joint committee appointed by the Royal College of Physicians of London has been largely followed in this country for a number of years now, and it is thought that it should be departed from in the proposed new nomenclature as little as may be consistent with accuracy and logical arrangement. Physicians who are willing to offer suggestions to the committee are therefore asked to examine that nomenclature in connection with any changes that they may be

disposed to recommend. The fourth edition (third revision) should be used. It is a book of 496 pages, published in London in 1906, and may be obtained by sending the price (one shilling) to Wyman & Sons, Ltd., Fetter Lane, London, E. C., England.

THE CLINIC FOR TUBERCULOUS DISEASE A MEANS OF GENERAL DISPENSARY IMPROVEMENT.

In our issue for May 16th there was published a suggestive and stimulating article by Dr. James Alexander Miller, president of the association, on the results achieved and the plan of campaign for the future of the Association of Tuberculosis Clinics of the City of New York. The cardinal and effective features of the work of this association, which has demonstrated its usefulness as a centre in the warfare against tuberculous disease in this city, are the principles of cooperation and division of the city into districts for efficient and united effort. A remarkable feature has been the cordial support and recognition, both lay and professional, which has been accorded the plans of the association from its inception.

We believe that the principle of limitation of out patient activities to a specified district is a valuable step forward which will not be confined to the treatment of tuberculous disease alone. Its many obvious advantages in a city of the size and topography of New York are certain in time to insure its adoption for every phase of general outdoor relief. The saving for the indigent patient in expense and time away from his employment, the elimination of the hospital rounder and all wasteful duplication, the economy of effort for the visiting nurse and social service department, which are now essential parts of the modern, well equipped dispensary, and above all the closer personal relations with the patient which the district system makes possible are benefits not to be lightly considered. The well directed enthusiasm of workers in the campaign against tuberculous disease promises to result in a general awakening to the possibilities of increased efficiency in the care of all classes of ambulant patients.

There has been in this country a curious inconsistency, which is not to be found in the best institutions abroad, in the status of the patient in the out patient department and the same patient when transferred to a ward. In the former case almost any kind of routine treatment has been considered good enough, records have been poorly kept, laboratory examinations have been too rarely made, the physician has been hurried and insufficiently provided with the necessary appliances for insuring the best results, and there has been only too often a

want of scientific pride and spirit of thoroughness which should accompany medical effort wherever performed. All this has long been appreciated by the men actually engaged in the classes. The conditions, however, have appeared discouraging and almost hopeless as to remedy, on account largely of the apparent indifference of hospital managers and medical boards to the needs of their out patient departments. The dispensary has too long been the neglected stepchild of the hospital.

Perhaps the first step toward a real betterment of the situation was taken some two years ago, when, in an important address before the Presbyterian Hospital Alumni Association of New York, Dr. Richard C. Cabot clearly pointed out the existing evils and insisted upon the necessary rôle of the dispensary as an integral part of any adequate hospital system. He also in a convincing manner indicated the methods to pursue in improving the character of the medical service, and emphasized the value of district nursing and social service as developed in his own work in Boston. These fruitful ideas in New York have perhaps most promptly and energetically taken root in the field of tuberculous disease, the time being ripe on account of the widespread and growing interest in this direction, and the recognition of the fact that this great and necessary work lies entirely outside of the domain of the hospital proper.

THE UNDERGRADUATE MEDICAL ASSO-CIATION OF THE UNIVERSITY OF PENNSYLVANIA.

The May number of the University of Pennsylvania Medical Bulletin is devoted to the publication of the papers read at the first annual meeting of the Undergraduate Medical Association of the University of Pennsylvania, which was held on April 8th. There are connected with the university a number of undergraduate medical societies, which have been organized partly for social and partly for scientific purposes. Each of these societies is a member of the Undergraduate Medical Association, and each appointed a representative to read a paper at this, the first annual meeting. The association is organized and worked after the plan of the American Medical Association. A casual glance at the papers published indicates that the men who prepared the scientific material for this meeting, all of whom are members of the graduating class, have contributed a very creditable collection of interesting articles. We have always thought it a pity that the old requirement of a thesis for graduation was abandoned; here we see a method of reviving it, on a small scale, to be sure, but in a way that will be

of great benefit to the men taking part in the scientific work of the meetings. Dr. Talcott Williams was the orator of the day, and he spoke of the life of Dr. S. Weir Mitchell.

CARCINOMA.

"The cause of carcinoma—the subtlest of human diseases today—is essentially a biological problem the attempted solution of which has drawn out many wild guesses, not a few misapplications of biological principles, and some good working hypotheses," writes G. N. Calkins in the May number of the Journal of Experimental Medicine in opening a discussion on the so called "rhythms of growth energy in mouse cancer."

In the numerous studies of the Jensen mouse cancer it has been clearly established that, like many free living cells-Calkins has shown it for Paramecium aurelia and Woodruff for Oxytricha fallax -there are periods of growth activity which alternate with periods of depression of vitality occurring at more or less rhythmical intervals. Bashford, Murray, and Boyen have accumulated considerable evidence bearing on this point for the mouse tumors, and the plottings of their results show curves of alternate growth waves arguing for the correlates of rhythms of growth energy in the cancer cells. While Calkins holds that the results obtained by these investigators may be interpreted along different lines, yet the tendency of their argument is in accord with some of his own experiments, that there is a regular variation in the energy growth of the cancer, the source of the alternate rhythm of which must be sought in the cells.

These cancer cells get their nourishment as do other epithelial cells; they are bathed by the same fluids, and are subject to the same general conditions of metabolism, but other epithelial cells do not multiply as the cancer cells of mice do. The cancer problem has, then, to do with the specific attribute which distinguishes the cancer cells from these other epithelial cells, and once more one is face to face with the underlying why and wherefore, as to the source of the stimulus which causes the infectivity combined with the increase of the division energy.

Calkins argues that the cells themselves must carry with them the sources of their stimuli, and that these stimuli must be the same, both in the primary tumor and in the secondary tumors which develop therefrom, and when in addition it is found that rhythmical variations in growth energy are found comparable to what one finds in unicellular organization, the conductor mevitable, to the author, the conductor it is finally to development is within, or associated with the cancer cell itself.

The Cohnheim test then falls before the biological requirements. The hypothesis of Ribbert does not permit of the perpetuation of the energy stimulus; the chemical theories of Marchand do not allow of the continuation of the initial stimulus, and gradual loss of energy is the consequence; and so Calkins argues that the "cause of the division energy lies in the stimulating poison of some self contained and ordinarily invisible microorganism whose rhythmical variations in vitality may possibly account for the rhythmic variations in infectivity."

That we have found no parasite of course proves nothing. The rhythms in growth energy of the Jensen mouse tumor are not precisely like those known for the protozoa thus far studied, but the author throws out the suggestion that in the newly found spirochætes there is a possibility that the group of organisms may be found that is at the foundation of the cancer problem.

"THE DIRTY CUFF."

Under this heading the Lancet, in its issue for July 4th, deprecates the wearing of shirts that are not altogether white, intimating that colored shirts are worn chiefly by persons who seek to conceal the soiled state of the shirt. "There can be no doubt at all," says our contemporary, "that, when the cuff picks up, as it is so prone to do, dirt from the counter, desk, or table, it picks up also a multitude of microorganisms." But is the colored shirt so generally preferred for the reason that it can be worn longer than the white shirt without looking soiled? We doubt if it is as a rule. Certainly the colored shirt is worn on all but formal occasions by men who are most exacting in the matter of cleanliness, men who could not endure to go dirty and who could not overlook the soiling of their linen even if it was made of "dark goods."

The widespread preference for the colored shirt is due, we believe, to the fact that it can be worn with the bosom unstarched and still not offend sticklers for appearances. Those sticklers are so outspoken, however, that it must at first have taken some courage to revolt against the heat and stiffness of the starched shirt bosom. We wish that men would carry their courage a little further and refuse to wear the starched collar, that most uncomfortable of articles for weather that is at all warm. Regard for comfort, within the bounds of decency, is in no wise incompatible with one's natural liking for cleanliness or with one's just deference to the reasonable demands of others. But fashion is tyrannical, and we must wait for an era of higher civilization before we can ignore her behests, however senseless they may be.

Some of the garments usually worn by women seem to be much more comfortable than the analogous articles to which men are accustomed, but women go on tolerating flowing sleeves (when they are in fashion), long skirts, and oppressive corsets. Who shall say that women are dirty because they so commonly wear colored gowns? Their trailing skirts do, indeed, become dirty and reeking with microorganisms, but not the colored ones any more than those which are white. The lower border of a skirt collects its dirt on the inside, where it is invisible, so that an uncleanly woman would gain nothing by wearing colored skirts instead of white ones. Moreover, we believe that the cuffs of the colored shirt waist are quite as likely to be spotlessly clean as those of the same garment made of white goods. Things are not always what they seem, and it is hardly fair, we think, to take it for granted that a colored shirt marks an uncleanly man.

Rems Items.

Personal.—Dr. Charles Phillips Emerson was inaugurated as superintendent of the Clifton Springs Sanatorium, Clifton Springs, N. Y., on July 9th.

A Statue of Queen Alexandra at the London Hospital was unveiled on July 10th, the occasion being suitably celebrated.

The Geneva, N. Y., Medical Society held its regular monthly meeting on the evening of July 16th. The principal feature of the programme was a paper by Dr. Skinner.

A Department of Hygiene and Physical Culture has been established at the Massachusetts Agricultural College, with Dr. Percy L. Reynolds as director.

Changes of Address.—Dr. Brooke M. Anspach, to 119 South Twentieth Street, Philadeiphia; Dr. Ralph N. Prentiss, from Holyoke, Mass., to 1212 Kings Highway, Brooklyn N. Y.

The Eleventh French Medical Congress will convene at Geneva, Switzerland, on September 3d. The French railways have announced 2 reduction of fifty per cent. in the railway fares of physicians attending the congress.

The Douglas Hospital of Philadelphia laid the corner stone of its new building on Sunday, June 28th. The Frederick Douglas Memorial Hospital is officered and managed exclusively by negroes. There is a training school for nurses in connection with the hospital.

The Free Distribution of Diphtheria Antitoxine by the State Department of Health of Pennsylvania has resulted in the saving of nearly 8,000 lives, according to the statement of Health Commissioner Dixon in a paper read before the Pennsylvania Pharmaceutical Association.

The Care of the Baby is the title of a thirty-two page illustrated pamphlet just issued by the Illinois State Board of Health for gratuitous distribution. The pamphlet gives sound advice on the question of the feeding and care of infants, and the information is put in simple, direct language. This is the fourth revised edition of the pamphlet.

Appointments at the University College of Medicine, Richmond, Va.—At a recent meeting of the board of trustees of this college, six new professors were added to the faculty, as follows: Dr. A. G. Brown, Jr., professor of the theory and practice of medicine; Dr. J. Garrett Nelson, professor of practice of medicine and physical diagnosis; Dr. McGuire Newton, professor of pædiatrics; Dr. William J. Cowardin, professor of orthodontia; Dr. William Pilcher, professor of prosthetic dentistry; and Dr. M. B. Rudd, professor of metallurgy.

The Mortality of New Orleans, La.—During the month of June, 1908, there were reported to the Board of Health of the City of New Orleans 566 deaths from all causes, 344 white and 222 colored. The annual death rate in 1,000 of population was 16.00 for the white population, 28.64 for the colored, and 19.35 for the total white and colored.

An English Physician a Centenarian.—Sir Henry Pitman, M. D., of London, celebrated his one hundredth birthday on July 1st. He received congratulatory messages from King Edward, the council of the British Medical Association, and the Royal College of Physicians and Surgeons, the latter body presenting to him a handsome piece of plate.

Research Work in Nutrition in the Tropics.—Dr. Hans Aron, of Berlin, Germany, has been appointed professor of physiology in the Philippine Medical School, Manila. Dr. Aron will devote special attention to the question of tropical foods, and the Philippine administration has placed \$2.000 at his disposal for the purchase of laboratory apparatus.

Cancer Research.—An international association to promote research work in cancer has been established in Bertilin. The principal objects of the association are the establishing of an international centre of information on matters relating to cancer research, and the collection and publication of cancer statistics. An effort will be made to organize international cancer conferences.

Charitable Bequests.—By the will of William Farr, the Pennsylvania Hospital and the Wills Eye Hospital, Philadelphia, will each receive the surplus of the estate for the endowment of free beds to be known as the Mary G. Farr Free Beds.

By the will of Elizabeth Renz, the German Hospital, Philadelphia, and the Philadelphia German Protestant Home for the Aged, of Philadelphia, become contingent beneficiaries.

Diet Kitchens in New York.—The New York Diet Kitchen Association announces that another station, the eighth, is about to be opened near Columbus Avenue and One Hundredth Street. Stations are now maintained at 437 West Forty-first Street, 160 Mott Street, 146 West Seventh Street, 265 East Sixty-sixth Street, 1636 Lexington Avenue, 26 Barrow Street, and 205 West Sixty-second Street. The kitchens supply certified milk for destitute children without charge.

The Health of Pittsburgh.—During the week ending July 4, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 2 cases, 0 deaths; typhoid fever. 20 cases, 4 deaths; scarlet fever, 13 cases, 1 death; diphtheria, 6 cases, 0 deaths; measles, 95 cases, 5 deaths; whooping cough, 11 cases, 1 death; pulmonary tuberculosis, 26 cases, 6 deaths. The total deaths for the week numbered 148, in an estimated population of 565,000. corresponding to an annual death rate of 13.61 in 1,000 of population.

The Seventy-sixth Annual Meeting of the British Medical Association will be held in Sheffield, England, July 24th to 31st. The address of the president, Dr. Henry Davy, will be delivered in the Firth Hall of the University on July 28th. The address in medicine will be delivered by Dr. James Kingston Fowler, and the address in surgery by Mr. Rutherford Pye-Smith. Professor Edmund Owen will deliver a popular lecture on Dust and Disease. There will be seventeen scientific sections, which will meet on Wednesday, Thursday, and Friday, July 29th, 30th, and 31st. An extensive programme of papers to be read has already been published.

Medical Day at Willow Grove.—The social reunion of physicians from southeastern Pennsylvania, Delaware, and western New Jersey, which takes place on the afternoon and evening of Wednesday, July 22d, at Philadelphia's suburban resort, Willow Grove, promises to be a great success. An effort is being made to include in the gathering all medical societies that hold social meetings during the summer season, and each society will be afforded an opportunity to hold its individual meeting, if desired. Otherwise the formal programme will be omitted. Officers of participating bodies will act as a committee of the whole to attend to the comfort of the visitors. The guests of honor will be Dr. Joseph D. Bryant, of New York, and Dr. William L. Estes, of South Bethlehem, Pa.

The Drinking Water on Railway Trains.—As a result of recent investigations, the Department of Health of the State of New York reports that the water supplied passengers on railway trains in the state corresponds in quality to that of the cities and towns through which the roads pass. The supply is usually drawn from the city supply at relay stations, though on the dining cars special spring water is furnished on most lines. In a few instances only was the source of supply open to objection, and it is understood that in these a change will be made.

Officers of the Reserve Medical Corps.—Commissions for more than 150 surgeons as officers in the Reserve Medical Corps of the Army have been made out and forwarded to President Roosevelt for signature, we learn from the Army and Navy Journal. Physicians in good standing who would like to serve in case of war should apply for appointment in the Reserve Corps. No salary is received save while in active service, and no one can be ordered on active service against his wishes. An appointment does not conflict with militia service, and a special effort is being put forth to secure the applications of all the medical officers of the militia now in service. *

The Telephone as a Factor in the Transmission of Disease was recently made the subject of an interrogation in the English Parliament. In England the telephone service is a government affair, being conducted by the postal authorities. The question was brought up by an article by Dr. Allan, published recently in the Lawcet, in which the statement was made that disease germs were found in one out of six public telephones. The Postmaster General declares that none of the numerous devices for the prevention of infection of the transmitters have proved practicable, and that the only safeguard against infection is frequent washing.

Brooklyn Charities Cooperate in Work for Babies.—Under the general supervision of the Brooklyn Children's Aid Society many of the charity associations of Brooklyn have begun work under a cooperative plan in behalf of the lives and general health of babies. The plan involves the division of the crowded portion of Brooklyn into three sections. Greenpoint, East New York or Brownsville, and the river front south of the Brooklyn Bridge, and these larger sections, in turn, into smaller districts carefully mapped. All newborn infants and all who are ill will be visited and looked after, as occasion may require, the children and their mothers being sent to the mountains or the seashore where it is deemed necessary.

Infectious Diseases in New York:

We are indeleted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July

| m 1 | Cases. Dea | ths. C | July 1: ases. De | aths. |
|------------------------|------------|--------|---------------------|-------|
| Tuber value pulmonali | 374 | 150 | 444 | 107 |
| 1 Filtrice and | 1.2 | 28 | -35 | 33 |
| MCT- | 400 | 15 | 431 | 1.1 |
| Scar'et fever | -244 | -23 | 187 | 16 |
| Smallpox | | | | |
| Varuer's | 51\$ | | 4.7 | |
| Typhod forr | 37 | 4 | 2.2 | 10 |
| Wheep ng caugh | 17 | 7 | 1. | .3 |
| Cerebro pane moning to | | 2 | 1, | 5 |
| Table | T 141 | 221 | | -00 |

The Tri-State Medical Society of Illinois, Iowa, and Missouri.—The sixteenth annual meeting of this society will be held in Ottumwa, Ia., on Tuesday and Wednesday, September 8th and 9th. According to the programme which has been prepared this meeting promises to be one of the greatest in the history of the organization. Over sixty papers covering a wide range of subjects of interest to the general practitioner will be read by prominent members of the medical profession. The president's address on Recent Progress in Medicine and Surgery will be delivered by Dr. Godfrey Oldfield Cuppaidge, of Moberly, Mo., on Tuesday evening. On Wednesday morning officers for the year 1900 will be elected. The present officers of the society are: President, Dr. G. O. Cuppaidge, of Moberly, Mo.; first vice president, Dr. C. C. Cochran, of Jacksonville, Ill.: Dr. Felix W. Garcia, of St. Louis, Mo.; secretary, Dr. Joseph E. Chambers, of St. Louis, Mo.; treasurer, Dr. Emory Lauphear, of St. Louis, Mo.; treasurer, Dr. Emory Lauphear, of St. Louis, Mo.

Assistant Surgeons Wanted for the Public Health and Marine Hospital Service.-A board of medical officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B Street S. E., Washington, D. C., on Monday, September 14, 1908, at 10 a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the United States Public Health and Marine Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials as to their professional and moral character. The examination will be physical, oral, written, and clinical. In addition to the physical examination the can-didate will be required to certify that he believes himself free from any ailment which would disqualify him for service in any climate. The written examination begins with a short autobiography of the candidate, and consists of questions bearing on the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and the natural sciences. The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver. After four years' service assistant surgeons are entitled to examina-tion for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority. Assistant surgeons receive \$1,600 a year, passed assistant surgeons receive \$2,000, and surgeons Furnished quarters are provided for officers and their families, and where this is not practicable, commutation at the rate of \$30, \$40, and \$50 a month, according to grade, is provided. The tenure of office is permanent. For further information address the Surgeon General of the Public Health and Marine Hospital Service. Washington, D. C

The Health of Philadelphia.—During the week ending June 27, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 34 cases, 6 deaths; scarlet fever, 30 cases, 1 death; chickenpox, 14 cases, 0 deaths; dipitheria, 51 cases, 2 deaths; cerebrospinal meningitis, 1 case, 0 deaths; measles, 148 cases, 6 deaths; whooping cough, 48 cases, 6 deaths; plumonary tuberculosis, 100 cases, 53 deaths; pneumonia, 20 cases, 20 deaths; erysipelas, 3 cases, 0 deaths; puerperal fever, 3 cases, 1 death; mumps, 5 cases, 0 deaths; cancer, 20 cases, 33 deaths; retanus, 2 cases, 0 deaths; cancer, 20 cases, 34 deaths; telanus, 2 cases, 0 deaths; cancer, 20 cases, 34 deaths; telanus, 2 cases, 0 deaths, The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 8; diarrhea and enteritis, under two years of age, 55; dysentery, 2 cases. The total deaths for the week numbered 500, in an estimated population of 1,532-738, corresponding to an annual death rate of 1603 in 1,000 of population. The total infant mortality was 165; under one year of age, 143: between one and two years of age, 22. There were 44 still hirths; 29 males, and 15 females. The total precipitation was 0.03 inch. The maximum temperature was over 80° every day, except the 26th, when it was 78°. There were 5 deaths from heat and sunstroke; 2 adults and 3 minors.

During the week ending July 4, 1008, the following cases were reported: Malaria fever, 2 cases, 0 deaths; typhoid fever, 34 cases, 4 deaths; scarlet fever, 24 cases, 3 deaths; chickenpox, 6 cases, 0 deaths; diphtheria, 61 cases, 13 deaths; measles, 141 cases, 6 deaths; thooping cough, 43 cases, 12 deaths; pulmonary tuberculosis, 120 cases, 60 deaths; pneumonia, 21 cases, 28 deaths; erysipelas, 5 cases, 1 death; pneumonia, 21 cases, 28 deaths; trachoma, 2 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 13; diarrhea-and enteritis, under two years of age, 96; cholera morbus, 1; tetanus, 1. The total deaths for the week numbered 521, in an estimated population of 1,532,738, corresponding to an annual death rate of 17,61 in 1,000 of population. The total infant mortality was 100; under one year of age, 158; between one and two years of age, 32. There were 45 still births; 27 males, and 18 females. The total precipitation was 0.09 inch. The maximum temperature was above 80° every day. There were 17 deaths from heat and sunstitude, 7 adults, and 1 minutes.

The Medical Society of the County of Ontario, N. Y., The Medical Society of the County of Untario, N. Y., held its regular quarterly meeting on Tuesday, July 14th. The programme included the following papers: Pulmonary Complications of Typhoid Fever, by Dr. C. Lytle, of Geneva; Anæsthetics, by Dr. G. W. McClellan, of Canandaigua; When Should Local Anæthesia be Substituted for General, by Dr. M. B. Tinker, of Ithaca; The Relation of a Sound Heart to Surgical Operations, by Dr. John Parmenter, of Buffalo.

The Association of Scientific Societies of Japan held.

The Association of Scientific Societies of Japan held a reception in Tokio at the Ongaku-Kakko, at 2:00 p. m. on Tuesday, June 16th, in honor of Dr. Robert Koch, who recently landed in Japan on his trip around the world. who recently landed in Japan on his trip around the world. Baron Ishiguro delivered the opening address, and this was followed by the address of welcome, which was delivered by Professor Miura, president of the Medical Society of Tokio. Dr. Koch replied, and closing remarks were made by Professor Aoyama. At 7:00 p. m. a theatrical entertainment was held at the Kabukiza Theatre, the performance being opened by a speech by Baron Telegraph.

Takagi.

The Mortality of Chicago.—During the week ending July 4, 1908, there were reported to the Department of Health of the City of Chicago 440 deaths from all causes, as compared with 508 for the previous week and 456 for the corresponding period in 1907. The annual death rate in 1,000 of population was 10.59, which is the lowest death rate ever recorded in Chicago during the month of July, and is the lowest on record for any week since June 18, 1904. The principal causes of death were: Apoplexy, 10; Bright's disease, 32; bronchitis, 6; consumption 50; cancer, 26; convulsions, 6; diphtheria, 10; heart diseases, 47; influenza, 1; intestinal diseases, acute, 37; measles, 4; nervous diseases, 11; pneumonia, 33; 37; measles, 4; nervous diseases, 11; pneumonia, 33; scarlet fever, 2; suicide, 9; typhoid fever, 7; violence (other than suicide), 22; whooping cough, 4; all other causes, 123.

The Health of the Canal Zone.—During the month of May, 1908, the total mortality in the Canal Zone was 205, May, 1908, the total mortanty in the Canal Zone was 20% in a population of 117,827, corresponding to an annual death rate of 20.87 in 1,000 of population. There were 3 deaths from typhoid fever, 2 from malarial fever, 3 from astivo-autumnal malaria, 18 from clinical malaria, 2 from hæmoglobinuric fever, 1 from measles, 4 from amæbic dysentery, 6 from clinical dysentery, 2 from beriberi, 4 from purulent infection and septicæmia, 24 from tuberculosis of the lungs, 6 from other forms of tuberculosis, including general tuberculosis, 4 from carricular theuristics. culosis, 4 from carcinoma, I from acute articular rheumatism, I from bronchopneumonia, 25 from pneumonia, 21 from diarrhœa and enteritis, under two years of age, and 2 from diarrheea and enteritis, over two years of age The improvement in the sanitary conditions continues. The remarks made about the death rate of the different classes of the population in former published comments upon the health of the Canal Zone hold good for the report for May.

Philadelphia Bureau of Health Statistics .- During the Philadelphia Bureau of Health Statistics.—During the month of May, 1908, in the Division of Medical Inspection 2,390 inspections were made, exclusive of schools; 1,297 fumigations were ordered; 38 cases were referred for special diagnosis; 5,589 visits were made to schools; 693 children were excluded from school; 175 cultures were taken; 129 injections of antitoxine were given, and 392 persons were vaccinated. In the Division of Vital Statistics, 1876 deaths, 3,450 births, and 100 persons 392 persons were vaccinated. In the Division of Vitages were reported. In the Division of Milk Inspection 10.268 were reported. In the Division of Milk Inspection 10,208 inspections were made of .252.971 quarts of milk, of which 660 quarts were condemned. Nine specimens were examined chemically and 1,271 were examined microscopically. In the Division of Meat and Cattle Inspection 3.457 inspections were made; 482 pieces of dressed meat were condemned; 111 places were found unsanitary; 1,326 post mortem examinations were made, with 352 condemnations. In the Division of Disinfection 208 furnigations were made for scarlet favor; 208 for dishthetical tions were made for scarlet fever; 298 for diphtheria; 84 for typhoid fever; 269 for tuberculosis; 314 for miscellaneous diseases; and 32 schools were disinfected. In the Bacteriological Laboratory 1,052 cultures were examthe bacteriological Laboratory 1,052 cultures were examined for the presence of bacillus diphtheriæ; 268 speciments of blood were examined for the serum diagnosis of typhoid fever; 1,271 specimens of milk were examined; 130 specimens of sputum were examined; 8 disinfection tests were made; and 3,262,200 units of antitoxine were distributed. In the Chemical Laboratory 137 examinations were made.

Dith of Current Titerature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL July 0, 1908

The Sanctity of Medicine, By Thomas F. Harrington. Obliterating Endarteritis Types and their Surgical Importance, By Charles F. Painter.

Obscure Fever in Infancy and Early Childhood, By JOHN LOVETT MORSE.

3. Obscure Fever in Infancy and Early Childhood.-Morse speaks of fever accompanying endocarditis, typhoid fever, malaria, eczema, dentition, in the new born, toxic absorption from tonsils, and adenoids, otitis media, cervical adenitis, pyelitis, anæmia, rickets, syphilis, tuberculosis, intestinal toxæmia and autointoxication. Most important is chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes, causing a continued elevation of temperature without physical signs. Tuberculosis of other organs in early life usually runs such an acute course and is accompanied by such definite physical signs that it is difficult to overlook or mistake it. The diagnosis of chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes during life is always difficult and often impossible without the aid of the tuberculin test in some form. In cases in which the tuberculin test is inadvisable the presence of a fluctuating opsonic index may be of great value in diagnosis. A history of definite exposure to tuberculosis is also of great assistance in diagnosis. The absence of such a history does not, of course, in any way rule out tuberculosis. Judging from the frequency with which tuberculosis is found at autopsy in childhood, and from the number of healed tuberculous foci found in later life, it would seem probable that a large proportion of the obscure fevers of infancy and early childhood are due to tuberculosis. It is the author's belief, however, that hidden tuberculosis is comparatively seldom the cause of continued elevation of temperature in early childhood, and that in the majority of cases in which the fever is supposed to be tuberculous in origin, it really is due to disturbances of digestion or metabolism. The explanation of this comparative infrequency of tuberculosis as a cause of obscure fever in infancy and early childhood is presumably that at this period of life tuberculosis tends to dissemination and a rapidly fatal course. Chronic latent cases are consequently relatively rare. Acute elevations of temperature, due to intestinal toxæmia, in infancy and early childhood seldom cause trouble in diagnosis, as they are almost always accompanied by marked symptoms, such as vomiting, diarrhœa, or obstinate constipation. In some instances, however, these symptoms may be so slight as to apparently not account for the fever. Long continued elevations of temperature without very evident cause in infancy and early childhood are probably most often due to a mild grade of intestinal toxæmia. Intestinal toxæmia is especially likely to occur in children who are overfed or improperly fed, and it is especially likely to develop in warm weather when the digestive powers are enfeebled by the heat and when bacterial infection of the food is more common. Lack of fresh air, sunlight, and exercise are important predisposing factors. There is considerable difference of opinion, however, as to what element or elements in the food

are most likely to favor the development of this condition. Some believe it is the proteids, others the carbohydrates, and still others the fats. tain others believe that milk is usually at the bottom of the trouble, while others attribute it to the fat in the milk. The author's experience leads him to believe that in the majority of the chronic cases there is decomposition of the proteids, and that the symptoms are comparatively seldom due to an excess of carbohydrates. Such cases usually yield fairly promptly to a milk and starch diet combined with proper hygiene and mild laxatives. The object of the milk and starch diet is to change the intestinal culture medium and to thus modify the intestinal flora. Disinfection of the intestine is impossible; sterilization of the food is of little or no value. The carbohydrate diet, however, furnishes a medium on which the putrefactive bacteria do not thrive, favors the growth of antagonistic bacteria, and thus diminishes the proteid putrefaction and intestinal autointoxication. Buttermilk is often useful in these cases for the same reason.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. July 11, 1908.

- Ine Central Nervous System, By C. E. Beevor.
 Insanities Caused by Acute and Chronic Intoxications with Opium and Cocaine, By Alfred Gordon.
 The Feeding of the Healthy Infant. The Coordination of Single Muscular Movements in
- By Joseph Brennemann. Clinical Observations on Antigonococcic Serum,
 By Alexander A. Uhle and William H. Mackinney.
- Elements of Psychiatric Prognosis, By F. X. Dercum. Epidemic Infantile Paralysis, By M. ALLEN STARR. The Optical Nerve Changes in Multiple Sclerosis. With Remarks on the Causation of Nontoxic Retrobulbar Neuritis in General, By WARD A. HOLDEN.
- 1. The Coordination of Single Musuclar Movements in the Central Nervous System.-Beevor states that we may have, in any single movement, such as the closure of the hand, the following classes of muscles taking part: The prime or principal movers, the flexors of the fingers and thumb; the synergic muscles, the extensors of the wrist; and the fixation muscles, the triceps and biceps. The principal movers frequently consist of two or more muscles, and these muscles, as in the case of the flexors of the elbow and of the extensors of the hip, come into action in a definite order according to the amount of work required to be performed, and, further, it seems that the will has no power to alter this order or to make a muscle act out of its turn (except, perhaps, by trained exercises). Again, in those muscles which have two or more movements by passing over two or more joints, the synergic muscles come into action at the same time as the principal movers, and here again the will has no power to prevent these muscles acting or to leave them out of the list. Lastly we have the fixation muscles, which fix the joint or joints intervening between the joint under examination and the trunk, and which do not come into action until a certain pressure and displacement has been brought to bear on the joint. It seems probable that the mechanism by which the muscles taking part in a single movement are linked together, is situated in the cells of the posterior cornua of the spinal cord, which cells are acted on by impulses from the excitable cerebral cortex. As example he cites the action of supina-

- tion of the foramen. If only a weak action is required, as in simply moving the limb, the impulse coming to the posterior cornual cells is weak, and these cells send a mesage to the anterior cornual cells of the supinator brevis only. If stronger action is required, a stronger impulse is sent to the posterior cornual cells which stimulate the anterior cornual cells of the biceps, and at the same time those of the triceps which act synergically to prevent the elbow from being flexed by the biceps. If a stronger movement still is required, the fixation muscles, viz., the adductors of the shoulder, are brought into action by the posterior cornual cells to prevent the humerus being drawn away from the trunk by the very strong pressure to be overcome.
- 2. Insanities Caused by Acute and Chronic Intoxications with Opium and Cocaine.—Gordon has observed 171 such cases, and he remarks that if an attempt is made to find in acute or chronic morphinism and cocainism any of the well known forms of psychosis, a total failure follows. Some cases may simulate melancholia, mania, manic depressive insanity, and even paranoia, but in none of them can be found the typical pictures of these psychoses. Outside of the special tactile hallucinations of cocainism, we find in the acute form sometimes a delirious or a stuporous state. An element of confusion always accompanies them. Hallucinations of sight and hearing are frequently present. In the chronic form, the part which gives us the most concern, we do not find any of these psychoses in their typical forms, but we do find vague manifetsations, as delusions of a transient, fleeting, and fragmentary character. It is true that at certain periods of their evolution the latter assume the form of systematized ideas and conceptions, reinforced by hallucinatory images, and thus may present a picture of paranoia or other forms of insanity, but the ensemble of the condition does not permit us to consider them as such. A characteristic symptom is the gradually oncoming dementia, which develops very insidiously in the inveterate habitués, and increases with years until a complete psychic decrepitude is established. It is this threatening progressive quantitative diminution of mental power that presents the alarming problem for us when we are called on to counsel and render assistance to the community. When we compare intoxications from other sources with that of our present study we do not find any essential difference. Each agent may add a new special symptom, as, for example, the tactile hallucinations of cocainism, but the fundamental clinical picture in all remains invariably identical. In the acute forms there is a confusion of all sorts of mobile and contradictory conceptions, a dissociation of all elements of normal psychic life. Hebetude, stupor, and amnesia follow. These manifestations may be accompanied by hallucinatory images and sometimes superimposed by incidental delirious states. Not infrequently is observed a dreamy state, which is the continuation of dreams occurring during the night. The images seen by the patient in his dreams are confounded with the impressions of real life and thus increase the contradiction of conceptions. In the chronic form all varieties of intoxications invariably lead to the gradual enfeeblement of mentality, viz., dementia.

4. Clinical Observations on Antigonococcic Serum. - Uhle and Mackinney have treated twenty-three patients with antigonococcic serum. They observed that none of the patients suffering with gonorrheal prostatitis were cured. Of seven patients with epididymitis, improvement was observed in three, no improvement in four. These three patients were confined to bed, with elevation of the scrotum, and it is doubtful whether the improvement can be attributed to the serum alone. If conclusions can be drawn from this limited number of cases, say the authors, it appears that neither the number of injections nor the time elapsing between injections has any influence on the results of the treatment, as in no case was there what might be termed a prompt improvement, which is to be expected from an antitoxine treatment. Possibly better results would have followed the administration of larger doses. The best results were obtained in the patients suffering with arthritis. Three were promptly relieved, and all local evidences of inflammation had subsided in less than two weeks. In one of these Bier's treatment was used in conjunction. A patient with gonorrheal myositis showed but little improvement after two weeks' treatment with serum alone, but responded promptly when Bier's treatment was used in addition. Following the use of the serum injections a general urticarial eruption was observed in seven patients. Other than slight pain at the site of the injection and the urticarial eruption, accompanied by the most intense itching, no local or general toxic manifestations were observed.

Take S rees

7. Optical Nerve Changes in Multiple Sclerosis.-Holden states that disturbances of vision are found in about half of the cases of multiple sclerosis. Usually the dimness of vision is noticed early in the course of the disease, and it may come on long before any other symptoms have attracted attention. More than half of the patients with multiple sclerosis who complain of failing sight have central scotoma in the field of vision, and the ophthalmologic diagnosis of their condition is retrobulbar neuritis. Toxic cases of retrobulbar neuritis, due to poisoning with tobacco, alcohol, lead, and the toxines arising in pregnancy are readily recognized and diagnosticated as toxic. The causation of nontoxic retrobulbar neuritis, however, has often been obscure. We have learned recently that many of these cases are due to sphenoidal and particularly to ethmoidal disease, which involves the optic nerve in the optic foramen. He thinks that we shall soon come to the belief that a nontoxic retrobulbar neuritis, if not due to a sinusitis or directly to syphilis, diabetes, a neoplasm, or trauma, is, as a rule, a manifestation of multiple sclerosis, although no other symptoms of the disease may be present.

MEDICAL RECORD.

July 11, 1908

I. The Conquest of the Venereal Diseases,

2. Significance of Wash Water Examinations for Gastric Cells in the Diagnosis of Atrophic Gastritis: Report of Two Cases,

3. Nerve Anastomosis in Infantile Paralysis,

Nerve Anastomosis in Infantile Paralysis,

By Karl Osterhaus.

4. Insanity; Its Genesis and Transmissibility,

By SAMUEL WESLEY SMITH.
Lactic Acid Bacilli Cultures in Nose, Throat, and Ear Work,
By H. Holbrook Curtis.

6. Some Cases, Other than Obstetrical, in which Hypodermic Injections of Ergot Have Been of Great Service.

By E. P. ROBINSON.

 The Conquest of the Venereal Diseases.— Ellis remarks that there are four methods by which in the more enlightened countries venereal disease is now beginning to be combated: (1) By proclaiming openly that the venereal diseases are diseases like any other disease, although more subtle and terrible than most, which may attack any one, from the unborn baby to its grandmother, and that they are not. more than other diseases, the shameful penalties of sin, from which relief is only to be sought, if at all, by stealth, but human calamities. (2) By adopting methods of securing official information concerning the extent, distribution, and variation of venereal disease, through the already recognized plan of notification and otherwise, and by providing facilities for treatment, especially for free treatment, as may be found necessary. (3) By training the individual sense of moral responsibility so that every member of the community may realize that to inflict a serious disease on another person, even only as a result of reckless negligence, is a more serious offense than if he or she had used the knife or the gun or poison as the method of attack, and that it is necessary to introduce special legal provision in every country to assist the recovery of damages for such injuries, and to inflict penalties by loss of liberty or otherwise. (4) By the spread of hygienic knowledge so that all adolescents, youths and girls alike, may be furnished at the outset of adult life with an equipment of information which will assist them to avoid the grosser risks of contamination, and enable them to recognize and avoid danger at the earliest stages.

Significance of Wash Water Examinations for Gastric Cells in the Diagnosis of Atrophic Gastritis.—Bassler describes his method in the following manner: The washing solution should in character and specific gravity approximate the blood. This is done by the addition of salines. The installation that was used contained 250 c.c. of water. to which were added 21 grains of sodium chloride, one grain each of sodium sulphate, sodium carbonate, and sodium phosphate, and 11/2 grains of potassium chloride. The empty stomach should be aspirated before the ingestion of the compound saline This is drunk, or run down through solution. the tube, the patient is made to exercise vigorously, or the fluid is agitated in the stomach by sharp taps with the hand upon the abdomen over the gastric region; it is aspirated after five minutes and permitted to stand for several hours, the upper part of the fluid is syphoned off, and the sediment, in small lots, centrifuged for examination by the microscope. The stains which have served him best are one half per cent. aqueous eosin, one per cent. methyl eosin and hæmotoxylin. Biondi's polychrome methylene and carbol fuchsin. He recommends for general use the eosin and hæmotoxylin. The acid cells from the stomach stain readily with most of the aniline dyes. They are seen between the leucocyte and squamous epithelium in

size, and their main features are their confluent stippling of the cell protoplasm with eosinophilic granules and their well defined nucleus. In shape they may be described as irregular, although most of them are oval. With the eosin and hæmotoxylin stain, which serves well in distinguishing the acid from the peptic cells (the first taking the eosin, the latter the hæmotoxylin), the nuclear membrane is usually well defined. The nucleus itself is usually lighter and a trifle larger than those in the peptic cells and stains in a blotchy way. These cells when desquamating in any numbers are easy to find, and upon their presence the main dependence must be placed in the diagnosis of atrophic gastritis. The peptic cells offer much greater difficulties in the way of their finding and discrimination than do any of the other organic elements found in the stomach. They stain poorly, the body just barely, the nucleus much better. With care and patience in the search they can often be seen, but never as plainly as the acid ones. Their cell protoplasm is indistinct and with the hæmotoxylin stain is found faintly bluish in color. At best they take eosin, or, in fact, any of the aniline stains, very poorly. Their nucleus stains deeply and generally uniformly throughout. Neither the nuclear membrane nor nuclear granules can be distinctly discerned. This also distinguishes them from the acid cells. The nucleus itself is seldom found oval, as is often the case in the parietal cells. They are much smaller in size than the latter, being in size between them and the leucocyte, for the mononuclear variety of which they may be mistaken. Because their protoplasm digests away so readily (when the cells are free) and because of their poor staining properties and the question of their presence even if seen, the search for them need not be continued when numbers of the more plainly recognized acid cells are discovered. Sometimes they take the carbol fuchsin stain better than they do the hæmotoxylin. The columnar cells from the stomach are not difficult to make out. It must be remembered that in the posterior nares and the upper half of the pharynx the epithelium is of the cylindrical variety, and these may be shed and swallowed. The cilia of these cells would serve to distinguish them from the gastric epithelium. They stain better than the peptic cells, although not so well as the acid. Their shape is characteristic, their protoplasm is not granular, and they have a long, flat looking nucleus which is almost in the centre between the ends of the cell, while in the acid and peptic cells the nucleus is generally nearer to the edge of the protoplasm. They are easily detached by the stomach tube and thus are not so significant in this connection, unless exfoliating in large numbers, as the peptic juice secreting cells would be. They are often found in groups, and hæmotoxylin stains them well. In cases of atrophic gastritis, particularly, there may be seen a ring of cells more or less complete, which consists of groups from the depths of the tubules. Sometimes a mass of rounded or cuboidal shaped cells may be exfoliated from the lower regions of the infundibula, and these would strongly resemble the first ones. The goblet cells are rarely found and are not difficult to distinguish from the true columnar.

BRITISH MEDICAL JOURNAL

June 27, 1908

Remarks on Some Points in the History of Antiseptic Surgery, By Lord LISTER. Surgery,
Cystic Tumor of the Suprarenal Body Successfully
Removed by Operation, with Notes on Cases Previously Published,
By A. H. G. DORAN.

Two Cases of Lateral Sinus Thrombosis,
By E. HARRISON. The Ætiology and Treatment of Eczema,
By L. Kestern

Diving and Caisson Disease. A Summary of Recent Investigations, By N. H. MUMMERY.

Diving and Calabori By N. H. Musian Investigations, A Few Cases of Compressed Air Illness, with Remarks, By C. G. Grant. By J. M. Rhodes. By J. M. Rhodes.

2. Cystic Tumors of the Suprarenal Body.-Doran reports a case of unilocular blood cyst of the left suprarenal body, occurring in a woman aged sixty-two years. It was removed by operation, and the patient recovered. He also gives abstracts of thirteen other cases collected from the literature. The blood cyst of the suprarenal body is not a true new growth; it owes its origin to hæmorrhages into the medullary substance of the suprarenal capsule. Some pathological change within the organ is probably the sole cause in a majority of the cases. If the true character of the tumor be recognized during operation, the surgeon need not search for any extension of the disease in its vicinity. Adenoma, lymphoma, and other new growths seldom convert the suprarenal body into a cystic body. Pain is the most common symptom, usually assuming the character of dyspepsia or fits of colic, and leads to the discovery of a tumor. As regards the tumor itself, there is less fluctuation than in hydronephrosis, nor does the cyst descend so readily. Bronzing of the skin is very rare in benign cystic suprarenal tumors. The right treatment is removal by operation. It should be enucleated from the capsule of connective tissue in which it lies. Diagnosis is difficult; the best incision is a vertical one through the outer margin of the rectus. Incision and drainage alone is an unsatisfactory procedure. Pressure forceps should be applied to all large vessels in sight, no tissues being pinched in the dark.

3. Lateral Sinus Thrombosis.-Harrison reports two cases of lateral sinus thrombosis, one of which ended fatally. When the following group of symptoms are present together, septic thrombosis is certainly present: I. A history of purulent aural discharge for a year or more. 2. Sudden onset of the illness, with headache, vomiting, rigor, and pain in the affected ear. 3. An oscillating temperature. 4. Vomiting, repeated day by day. 5. A second, third, or more rigors. 6. Local tenderness and ædema over the mastoid or in the course of the jugular vein. 7. Stiffness of the muscles of the back or side of the head. 8. Optic neuritis. Jaundice is a frequent symptom, and the liver and spleen are

always enlarged.

4. Eczema.-Kesteren states that eczema is a pure neuropathia, and to regard it solely as a local affection is a grave misconception calculated to lead to serious error in treatment. But certain pathological states are frequently the indirect factors in the causation of eczematous attacks. The very nature of eczema-an exudative dermatitis due to capillary engorgement-indicates clearly vasomotor disturbance due to some morbific influence on the sympathetic centres of the nervous system. Eczema is a common concurrent of many functional and nervous derangements. It is so often associated with gout, that "gouty eczema" has been formulated as a specific type. Uterine disorders and pregnancy, together with mental cases-especially imbecilityare often complicated by eczema. Even where local irritation is the exciting cause of the attack, it still remains a neurosis. External toxic applications, friction, heat, cold, and the turgescence of varicosity are only the irritants of the peripheral filaments of the sensory nerves which set the eczema going. Eczema may thus be divided into two classes for purposes of treatment: (1) That from within, acting through the sympathetic chain of the functional system, may be denoted the ganglionic or idiopathic form, and (2) that arising from external or local irritation, the peripheral or traumatic. If a storm of gout has upset the sympathetic nerves and eczema has resulted, then the usual treatment for gout must be adopted, plus a direct nerve sedative. Acetanilid and potassium iodide act well, but colchicum should be avoided, as it dilates the capillaries. eczema of an asthenic type, from anæmia, the indication is iron with nerve tonics such as strychnine. If alcohol is the irritant, abstinence, with the bromides and atropine will bring alleviation. Dyspepsia, so frequently the exciting cause, calls for careful dieting, attention to the bowels, and such a nerve sedative as the bromides, to arrest the gastric nerve irritation. Eczema that accompanies uterine trouble disappears, as a rule, with its removal. Of the thousand and one local applications that have been recommended, only two or three are of any value. Nothing can compare, for the immediate and permanent relief which it confers, with carbolic acid, if properly utilized. It is a most powerful local anæsthetic, if used in sufficient strength, and the anæsthesia which it produces lasts a long time. Pure liquid carbolic acid applied to a red inflamed eczema gives sharp but short punishment and leaves the part practically dead. This dries rapidly, forming a scab under which the previously raw surface heals rapidly, the scab on falling off, leaving the surface clean and sound. Such heroic treatment must be applied only to limited areas at one sitting. For general use in all eczematous eruptions at every stage, the one to eleven solution should be used. Tincture of iodine also smarts somewhat, but gives great relief to the itching and burning. Suprarenal extract is a good application previous to the carbolic, owing to its power of reducing the turgescence and exudation. Greasy applications should only be applied in the dry and desquamative stage. Used in the moist stages they only aggravate the trouble by retaining the acrid irritating exudation. Soap, whether medicated or otherwise, should be religiously avoided.

5. Diving and Caisson Disease.-Mummery reviews the causes and symptoms of caisson disease as seen among divers. Mild symptoms of discomfort met with on beginning the descent, are usually speedily relieved by swallowing, which equalizes the pressure at the ends of the Eustachian tube. Dyspnœa, fainting, and syncope, if slight, may be due to de-

ficient air supply. If severe they are due to the diver having come up too quickly. Death is almost certainly due to embolism and blocking of cerebral or pulmonary vessels by the bubbles of nitrogen set free in the circulation by too rapid decompression. Paralysis, usually affecting the lower limbs, is not uncommon. Nausea and vomiting occur directly on the diver coming to the surface, and are usually due to a heavy meal just previous to descent.

LANCET. June 27, 1908.

- I. Some Points in the History of Antiseptic Surgery,
- The Defensive Arrangement of the Body as Illustrated the Incidence of Disease in Children and Adults (Wightman Lecture), By W. W. CHEYNE.
- Experiences of the Surgical Treatment of Nonmalig-nant Affections of the Stomach, By F. Eve.
- Melitensis Septicaemia (Malta or Mediterranean Fever) (Milroy Lectures, III), By W. H. Eyre. On the Nature and Causes of Taint in Miscured Hams Mediterranean By W. H. Eyre.
- (Bacillus Fœdans),
 (Bacillus Fœdans),
 A Note on the Early Treatment of Protruding Incisor,
 By J. F. Colver.
- The Treatment of Malocclusion (Orthodontia),
 By H. C. Highton.
- 1 a Case of Migration of the Ascending Colon.

 By J. Bland-Sutton. On a Case of Migration of the Cæcum Producing Ob-
- Notes on Scurvy in South Africa, 1902-04, By D. M. MACRAE
- 10. The Relationship of the So Called Family Diseases to a Premature Physiological Senescence Localized to Certain Organic Systems and Considered with Special Reference to the Nervous System,
- II. The Public Telephone Call Office as a Factor in the Spread of Disease, By F. J. Allan.
- Nonmalignant Affections of the Stomach. -Eve gives his experiences of the surgical treatment of nonmalignant affections of the stomach. and sums up his conclusions regarding the choice of operations as follows: I. The operation of choice for ulcer is posterior gastrojejunostomy, without a loop. 2. Any form of enteroanastomosis should be avoided in ulcer, as it tends to diminish the flow of duodenal contents into the stomach, and it appears to increase the risk of peptic ulcer. 3. Finney's operation is attended by a higher mortality than gastrojejunostomy, is more difficult, and is contraindicated in ulcer, because the duodenal contents would not pass into the stomach. In stenosis, gastrojejunostomy gives better drainage, and the results are admirable. 4. Pyloroplasty is inefficient in stenosis. because the contraction frequently recurs. 5. Excision of a chronic ulcer is rarely feasible, and is attended by a high mortality. It should not be performed, because experience teaches that ulcers heal after gastrojejunostomy, although not placed in the pyloric or prepyloric regions. In five cases of ulcer situated in other parts of the stomach, the results of gastroenterostomy were absolutely good in four.
- 4. Malta Fever.—Eyre, in the third of his Milroy lectures on Malta fever or Septicæmia melitensis, takes up the channels of infection by which the micrococcus reaches its human host. The organism is not present in the expired air, nor has it ever been found in drinking or sea water, or in dust or earth. But laboratory experiments show that it retains its vitality and virulence for considerable periods when mixed with dry dust and soil, and

further that such contaminated soil can infect monkeys. Transmission of the disease by direct contagion has been constantly denied by all observers, but it is probable that it can occur during sexual congress. The author is decidedly inclined to the opinion that Malta fever is primarily a disease of the goat, which had its origin in the Persian hills, and which accompanied that goat on its world wide wanderings, and which has remained active for man as long as its host preserved its original habits in barren rocky countries and in the tropics, where pasturage is of the scantiest. When, however, the goat reaches temperate climes and abundant pasturage, and can no longer rival the cow as a milk giver, and selective inbreeding is in consequence neglected, the micrococcus no longer finds a suitable habitat in the caprine mammary glands, and rapidly disappears. The transmission of the disease from goat to goat may take place along any one or more of several channels: Cutaneous or subcutaneous inoculation is probably responsible for a large number of infections, the contagion being carried from goat to goat by means of the hands of the goatherd, soiled with infective milk. Connection by flies, which swarm in the goat pens, may also play a part.
5. Bacillus of Miscured Hams.—Klein has

found what he takes to be a specific microorganism in miscured hams, which he calls the Bacillus fadans. The hams in question were "dry cured," not having been pickled or injected. Miscured hams have a distinctly putrid smell, the muscles vary in color from a dirty gray to green, and may be swollen and jellvlike. The microscope shows disintegration of the muscle fibres, and numerous tyrosin crystals. The essential cause of the taint was one and the same species of cylindrical microbe. The decomposition is most pronounced at and around the knee. The bacillus is nonmotile, and spreads by forming linear chains and filaments. It is an obligatory anaerobe, requiring for its growth to be in the depth of tissues deprived of oxygen.

10. Premature Physiological Old Age.—Raymond states that the so called "family" diseases form a class of very peculiar maladies. No trauma, no infection, no intoxication, no diathesis gives rise to them. To become the victims of these diseases the subjects have only to be born of the same parents and reach the appointed age. They are not the expression of a struggle, but are the consequence of the original constitution of certain nerve tracts or cells. They can hardly be termed diseases, for they are really organic types abnormal from their very origin. The symptoms of the family nervous diseases depend entirely on the physiological functions of the tracts or cells that are doomed and are disappearing gradually. Any part of the neuromuscular system may be involved. The fammata in the race, and they should be grouped under the one heading-"Premature physiological senescence of certain organic systems. This physiological senescence is quite independent of any external factor; its date of onset varies with different subjects. It may be premature, and manifest itself at a period of life which is not that of normal senescence of the individual. The process is probably

not limited to the nervous system, but is probably very far reaching, and deserves to be put on a par with intoxication and infection, the two factors which at present govern medical pathology.

LA PRESSE MEDICALE.

June 6, 1908.

1. Interpretation of Urinary Analyses. Azote Changes,

By HENRI LABBE.
Ethyl Chloride as a General Anæsthetic in Daily Surgical Practice,
The Premenstrual Rheumatoid Fever of Young
Women.

By Fernand Lematrre.
Fever of Young
By R. Romme.

1. Interpretation of Urinary Analyses.—Labbe asserts that the determination of urea by the inexact methods called clinical are of no value or interest, while the accurate determination of the urea has no clinical interest simply and clearly defined. Urinary analyses, unless rationally conducted and logically interpreted, are not of practical value. The totality of the urinary principles are dependent on the nutrition and the mode of alimentation, and the variations of quantity and quality produced by alimentation are to be observed as more pronounced under pathological influences. These are to be studied best by means of the azote changes.

2. Ethyl Chloride as a General Anæsthetic.-Lemaitre considers ethyl chloride a useful general anæsthetic in every case in which an anæsthesia of not over two minutes' duration is required, and as a preliminary to other anæsthetics in cases where a more prolonged anæsthesia is required.

June 10, 1908.

Multiple and Recurrent Sloughs from Two Arms and a Foot during Two and a Half Years. Amputation of the Left Arm. Discussion in Regard to the Nature of the Sloughs. Pathonimy,

By Professor Dieulafox.

Multiple and Recurrent Sloughs from Arms and a Foot.—Dieulafoy reports a very curious case, described very well in the title of the paper, and proposes, or better coins, the new word pathomimy to denominate the condition he believes to have been present in his patient. The word is derived from the Greek πάθος, disease; and μιμέσμαι, simulate

LA SEMAINE MEDICALE.

June 10, 1908.

Intrapelvic Sacculations of the Uterus at Term. By Professor R. DE Bovis.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 1, 1908.

1. Concerning the Antitryphitic Power of Human Blood Serum, Particularly of Persons Suffering from Cancer,

By L. Brieger and Johannes Trebing.

Experience with Pubotomy at the Universitäts Frauenklinik of the Charité, By P. Krömer.
Bacteriology and Prognosis, By LIEPMANN.
Concerning Complement Joining Material in the Urine

of Syphilities

OT Syphilities,
By Franz Blumenthal and Udo J. Wile.
Concerning Pepsin and the Determination of Pepsin
by the Edestin Test,
By Walter Wolff and Zdzislaw von Tomaszewski.
Concerning the Bisystole of the Left Ventricle of the

Heart and Concerning the Arterial Symptoms in Insufficiency of the Aortic Valves,

Insufficiency of the Aortic varves,
By W. Obrastzow.
Contribution to the Question of the Natural Nutritive
Material in Human Milk. By EHRICH MÜLLER. Excretion of Pepsin in the Urine, By G. G. WILENKO.

2. Pubotomy.—Krömer alleges that pubotomy and Cæsarean section are not concurrent operations, but that each is to be confined to cases in a certain well defined field. He considers pubotomy an operation from which recovery should be assured. The dangers to the patient are not from the sawing through of the bones, but from the too rapid passage of the child's head through the pelvis. In the majority of cases he finds that the bony cicatrix does not become firm, but remains movable, so that later pregnancies may follow a normal course and delivery

3. Bacteriology and Prognosis.—Liepmann's idea is that by making a bacteriological examination of a wound at the end of an operation it can be determined whether it is clean or infected, and that

this may influence the prognosis.

Pepsin and the Determination of Pepsin.-Wolff and von Tomaszewski say that juices with normal acidity have a tolerably constant fluctuating value of about 100 pepsin units. In hyperacid juices the fluctuations about the same average are greater. In subacid juices the average pepsin value is lower with relatively less fluctuations, while in juices which are not acid the pepsin value is very low, so long as the absence of acidity is not of nervous origin. Within each of these groups there is no parallelism between acidity and pepsin value. Ulcers seem to be associated with approximately normal pepsin value. In gastric catarrh the relative amount of pepsin and acidity are fairly parallel; carcinoma is ordinarily associated with a low pepsin value, though it may be quite normal. Neuroses appear to increase the pepsin value, which in these conditions reaches its highest mark.

6. Bisystole of the Left Ventricle and Arterial Symptoms in Insufficiency of the Aortic Valves. -Obrastzow says that in insufficiency of the aortic valves the left ventricle contracts in two periods, forming bisystole. Clinically this form of heart contraction is registered by certain peculiarities of the apex beat, the systolic reduplication of the first sound of the heart heard in the præcordial region, the cardiogram of the heart beat which shows two impulses, and the starting of two pulse waves in the great vessels which are demonstrable both by palpation and by the sphygmograph. The quick pulse in the peripheral arteries owes its origin to the disappearance of the first impulse of the divided pulse wave, which probably is lost in the second impulse or the second wave. This second blood wave is sent from the left ventricle with the greatest power of contraction, and therefore obtains a greater rapidity in the arterial system than the weaker first wave, so that it overtakes the latter, unites with it, and finally forms the quick pulse. It is probable that the systolic bruit from the aorta in insufficiency of the aortic valves frequently depends on the bisystolic contraction of the left ventricle by which the blood is caused to enter the great arteries in unstable equilibrium, and form a series of eddies with the blood already present, and that these cause the murmur. The same explanation would seem to suffice for the cause of the origin of the systolic murmurs in the aorta and pulmonary artery in severe anæmia.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT June 2, 1908.

Further Studies Concerning Extrauterine Blood Formation,

Concerning the Histological Changes in the Blood Forming Organs in Pernicious Anæmia,

By Schatiloff.
Spirochætæ in the Cancerous Tumors of Mice,

By DEETJEN. Congenital Syphilis of the Suprarenal Capsules. Also a Contribution to the Question of the Origin of Isolated Tuberculosis of the Suprarenal Capsules,

Concerning the Demonstration of the Long Bacilli in the Fæces and their Clinical Importance,

Diagnosis of Tuberculosis of the Lungs, By RANKE.
Moderate or Radical Conservatism in the Treatment of

the Narrow Pelvis, By VON HERFF. Cæsarean Section and Lumbar Anæsthesia.

By POLANO.
By LANGER. Medicamental Prophylaxis of Measles, 10. Bolus Treatment in Diphtheria, By STUMPF. II. A Case of Laceration of the Thoracic Duct in Conse-

quence of Contusion of the Chest, By OEKEN. 12. Vaginal Cæsarean Section in Eclampsia, By KREISCH.

13. A Case of Idiosyncrasy against Egg Albumen

By HORWITZ. 14. Inflammation from Ether Vapor in the Expired Breath of a Person who had been Anæsthetized with By TEXTOR.

Ether,

15. Two Cases of Tetanus after Gynæcological Operations,

By Zacharias.

Histological Changes in the Blood Forming Organs in Pernicious Anæmia.—Schatiloff reports four cases of pernicious anæmia with the final histological findings in each. The findings were briefly as follows: First case: The blood of the heart showed the typical changes of pernicious anæmia, numerous myelocytes, megaloblasts, and normoblasts. The hæmoglobine contents of the single cells was very high. In the spleen there was myeloid metaplasia and erythropoesis. The liver, lymphatic glands, and intestine were not specially changed. There was no lymphatic hyperplasia. The bone marrow was rich in megaloblasts. In the femur there were very numerous myeloblasts. Second case: Myeloid metaplasia in the spleen, absent in the liver, or at most intracapillary. No lymphatic hyperplasia, but diminution in the size of the follicles in the spleen. Third case: Erythropoesis and myeloid formations in the spleen (eosinophile and neutrophile myelocytes, bone medulla giant cells), to a less degree in the lymphatic glands, absent in the liver. No lymphatic hyperplasia. Megalocytes and megaloblasts in the blood of the heart and in the bone medulla, myeloblasts in less quantity. Fourth case: No erythropoesis in the spleen or liver, myeloid formations in the spleen but not in the liver, no lymphatic hyperplasia anywhere, but a diminution in size of the follicles of the spleen. Numerous megaloblasts in the bone medulla.

4. Congenital Syphilis of the Suprarenal Capsules.—Esser reports two cases in which infants died of syphilitic disease of the suprarenal capsules. and as among the reported cases of tuberculosis of the suprarenal capsules a considerable percentage presented no tuberculous lesions elsewhere, he suggests that congenital syphilis may be the cause of these isolated cases of tuberculosis of the suprarenal capsules.

5. Long Bacilli in the Fæces.—Sandberg as-

serts that he has published the method in which the presence of the long bacilli can be detected in the stools and distinguished from any other form of bacilli. The demonstration of the long bacilli in the stools may be of diagnostic value in the cases in which a washing out of the stomach is contraindicated, or for any other reason cannot be performed, and the presence of lactic acid suggests the existence of a malignant disease of the stomach.

7. Moderate or Radical Conservatism in the Treatment of the Narrow Pelvis.—Von Herff, after calling attention to the danger that the student will be so impressed by the brilliant results of radical interference in cases of narrow pelves as to neglect the study of other methods of management in these cases, asserts that a moderate conservatism in the treatment of the narrow pelvis with the aid of prophylactic interference is not only fully equal in its final results to, but is better than the radical conservatism based on the Cæsarean section and opening of the pelvis. Under all conditions such treatment is more humane and safer for the mother.

8. Cæsarean Section and Lumbar Anæsthesia.
—Polano reports three cases of Cæsarean section on patients under the influence of lumbar anæsthesia. All were successful from the viewpoints of both the operation and the anæsthesia.

g. Medicamental Prophylaxis of Measles.— Langer proposes the inhalation of a i in 30 solution of Merck's perhydrol for the purpose of preventing the spread of the disease, measles, to other children.

THE PRACTITIONER. June, 1908.

- Progressive Muscular Atrophy, By G. RANKIN.
 A Clinical Lecture on Suprapubic Prostatectomy.
- By B. G. A. MOYNIHAN.
 3. Cholecystitis, By K. W. Monsarrat.
 4. The Diagnosis and Treatment of Empyema of the
- Maxillary Antrum, By J. G. CONNAL.

 4. A Case of Puerperal Eclampsia Treated by Renal Decapsulation, with some Remarks on the Treatment of Eclampsia, By R. J. Johnstone.
- 6. Retrodeviations of the Uterus and their Treatment,
 By W. B. BELL
 7. Case of General Pneumococcal Peritonitis Associates
- Case of General Pneumococcal Peritonitis Associated with Acute Pneumonia, By T. KAY.
 X Rays in the Treatment of Cutaneous Tuberculosis,
- 9. Case of Henoch's Purpura Associated with Angeioneurotic Œdema, By A. Don.
 10. Review of Clinical Pathology, By W. b'E. EMERY.
- 1. Progressive Muscular Atrophy.-Rankin states that this disease may affect the lateral coltimins as well as the anterior horns of the spinal cord, an atrophic change in the motor neurones being primarily responsible. The cause of the disease is unknown. It usually occurs in men older than thirty. Overwork, worry, exposure, trauma, and syphilis have been identified as influential in producing it. Myalgic pain is an occasional symptom. The wasting usually begins in the small muscles of one hand, and extends until most of the muscles of the arm and many of the trunk are atrophied. The muscles of respiration are ultimately involved. The reflexes may be impaired, but are not abolished until late in the disease. The disease continues for years, death usually resulting from some organic disorder, but it may come from extension to the bulbar mire in the medulla. The diagnosis is not usually

difficult, but it may be confounded with peripheral neuritis, syringomyelia, or lead poisoning, or muscular dystrophy. The best treatment consists in the hypodermatic use of strychnine. Arsenic and silver nitrate are also useful, also the ordinary tonic drugs. If syphilis is present, the proper antisyphilitic treatment is indicated. Massage, electricity, and radiant light baths are beneficial, and a dry, sunny climate should be chosen, if possible.

2. Suprapubic Prostatectomy.-Moynihan observes that mere enlargement of the prostate may not cause urinary difficulty; indeed, the gland may be smaller than normal, and cause all the usual bad symptoms. Prostatic disease seldom comes before the age of fifty, there is incapacity to empty the bladder, with stagnation of urine, and, sometimes. the formation of stones. Carcinoma develops in fifteen per cent. of the cases of prostatic hypertrophy. The surgical treatment is now so successful that an operation should be urged in the early stages of the disease. Of the two routes for operation, the suprapubic and the perinæal, the author prefers the former. The latter is preferred by many surgeons, and has given very brilliant results, but the former is simpler, and has given such excellent results to the author that he prefers it. He prefers to do the operation under spinal anæsthesia, injecting a small quantity of a ten per cent. solution of stovaine into the spinal canal. The mass of the prostate should be removed in one piece, including the prostatic urethra. The author has had eight deaths in a total

urethra. The author has had eight deaths in a total of one hundred operations.

3. Cholecystitis. — Monsarrat discusses the subject under the heads: (1) The different clinical types presented by the several stages and decrees

types presented by the several stages and degrees of cholecystitis, (2) their diagnosis, (3) the indications for operation. He remarks that the biliary concretion is not the prime factor in the cholecystitis. but it has a most important influence on the inflammatory attack, on its acuteness, and on the amount of damage done. Experimental work has shown that the sequence of events in cholecystitis is (1) an infection causing a catarrhal inflammation, (2) the formation of stones, (3) a persistent chronic cholecystitis which may be interrupted by acute attacks. Cholecystitis clinically is characterized by intermittent attacks, acute or subacute, with health usually imperfect between the attacks, but gross changes in the gallbladder are not incompatible with comparatively good health. In many of the cases ill health is continuous. Three types of acute inflammation are distinguishable, catarrhal, suppurative, and gangrenous. The indications for operation are such as point to urgent necessity in other types of acute intraabdominal inflammation. One attack of the disease is almost certain to be followed by others. The gallbladder should be removed when it is operated on for cholecystitis, if it is diseased to such an extent that it will not resume its function.

4. The Diagnosis and Treatment of Empyema of the Maxillary Antrum.—Connal divides this disease into the open and the closed variety. In the former pus discharges into the nostril, in the latter it is arrested by the swollen lining mucous membrane. In the former there is seldom pain, in the latter it is severe. One or both antra may be

diseased, and pus may discharge into one or both nostrils. The disease results in nasal polypi and hypertrophied mucous membrane, and secondarily in asthma, loss of smell, and discomfort from the offensive character of the discharge. In making the diagnosis, four tests are suggested, the postural, in which the head is bent forward and to the unsuspected side; transillumination of the antrum, with an electric lamp in the mouth; catheterization of the antrum, and exploratory puncture of the antrum. The treatment consists in draining the cavity and removing the cause. In the acute form of the disease, operation is seldom indicated; in the chronic form one may choose between the alveolar operation, through the alveoli of the teeth nearest the antrum, through the canine fossa, through an incision in the cheek, or through an opening in the nasal chambers.

6. Retrodeviations of the Uterus and their Treatment.-Bell thinks it is far too common to consider the actual deformity or displacement of the uterus, without considering the causal factors and the symptoms associated with it. The following types are mentioned: Congenital or developmental retroversion, especially in young girls, and usually without symptoms. Congenital or developmental retroflexion, with few symptoms until pregnancy occurs, and is followed by abortion. If persistent, after abortion, operative treatment will be necessary. Puerperal retroversion and retroflexion. This may be relieved by reduction, curettage, and 'the use of a proper pessary. If this treatment fails after six months' trial, an operation will be necessary. Pelvic inflammation associated with retroflexion and retroversion. Operation should be performed, but during the acute stage. Retroversion as an early stage of prolapse. This will require an abdominal operation, and usually one upon the perinæum. Retroversion caused by pelvic tumors or urinary retention, remedied by operation, with removal of the tumor. Traumatic retroversion. In this rare condition, replacement, with use of a pessary, if necessary, will usually suffice, otherwise an operation will be required.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF

NEW YORK.

Meeting of April 27, 1908.

The President, Dr. J. RIDDLE GOFFE, in the Chair.

The Hygiene and Management of Pregnancy, Including the Examination of the Urine.—Dr. Austin Flint, Jr., read a paper with this title (see vol. lxxxvii, page 1131).

The Management of the Stages of Labor to Prevent Dystocia.—Dr. RICHARD C. NORRIS. Philadelphia, read this paper by invitation. He said that the prevention of inertia, hæmorrhage, and lacerations was in some respects antithetical. For the first, the labor must be hastened; to avoid the second, it must be neither too rapid nor too slow; and for the third, the termination of labor must be retarded. Individuals differed so in strength, endurance, and quality of tissue that the actual duration of the first and second stages of labor had and should have wide variations. An unduly prolonged

labor, from abdominal or uterine inertia, might often be expected in patients who lacked muscular tone, who were anæmic, and in whom there had been overdistention from twins, hydramnios, or tumors. Diastasis of the recti muscles, with a pendulous uterus, seriously interfered with proper direction of the forces of labor, and predisposed to exhaustion and inertia. A history of hæmorrhage after previous labors and the presence of a fibroid or of adhesions following any abdominal operation, especially hysterorrhaphy, frequently warned one of inertia and hæmorrhage. Of the various drugs to improve the blood's quality, and thus favor its coagulability and fibrin formation, he had more faith in the organic preparations of iron than in the calcium salts or in gelatin. The prophylaxis of hæmorrhage might, of course, begin during pregnancy, but it was of trifling value compared with the proper and skilful management of the three stages of labor. It had been his experience that, when the amniotic sac was unruptured, and there was delay beyond twelve hours in the first stage of labor, associated with nagging, inefficient pains, the condition was best treated with narcotics that allayed irritability and produced sleep. Ten or fifteen grains of chloral, repeated or reinforced if necessary by a sixth of a grain of morphine hypodermatically. would usually produce a sleep from which the patient would awake refreshed and with more efficient uterine contractions. He had but little faith in the efficacy of quinine for uterine inertia. He never used ergot during the first or second stages of labor. In multiparæ with two thirds dilatation, the membranes might be ruptured and so a slow and tedious first stage he shortened. In primiparæ, early rupture either increased the delay or predisposed to laceration of the cervix. An ædematous cervix nipped between the head and symphysis should not be forcibly stripped back over the head. A sterilized glycerin tampon held in contact with the lip of the cervix would often cause this obstruction to disappear. Following the sleep produced by the narcotic, further delay in dilatation of the cervix and lower uterine segment was best treated by artificial dilatation. Some one of the various anomalies of the cervix, spasm, rigidity, hypertrophy, or cicatricial contraction, might be the underlying factor in a prolonged first stage. If we recognized one of these, the case must not be left to nature. If bag dila tation or manual efforts after effacement of the cervix failed or were manifestly inappropriate, Dührrsen's incisions were indicated. Care should be taken to make these incisions free enough to avoid uncontrollable lacerations when the presenting part passed through the cervix. When the hypertrophy or contraction was extreme it was safer to separate the bladder to its peritoneal fold and freely incise the anterior uterine wall as in vaginal hysterotomy. After weary hours of waiting for effacement and dilatation of the cervix, and with the patient clamoring for relief, the temptation for the average practitioner was great to apply the forceps; but it was his experience that, next to a disregard of aseptic technique, the early application of the forceps, before complete dilatation, was the general practitioner's greatest obstetric sin of commission. Meddlesome midwifery was an apt term for the days before the time of asepsis; helpful midwifery

should now be substituted, but only by those who could invade the birth canal with a technique equal to that of the abdominal surgeon. To stimulate uterine contractions and hasten dilatation, he ordinarily used Voorhees's bag. When a forceps operation was likely to follow, he chose the Pomeroy bag for primiparæ. Its dilatation of the lower part of the birth canal surpassed that of other means for that purpose; its only drawback was the necessity for an anæsthetic to relieve the pain caused by its introduction in the primiparous woman. As a rule, with but few exceptions, it might be stated that in primiparæ four, in multiparæ two, hours should be the maximum limit of the second stage of labor. Any abnormity in mechanism having been corrected and the bladder being empty, when a change in posture from the side to the back, the obstetric pulley, abdominal friction, a hypodermic injection of strychnine, and obstetric analgesia secured by the intermittent administration of ether to relieve pain that might be inhibiting uterine energy-when all these had failed to materially advance the head during an hour of recurring pains, it was his practice to apply the forceps and proceed to a slow and deliberate delivery. For many years it had been his practice to avoid deep anæsthesia at the approach of the third stage of labor, preferring always to conduct the placental stage with the patient fully returned to consciousness.

The prevention of hæmorrhage was, broadly speaking, the proper management of the third, or placental, stage of labor. When uterine inertia had characterized the labor, or when there was a history of bleeding, a hypodermic injection of an aseptic preparation of ergot should be administered just prior to the expulsion of the infant. Immediately thereafter the sentinel hand should be placed on the fundus, but no attempt made to expel the placenta for fifteen or thirty minutes, so long as there was no tendency to relaxation and hæmorrhage. Nature's mechanism for controlling hæmorrhage would be interfered with if massage or the Credé expulsion was too early applied. Manipulation would predispose to bleeding by dislodging clots. The diagnosis of placental separation was not difficult. The retracted uterus steadily rose during the process, and where the placenta had been completely separated, and occupied the lower uterine segment, the fundus was six inches above the symphysis; the uterus was firm and had assumed its natural pear shape, and the length of the extruded part of the cord, from the vulvar opening, had increased from two to four inches. The opposite had obtained when there was concealed bleeding from relaxation of the uterus and partial separation of the placenta. The uterus, soft and globular, steadily rose to a higher and higher level, and the external portion of the cord was diminished in length as it was drawn inward and upward by the receding fundus, to which the partially adherent placenta was attached. When we had thus diagnosticated complete separation, or when partial separation was accompanied by sharp hæmorrhage, then was the time for rapid Credé expression, followed by light massage of the fundus to maintain contraction and retraction. The hooked finger might be required to dislodge the separated have merme segment.

steady traction was made, without twisting, to extract the membranes and the stringy filaments that had broken loose, for they were difficult to handle with the gloved fingers and were best caught in a hæmostatic forceps and slowly extracted. If hæmorrhage occurred and persisted after the too early or unsuccessful resort to the Credé expression, aseptic ergot was injected into the thigh, and the uterus was at once invaded by the gloved hand to remove clots and placental masses and to separate completely a partially adherent placenta. While a hot sterile douche and appliances for the intrauterine pack were being prepared, the vaginal hand should grasp the cervix, occlude it, and push it upward to make forcible traction on the bloodvessels; and the external hand should force the fundus downward and forward over the symphysis, to form an angle in the canal and further stretch and occlude the vessels supplying the uterus with blood. At the same time the ulnar surface of the external hand might compress the aorta and vena cava through the abdominal wall. If the hot intrauterine douche failed to stop the bleeding at once and cause uterine contraction, the uterus should immediately be firmly tamponed with a large quantity of sterilized gauze, the tampon reaching from fundus to vulva. The prevention of bleeding from lacerations of the cervix or vagina required little comment. Preliminary dilatation was the all important prophylaxis.

Inversion of the uterus was practically always preventable. Indentation of the uterine wall by too vigorous manipulation or violent traction on the cord when the uterus was relaxed, and especially the two together figured importantly in causing this accident. When paralysis of some portion of the wall existed, these manipulations were especially dangerous. When partial inversion had been recognized, completion of the inversion could be prevented by desisting from all manipulation of the fundus and the prompt application of an intrauterine pack.

The cardinal principle underlying every means at one's command to prevent lacerations of the birth canal might be expressed in one word, dilatation. Precipitate labor was an extreme type of cases of delivery without preliminary dilatation. It was impossible to prevent those sudden, almost immediate deliveries which occurred only when the passage offered no resistance. For the so called rapid labors characterized by excessive and rapid action of the uterine and abdominal muscles, surgical anæsthesia and manual resistance to the progress of the head until safe dilatation had occurred were the usual means of preventing extensive lacerations.

The prevention of uterine rupture that occurred during pregnancy, from anomalies in the shape or musculature of that organ, so far as his knowledge went, was impossible. It was quite different with rupture during labor; for here a correct diagnosis of the obstacles that prevented the entrance of one or the other pole of the fœtal ovoid into the pelvis and early skilled operative delivery could prevent this dangerous accident. The neglected causes of obstruction caused spontaneous ruptures; the unskilled operator, especially when he attempted a foolhardy version, was the cause of the violent ruptures. Version, attempted when the "contraction ring" was ocularly and palpably at or just below

the umbilicus, was attended with such great danger of rupture that no one should attempt it without great caution and a surgical environment that permitted a safe abdominal section, if a cautious examination under ether showed plainly that even the introduction of the hand was an unwarranted violence.

Lacerations of the cervix were best prevented by securing, naturally or by artificial aid, complete dilatation. In primiparæ early breaking of the bag of waters was a vicious practice, and, when there had been an early spontaneous rupture, the rubber bag gradually distended with water at quarter to half hour intervals accomplished safe dilatation. The partially dilated cervix should never be forcibly pushed back over the head. Before a forceps delivery or extraction of the after coming head, the cervix must be completely and slowly dilated with the bag, manually, or with the most cautious use of metallic dilators, if one hoped to avoid extensive lacerations that often involved the bases of the broad ligaments and the upper third of the vagina. The application of the forceps before complete dilatation, and its dynamic use to complete dilatation, were permissible only to the operator of wide experience, who knew the time required and the dangers incident to this method. Preliminary dilatation of the pelvic floor and vaginal outlet was also the best method to prevent extensive vaginal lacerations. Manual efforts could not be compared to the efficiency of Pomeroy's bag. The tendency of its vaginal portion to be spontaneously extruded from the vagina and to drag the cervix downward could be prevented only by holding it within the vagina during the distention of its vaginal compartment.

As the head was traversing the vaginal canal the mechanism of this stage of labor must be supervised. Rapid extension of the head should be prevented. The handles of the forceps in operative cases must not be elevated too far or too quickly. The long diameter that offered in face presentations demanded cautious flexion even after the chin had passed well beyond the subpubic arch. Forceps rotation in occipitoposterior positions was popular in New York, but even with a solid bladed instrument it added a distinct danger of vaginal injuries. He had never convinced himself that episiotomy could prevent pelvic floor injuries, and consequently never employed it except to enlarge the vulvar outlet when a

sphincter laceration seemed imminent.

The Prevention of Maternal Infection.-Dr. EDWIN B. CRAGIN said that the subject naturally divided itself into three periods of time-pregnancy, labor, and the puerperium. The avenues of infection concerned the genital tract on the one hand and the breasts on the other. Three possibilities of in-fection deserved careful consideration, the use of vaginal douches with unclean nozzles by the patient, marital relations during the last weeks of pregnancy with the husband unclean but not infected, and marital relations during the last weeks of pregnancy with the husband infected with gonorrhœa. The use of the ante partum douche by the obstetrician had been abandoned under ordinary circumstances, on the ground that even with a sterile nozzle there was danger of lowering the protective power of the vaginal canal and perhaps danger of introducing infection from a nonsterile vulva without to the ster-

ile vagina within. Patients should be instructed not to take vaginal douches during pregnancy, save on the special order of the obstetrician and with par-ticular precautions. If during the last month of pregnancy there was danger in vaginal examinations by the obstetrician with cleansed and disinfected hands, there certainly was danger from marital relations with a husband whose habits of cleanliness of the genital organs were far from scrupulous. In many a case of infection following labor could the history be obtained that marital relations were practised even within the last forty-eight hours preceding labor. This held good even with noninfected husbands. It held with infinitely greater force with husbands infected with gonorrhea. If the patient was found to be infected with gonorrhæa during pregnancy, every effort should be made to cure the gonorrhœa, both for her sake and the baby's, before the onset of labor, but with this exception, while the vulva should be kept as clean as possible during the last month of pregnancy by external cleansing, the vagina should be kept a closed canal, and if it was entered by the sterile fingers of the obstetrician, this should be as infrequent as possible consistently with accurate knowledge of the pelvic and fœtal conditions. The low mortality of carefully conducted obstetric cases in the tenements showed that, with the vulva and surrounding parts clean and the physician's fingers and instruments clean, results might be obtained which compared favorably with the statistics of the best maternity hospitals. methods of chief importance, then, were (a) the preparation of the vulva, (b) the preparation of the doctor. The three essentials to a clean vulvar field were an empty rectum, a closely clipped or shaven vulva, and a vulva well cleansed with clean soap and water, the direction of the cleansing being from before backward. The use of sterile rubber gloves was now so universal, and their advantages were so well recognized, that the doctor might regard himself as culpable if he did not avail himself of this additional safeguard against infection. Vaginal examinations should be made as infrequently as was consistent with ascertaining the conditions and progress of the case, and external manipulation through the abdomen should be practised until the knowledge thus gained would make frequent vaginal examinations unnecessary. Since the fact that the vagina was usually more sterile than the vulva was recognized, great care should be taken that, when making a vaginal examination, the labia were separated with the fingers of one hand, so that the fingers of the other hand passed directly into the vagina without carrying infection by contact with the nonsterile vulva to the sterile vagina.

If meddlesome midwifery was bad, negligent midwifery was equally bad, and experience taught that, if material infection was to be avoided, delivery should also be aided before the strength and tissue resistance of the patient were exhausted. The presence of organic material such as portions of placenta, membranes, and blood clots within the uterus so favored the development of sapræmia and perhaps septicæmia that he desired to emphasize the importance of determining at the time of labor that the placenta and membranes had been completely expelled and that the uterus remained so

contracted that blood clots could not accumulate within it. The first object was gained by waiting a sufficient time for the uterus to regain tone before expressing the placenta. This period of waiting at the Sloane Maternity was fixed at twenty minutes from the birth of the child, and during this time the fundus was gently held in the palm of the hand, with just manipulation enough to prevent its ballooning. As soon as the placenta and membranes were expelled, they should be examined carefully to ascertain if they were complete, and if this examination showed the absence of any large portion of either, he believed that infection was avoided by carefully inserting the sterile gloved hand into the uterus and removing the retained portions.

Regarding the use of the post partum douche, he believed that greater safety lay in its omission, save for two special indications, checking hæmorrhage and washing away débris that had been loosened by the fingers. In these cases the greatest care should be observed in having the syringe, nozzle, and solution absolutely sterile. To maintain the contraction of the uterus, there were two measures at command, the administration of ergot and the gentle holding of the fundus until an hour had elapsed from the

birth of the child.

He believed that the use of ergot had a special value as a supplement to, but not as a substitute for, the holding of the fundus. With regard to the repair of the lacerated cervix at the time of delivery, he had seen within the last few years several cases of infection that seemed to be directly traceable to this operation, with its increased manipulation in the vagina and with its interference with uterine drainage resulting from a too great closure of the cervical canal. It was a good rule to suture a lacerated cervix immediately after labor only where there was excessive hæmorrhage. The need of carefully sterilizing the catheter was well recognized, but the ease with which a sterile catheter could wipe off infective material from the vulva and carry it into the bladder seemed to be often overlooked in practice, even if it was known in theory. The only safe way to introduce a catheter in the female was, with the labia separated and the meatus well exposed and cleansed, to pass the catheter directly into the meatus without touching the surrounding parts.

One of the occasional causes of infection in the second week was stenosis of the canal of the uterus with retention of lochia resulting from a flexion of the uterus. While this was more common with an anteflexion than with a retroflexion, still it might occur with the latter, and this tendency to a posterior displacement of the uterus should be warned against by having the patient, after the fifth day, keep off the back for a considerable period each day, lying for a time on one side, then prone, and then on the other side. It was also of value, unless otherwise contraindicated, to favor drainage by having the patient, after the fifth day, use the com-

mode at least once a day.

The prevention of breast infection during lactation depended upon the care of the nipples during pregnancy and the care of the breast and nipples during the puerperium. This implied cleanliness and keeping the nipples free from the crusts which were apt to form as the breasts began to secrete.

The nipples should be bathed night and morning with a saturated solution of borax in fifty per cent. alcohol. If the nipples were retracted, easy nursing and ready emptying of the ducts were favored by having the patient, during the last weeks of pregnancy, gently draw out the nipples with clean fingers at the time she bathed them with the borax solution. The care of the breasts and nipples during the puerperium implied cleanliness, support, and free drainage. In carrying out these indications three propositions should be considered: I. Lack of cleanliness favored infection even with sound nipples, and more so with nipples which were cracked or abraded. 2. Overdistended milk ducts easily became inflamed and infected, especially if the nipples were not sound and clean. 3. Sagging of the breasts during lactation favored overdistention and there-fore infection. The prophylactic treatment consisted in support of the breasts by a properly fitting binder, massage of the breasts if the ducts showed a tendency to become overdistended, cleanliness of the nipples and the baby's mouth, the prevention of cracks and abrasions as far as was possible, and the healing of them so soon as practicable if they occurred. In order to prevent abrasions of the nipple, the baby should not be allowed to remain at the breast longer than five minutes every four hours, and only in the daytime, until the milk was secreted. Between the nursings, the nipple should be covered with a piece of sterile lint smeared with sterile albolene. For the healing of cracks and abrasions, the application of an eight per cent. nitrate of silver solution, followed for a short time by the use of a sterile nipple shield, had proved valuable in his If the nipple continued to be tender and nursing painful, applications of the glycerole of tannin would usually give relief. If mastitis threat-ened, the breasts should be emptied, the bowels emptied, and ice applied to the breasts.

(To be concluded.)

Letters to the Editors.

THE SIGN OF THE RED CROSS.
500 FIFTH AVENUE, NEW YORK,

July 7, 1908.

To the Editors:

Will you not afford space in your valuable journal for a word to our friends in the hospitals of New York State and elsewhere who have been making use of the Geneva, or red, cross as a means of raising funds on "tag days" and similar occasions, in innocent (no doubt) but express violation of the charter rights of the American National Red Cross and of our treaty obligations as a nation?

It is probable that the hospitals are not aware that they are misusing the insignia of the Red Cross, still less that in doing so they are injuring the Red Cross itself. They have found other persons and institutions using the red cross, and doubtless have thought it harmless for them to use it, especially for a purpose more or less like that of the Red Cross. When they learn that the red cross is the common symbol of all army hospital corps and auxiliary Red Cross societies, which protects the

sick and injured and the hospital personnel and material from attack in time of war, and that now, all over the world, it has come to cover and signify this special and official kind of protection, relief and prevention of sickness and injury in war, disaster, and pestilence, they will realize that it cannot be used loosely without having its usefulness seriously

impaired.

Emergency relief, indeed, on the large scale which the Red Cross has to undertake in times of calamity can only be organized through long previous preparation. It is in part as a preparation for its other duties that it has embraced this year what is, perhaps, the greatest mission of all, that of combating tuberculosis, which slays its hundreds where war slays its tens. Preparation is a question of educating and rousing the people to protect themselves. It cannot be done in a minute. Millions of dollars are needed before a tolerable condition of preparedness can be reached. The problem of stopping the terrible drain of life and power is a vital one to America, and the assistance of all her children is needed, not only in the multitude of important special ways of which the hospitals are worthy examples, but in other larger general and more inclusive

Only those concerned with questions of a large and general nature know how difficult it is to secure and hold the popular attention to a subject after the crisis has passed. It is particularly difficult to make our American people realize that war and disaster and pestilence are coming again and again to exact their frightful harvest of death and suffering, unless something is done to check them, and that it is infinitely more merciful (as well as sensible) to take pains for prevention than for belated relief. The need of a symbol which shall recall and summarize to the popular mind what has been done along this line and what remains to be done is plainly apparent. Its significance is what gives it its value. This is why the hospitals like to use the picturesque Geneva cross, and precisely why they should not use it. Every misuse makes for confusion, and the loss through confusion falls ultimately and heavily upon the people themselves, whose organization the Red Cross is.

Our national Red Cross is not, as some people imagine, a private and exclusive society. It is, instead, the whole people organized for the purpose of preventing suffering and loss of life. Everybody—man, woman, or child—may become a member and have a voice in it. It is public and official; one third of the members of the central committee are appointed by the President of the United States, the finances are audited by the War Department, and a report is annually made to Congress. It is linked with the Red Cross societies of forty-two other nations, whose total membership is upward of

five million members.

It may be asked, perhaps, why, with this important rôle, the Red Cross has not been given power to protect itself. The answer is that it has been given such power. By an act of Congress, January 5, 1905, the misuse of the red cross is made a misdemeanor, punishable by fine or imprisonment or both. Although the Red Cross has power to prosecute, it feels it better to be merciful here also. The

abuse of the red cross is not of recent standing. Many persons and institutions are using it in innocent ignorance of the injury they are causing. Moreover, the Red Cross has not until recently made an attempt to protect its insignia. It has depended upon the loyalty of the people. Our people, however, are a busy people, engrossed to a large extent in their own affairs, and something in the nature of a reminder seems to be needed. May I take the liberty of offering it in this present form, and begging especially of the hospitals, which have the interest almost of kinship in the Red Cross, to help secure the latter in its emblem? The Department of Charities of New York, thanks to Commissioner Hebberd, and Bellevue and the Allied Hospitals of New York, have set a splendid example to the hospitals of the country by changing from the red cross to the symbol of Æsculapius, and it is already bearing fruit. Will not the members of the hospital boards, as distinguished and enlightened members of the community, do as much?

H. F. Draper, Secretary, New York State Branch.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Health Education League Booklets. Published by the League, 113 Devonshire Street, Boston, Mass.

The Health Education League has concluded its third year of very beneficial work. It is a Boston society (president, Dudley A. Sargent, M. D.; secretary, the Rev. George H. Cate; treasurer, Mr. A. L. Darrow), the aim of which is to educate our people to a healthy living. This is to be done by lectures and booklets. The latter are sold at a nominal price. Fifteen such booklets have been planned for publication so far, and Nos. 1 to 9, 11, 13, and 15 have appeared. They should be widely distributed. If our dispensaries could afford to give some of these printed advisors free to their patients, the benefit derived would be undoubtedly very great. For example, No. 1.—Hints for Health in Hot Weather; No. 2.—Milk; No. 4—Meat and Drink; No. 5—Healthful Homes; No. 8.—The Care of Little Children; No. 9.—The Plague of Mosquitoes and Flies; etc. For our schools, for both teachers and pupils, is well adapted No. 7.—The Boy and the Cigarette.

Le Cancer. Prophylaxie, étiologie, traitement. Par le Docteur C. Sobre-Casas, médecin de l'hôpital Rawson (Buenos Aires). Paris: G. Steinheil, 1908. Pp. 224.

Commissioned by his government to make a report on the existing agencies in Europe and America for the study and control of cancer, M. Sobre-Casas presents in this volume the result of his observations and studies abroad. There are given in considerable detail the resources and efforts of all important institutions in every country working in the campaign directed against cancerous disease, a movement which, in enthusiasm, energy, and hopeful promise, is now probably only second to the similar worldwide warfare being waged against tubercu-

lous disease. The various ætiological theories are intelligently discussed, surgical treatment is properly given the preeminence to which its superiority over all other methods of treatment at present entitles it, and optimistic views are expressed as to the outcome of the widespread interest now being taken in the question of the control of this scourge. M. Sobre-Casas's volume constitutes a substantial addition to the literature of the subject which will be appreriated by every student of malignant disease.

An Aid to Materia Medica. By Robert H. M. Dawbarn, M. D., Professor of Surgery and of Surgical Anatomy, New York Polyclinic Medical School, etc. Fourth Edition, Revised and Enlarged by Edd V. Delepher, M. D. New York: The Macmillan Company, 1908. Pp. xi-338. (Price, \$1.75.)

This book presents in a short space and tabular form all the drugs and preparations recognized by the present pharmacopæia, with a list of the newer unofficial drugs and remedial agents. It is a carefully prepared manual, to be used for its instructive as well as its reference value.

Miscellany.

A Revision of the International Classification of Causes of Death .- Dr. Cressy L. Wilbur, the chief statistician of the Bureau of the Census, has issued the following circular, dated June 2, 1908:

DEAR DOCTOR—The International Classification of Causes of Death, which is intended for the purposes of morbidity and hospital returns as well as for mortality statistics, will be subjected to its second decennial revision next year. This system, formerly known as the "Bertillon system," was recommended by a committee of the International Statistical Institute during its session at Chicago in 1893. It was urgently recommended for adoption by the American Public Health Association, representing the sanitary authorities of Canada, Mexico, and the United States, in 1898. In the first revision, held at Paris in August, 1900, representatives of twentysix countries participated. It is employed by the United States Bureau of the Census, by all registration States, and by nearly all registration cities in the United States. Every country in North and South America has adopted it, and it is used by Japan, and by France, Spain, Holland, Belgium, Greece, Bulgaria, and other European countries. It has also recently been adopted, after careful comparison with the system formerly in use, by the Bureau of Census and Statistics of the new Commonwealth of Australia.

At the recent meeting of the American Medical Association at Chicago, the House of Delegates unanimously resolved 'That the International Clas-sification of Diseases and Causes of Death be recommended for all official morbidity and mortality statistical reports." A special committee, whose chairman is Dr. Frank P. Foster, of New York, is preparing recommendations for submission to the International Commission of Revision, and committees have been appointed by the various sections of the association and by national organizations, such as the American Academy of Medicine, the American

Medicopsychological Association, and others, to cooperate with the association's committee. The subject of classification will be made a special topic at the approaching session of the Section in Vital Statistics of the American Public Health Association. to be held at Winnipeg, Manitoba, August 25 to 28, 1908.

It was proposed in the resolutions adopted by the American Medical Association at Chicago that inquiry be made as to the possibility of holding the meeting for revision at Washington in 1910 in connection with the International Congress of Hygiene and Demography, but the preliminary announce-ment just issued by Dr. Bertillon, at the request of the Ministry of Foreign Affairs of the French Government, indicates that the year 1909 has been chosen, largely to facilitate the use of the revised classification in connection with the mortality statistics of the census year 1910 in the United States. This action should be greatly appreciated, and all registration officials, health officers, hospital physicians, and the profession generally should cooperate, so that the results of the revision will be thoroughly satisfactory for use in this country during the next ten years. Many suggestions from American physicians were incorporated in the first revision, but the progress of medical science and the test of practical use will indicate changes that are desirable. The system may be examined in the annual reports on mortality statistics published by the Bureau of the Census, as well as in the registration reports of many States and cities. A copy of a pamphlet on Relation of Physicians to Mortality Statistics, containing an outline of the classification, will be sent by the director of the census to any physician upon request, and I shall be pleased to receive any suggestions for the revision of the classification, which I will submit to the cooperating committee and to the International Commission.

CONSTITUTION OF COMMITTEES.

lThe General Committee of the American Medical Association on Nomenclature and Classification of Diseases was authorized to continue its work by unanimous vote of the House of Delegates on June 3, 1908, and, according to the terms of the original resolution under which it was constituted, it is desirous of cooperating with representa-tives from other national organizations interested. The following list of committees includes those appointed in the short interval up to June 24, 1908. It is hoped that other organizations, whose meetings take place later in the year, will appoint representative committees, and that physicians generally will aid by practical suggestions.]

AMERICAN MEDICAL ASSOCIATION

GENERAL COMMITTEE ON NOMENCLATURE AND CLASSIFICATION

- Dr. Frank P. Foster, Chairman, 554 West 114th Street, New York, N. Y
- Dr. J. Chalmers Da Costa, 2045 Walnut Street, Philadelphia, Pa. Dr. Alexander Duane, 49 East Thirtieth Street, New York,
- N. Y. Dr. W. A. Newman Dorland, 1623 Walnut Street, Phila-
- delphia, Pa. Dr. Victor C. Vaughan, 221 South State Street, Ann Arbor, Mich.
- SECTION IN OBSTETRICS AND DISEASES OF WOMEN
- Dr. E. E. Montgomery, 1703 Walnut Street Philadel phia, Pa.
- Dr. B. R. Schenk, 503 Washington Arcade, Detroit, Mich.
 SECTION IN HYGINAL AND SANTARE SCIENCE
 Dr. S. T. Armstrong, Secretary of Section, 144 East Thirtyeventh Street, New York, N. Y.

| | Smalls in Lancin |
|--|---|
| SECTION IN STOMATOLOGY. DR. GEORGE V. I. BROWN, Chairman, 445 Milwaukee Street, Milwaukee, Wis. Dr. V. A. Latham, 808 Morse Avenue, Rogers Park, Chi- cago, Ill. | Canada—Halifax |
| Dr. F. B. Morehead, 72 Madison Street, Chicago, Ill. SECTION IN CUTANEOUS MEDICINE AND SURGERY. | Ecuador—Guayaquil May 23-30 4 Egypt—Cairo May 27-June 3 6 Germany—General May 30-June 6 6 Java—Batavia May 2-39 14 |
| Dr. J. A. Fordyce, 40 West Fortieth Street, New York, N. Y. | Portugal Lisbon |
| SECTIONS IN DISEASES OF CHILDREN, IN NERVOUS AND MENTAL DISEASES AND IN LARYNGOLOGY AND OTOLOGY. | Siberia—Vladivostock May 5-(4. 1 Turkey—Bagdad May 30-June 6. 20 Plague—Foreign. |
| [Representatives authorized but not yet appointed.] SECTION IN PATHOLOGY AND PHYSIOLOGY. Dr. Walter L. Bierring, Iowa City, Ia. Dr. William M. L. Coplin, Jefferson Medical College Hospital, Philadelphia, Pa. | Chile—Antofagasta May 24 24 Chile—Arica May 27 Present Chile—Iquique Max 26 I China—Pocehow Max 30-June Present Cochin-China—Cholon May 23-30 5 15 15 15 15 15 15 15 |
| AMERICAN ACADEMY OF MEDICINE. Dr. Frederick H. Gerrish, Chairman, 675 Congress Street, | Ecuador — Guayaqual May 23:30. 10 Egypt — General May 27:June 2 42 16 June 3:9. 36 26 Egypt — Alexandria May 29:June 00 5 3 May 29:June 00 5 3 |
| Portland, Me. Dr. Walter McNab Miller, University of Missouri, Columbia, Mo. Dr. Henry Ware Cattell, 3709 Spruce Street, Philadelphia, Pa. | Mauritius—Port Louis. May 1-31. 2 2 Peru—General May 30-June 1. 38 11 Peru—Callao May 30-June 6. 7 2 Peru—Lima May 30-June 6. 3 4 Straits Settlements—Singapore May 0-16. 1 1 Turkey—Bagdad May 30-June 6. 11 6 |
| AMERICAN MEDICOPSYCHOLOGICAL ASSOCIATION. | Venezuela—Caracas |
| Dr. Adolph Meyer, Chairman, Ward's Island, New York, N. Y. Dr. Henry M. Hurd, Johns Hopkin's Hospital, Balti- | Porto Rico—San JuanJuly 8 |
| more, Md. Dr. Colonel Bell Burr. Flint. Mich. COMMITTEE ON CLINICAL RECORDS. BELLEVUE AND ALLIED HOS- | Yellow Ferce Foreign. Brazil—Manaos May 32-30 |
| PITALS, NEW YORK. Dr. Robert J. Carlisle, 44 West Eighty-fourth Street. Dr. Warren Coleman, 58 West Fifty-fifth Street. | Cuba—Santiago Iuly 1 Ecuador - Guayaquil May 23-30 1 Mexico—Laguna de Terminos June 27 2 Mexico Veracruz July 1 |
| Dr. Thomas A. Smith, 57 West Seventy-fifth Street. Dr. Edmund L. Dow, 49 West Fifty-seventh Street. | Cholera—Foreign. Cochin-China—Cholon |
| American Public Health Association. Section in vital statistics. | Cochin-China—Saigon May 9-30 71 63 Straits Settlements—Singapore May 9-16 2 |
| DR. WILMER R. BATT, Chairman, State Registrar, Harris- | Public Health and Marine Hospital Service: |
| burg, Pa. Dr. F. W. Reilly, Assistant Commissioner of Health, Chicago, Ill. Dr. Elzéar Pelletier, Secretary, Provincial Board of Health, | Official list of changes in the stations and duties of com- missioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 8, 1908: |

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 8, 1908:

Creel, R. H., Passed Assistant Surgeon. Granted leave of absence for two months from August 3, 1908.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Granted leave of absence for one month from July 20, 1908.

GUITERAS, G. M., Surgeon. Detailed to represent the Ser-

Gutteras, G. M., Surgeon. Detailed to represent the Service at the Fifth Pan-American Medical Congress at Guatemala, August 6 to 10, 1908.

HART, L., Assistant Surgeon. Temporarily relieved from duty at Stapleton. N. Y., and directed to proceed to Washington, D. C., reporting to the director of the Hygienic Laboratory for temporary duty.

ILTIS, GEORGE W., Pharmacist. Granted leave of absence

for thirty days from July 3, 1908.

KEEN, W. H., Pharmacist. Granted leave of absence for one day, June 28, 1908, under paragraph 210, Service Regulations.

KRULISH, E., Assistant Surgeon. Granted leave of absence for twenty days from July 6, 1908.

WARD, W. K., Passed Assistant Surgeon. Granted leave of absence for one day. June 16, 1908. under paragraph 191, Service Regulations.

WARD, W. K., Passed Assistant Surgeon. Relieved from duty at Ellis Island and directed to proceed to Manila, P. L. reporting to the Chief Quarantine Officer for I., reporting to the Chief Quarantine Officer for

WERTENBAKER, C. P., Surgeon. Leave of absence granted for three days from July 1. 1908, amended to read one

WILSON, J. G., Acting Assistant Surgeon. Granted leave of absence for three days from June 16, 1908, under Paragraph 210, Service Regulations.

Appointment.

Dr. Henry C. Richter, of Pennsylvania, was, on July 7, 1908, appointed an acting assistant surgeon for duty at Calexico, Cal.

Official Rews.

Public Health and Marine Hospital Service:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general. United States Public Health and Marine Hospital Service, during the week ending July 10, 1908:

Montreal, P. Q.
Dr. William H. Guilfoy, Registrar of Records, Department of Health, New York, N. Y.
Dr. C. A. Carter, Registrar, Health Department, Indianapolis, Ind.

| Places. | Date. | Cases. | Deaths |
|------------------------------|-----------------|--------|--------|
| Alabama-Mobile | Inn 13 20 | | |
| California-Los Angeles | Tune 13-20 | 1 | |
| California-San Diego | To June 13 | .,100 | |
| Estimated, and mainly in the | | | |
| vicinity of the Pala Indias. | | | |
| Reservation. | | | |
| California-San F. ancisco | June 13-20 | 4 | |
| Iowa-Davenport | June 1-30 | 3 | |
| Iowa-Sioux City | June 1.30 | 2 | |
| Kentucky-Covington | June 20-27 | 3 | |
| Louisiana-New Orleans | June 20 27 | 5 | 1 |
| Missouri-Conway | April 20-May 24 | 29 | |
| Missouri-Kansas City | June 20-27 | I | |
| Ohio-Cincinnati | June 19-26 | 4 | |
| Ohio-Dayton | June 20-27 | 1 | |
| Ohio-Troy | 10 July 3 | 28 | |
| Rhode Island-Pawtucket | Tune 12 | 1 | |
| Tennesse Dickson | Tome to | 0 | |
| Texas San Antonio | Jan. 20-27 | I | |
| Vermont-Whiting | May 5 | I | |
| Washington-Spokane | Tuno ve Iulu o | 17 | |
| Wiscot str A. Cresse | Lune 17-july 2 | . · I | |
| | | 3 | |
| Smally v Insular. | | | |

Ports R Vi. . . , rez J me 6-20 4

Boards Convened.

Boards of medical officers were convened to meet on Boards of medical officers were convened to meet on July 13, 1908, for the purpose of examining officers of the Revenue Cutter Service for promotion, as follows: Baltimore, Md.: Surgeon L. L. Williams. chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder. New York, N. Y.: Passed Assistant Surgeon J. A. Nydeg-ger, chairman; Passed Assistant Surgeon C. H. Lavin-

der, recorder.

Boston, Mass.: Surgeon R. M. Woodward, chairman; Acting Assistant Surgeon F. H. Cleaves, recorder. San Juan, P. R.: Passed Assistant Surgeon M. H. Foster, chairman; Acting Assistant Surgeon P. del Valle

Atilles, recorder.

Actines, recorder.

Chicago, Ill.: Surgeon G. B. Young, chairman; Assistant Surgeon C. E. Wood, recorder.

Mobile, Ala.: Surgeon G. M. Guiteras, chairman; Acting Assistant Surgeon C. S. Carter, recorder.

Detroit, Mich.: Surgeon Fairfax Irwin, chairman; Acting Assistant Surgeon E. W. Mooney, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending July 11, 1908:

BINGHAM, E. G., Captain. Relieved from duty at the Army

General Hospital, San Francisco, Cal., and ordered to Fort Porter, N. Y., for duty.

DALE, F. A., Captain. Ordered to accompany troops from Fort Lincoln, N. Dak., to duty at American Lake, Wash.

FORD, J. H., Captain. Ordered to accompany troops from Fort William Henry Harrison, Mont., to duty at

American Lake, Wash.

SNYDER, H. McC., Lieutenant. Ordered from Army General Hospital, San Francisco, Cal., to Fort Rosencrans,

eral Hospital, San Francisco, Cal., to Fort Rosencrans, Cal., for temporary duty during absence, on leave, of Captain P. W. Huntington.

Van Dusen, J. W., Captain. Granted leave of absence for one month, to take effect about October 1st.

The following medical officers have been ordered to report at Washington, D. C., for examination for promotion Captains P. M. Ashburn, E. H. Bruns, C. L. Cole, H. S. Greenleaf, W. D. Webb, H. L. Gilchrist, R. C. Loving, J. D. Heysinger, W. H. Tefft, R. M. Culler, H. G. Humphreys, W. F. Truby, L. T. Hess, R. N. Winn, R. H. Pierson, O. G. Brown, L. L. Smith, L. J. Owen, F. W. Weed, P. L. Freeman, E. P. Wolfe, C. E. Marrow, T. C. Lyster, C. A. Snoddy, J. F. Siler, E. W. Miller, S. G. Zinke, and H. L. Brown; and Lieutenants E. H. Bruns and C. L. Cole.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending July 11, 1908:

ALLEN, A. H., Assistant Surgeon. Will proceed to Sancti Spiritus, Cuba, for duty, relieving Assistant Surgeon E. C. White.

BISHOP, L. W., Passed Assistant Surgeon. Detached from the naval recruiting station, Indianapolis, Ind., and orthogonal statements.

dered to the naval recruiting station, Denver, Col. BLACKWELL, E. M., Surgeon. Commissioned a surgeon

BLACKWELL, E. M., Surgeon. Commissioned a surgeon from March 4, 1908.
 COLTES, F. X., Assistant Surgeon. Detached from the Connecticut, and ordered to report to the commander, third squadron, Pacific Fleet, for duty.
 EYTINGE, E. O. J., Assistant Surgeon. Detached from the Concord and ordered to the Illinois.
 FISKE, C. N., Passed Assistant Surgeon. Ordered to the naval recruiting station. Boston Mass, and to adding the control of th

naval recruiting station, Boston, Mass., and to addi-tional duty in attendance upon officers of the Navy and the Marine Corps residing in Boston not otherwise provided with medical attendance.

FLINT, J., Assistant Surgeon. Detached from the Wil-mington and ordered to the Connecticut.

Hugans, M. E., Assistant Surgeon. Detached from the Illinois and ordered to report to the commander, third squadron, Pacific Fleet, for duty.

Mann, W. L., Jr., Acting Assistant Surgeon. Appointed

an acting assistant surgeon from July 1, 1908.

B. E. H. H., Assistant Surgeon. Detached from the Naval Hospital, Cavite, P. I., and ordered to Washing-

SMITH, F. W., Assistant Surgeon. Detached from the Wisconsin and ordered to report to the commander,

Wisconsin and ordered to report to the commander, third squadron, Pacific Fleet, for duty.

STALNAKER, P. R., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 3, 1908.

STEELE, J. N., Medical Inspector. To be placed on the retired list on September 18, 1908, after the completion of thirty years' service, in accordance with a provision contained in the naval appropriation act of May

T3, 1908.

WHITE, E. C., Assistant Surgeon. Relieved from further duty in Cuba and ordered to comply with the Navy

Department orders of May 29, 1908.

Births, Marriages, and Deaths.

Born.

KENNEDY.—In Washington, D. C., on Monday, June 22d, to Dr. Robert M. Kennedy, of the Medical Corps of the United States Navy, and Mrs. Kennedy, a daughter.

VAN METER.—In Lexington, Kentucky, on Tuesday, June 30th, to Dr. Benjamin F. Van Meter and Mrs. Van Meter, a son.

BLUMENTHAL-FELDSTEIN.-In Philadelphia, on Tuesday, June 30th, Dr. Adolph Blumenthal, of Pittsburgh, and Miss Ida Feldstein.

JACKSON—SEDGWICK.—In New York, on Wednesday, July 1st, Dr. Egerton S. Jackson and Mrs. Mary Elizabeth Sedgwick.

Satterwhite—Martin.—In Great Neck, Long Island, on Tuesday, July 7th, Dr. Preston Satterwhite, of New York, and Mrs. Florence Brokaw Martin.

Shehan—Huston.—In Louisville, Kentucky, on Tuesday, July 7th, Dr. John N. Shehan and Miss Lydia Lee Huston.

WICKES—APPEL.—In 'Fort Russell, Wyoming, on Wednesday, July 8th, Dr. George Lewis Wickes, of the Medical Corps of the United States Navy, and Miss Marjorie Appel.

BARNES.-In Oxford, Connecticut, on Sunday, July 5th,

DARRIS.—III OATOIG.
Dr. Lewis Barnes, aged eighty-four years.
BRADLEY.—In Kansas City, Missouri, on Thursday, July
2d. Dr. Zarilda P. Bradley, aged forty-five years.
COYLE.—In New York, on Friday, July 10th, Dr. Felix

H. Coyle.

Dodge.-In Lost Cabin, Wyoming, on Monday, July 6th, Dr. George Dodge.

Drescher.—In Brooklyn, on Tuesday, July 7th, Dr. Maximilian Frederick Charles Drescher, aged forty-nine years. Flannery.—In Philadelphia, on Thursday, July 2d, Dr.

FLANNERY.—In Finiadelpina, on Inursday, July 2d, Dr. Henry Flannery, aged thirty-one years.

GLEASON.—In London, England, on Friday, July 3d, Dr. C. Campbell Gleason, of New York.

HEAVRIN.—In Owensboro, Kentucky, on Tuesday, June 30th, Dr. J. P. Heavrin.

HINES.—In Raleigh, North Carolina, on Wednesday, June 24th, Dr. J. M. Hines, aged seventy-two years.

HOFFMAN.—In Jersey City, New Jersey, on Wednesday, July 8th, Dr. James Hoffman.

July 8th, Dr. James Hoffman.

HUTTON.-In Haines Corners, New York, on Tuesday, July 7th, Dr. Allan Clarke Hutton, of New Brunswick, New Jersey, aged sixty-seven years.

Lypston.—In Chicago, on Monday, July 6th, Dr. Lames.

Lydeton,—In Chicago, on Monday, July 6th, Dr. James A. Lydston, aged forty-seven years.

Monroe,—In Monroe, Wisconsin, on Monday, July 6th, Dr. William Monroe, aged ninety years.

Shaw.—In New Bedford, Massachusetts, on Thursday, July 2d, Dr. John C. Shaw, aged fifty-one years.

Sterling.—In Fairmount, West Virginia, on Tuesday, June 30th, Dr. A. W. Sterling, aged fifty-nine years.

Stoutt.—In Camden, New Jersey, on Friday, July 10th, Dr. Daniel M. Stout aged eighty-type years.

STOUT.—In Camen, sew Jersey, on Friday, July Comp. Daniel M. Stout, aged eighty-two years.
Tillotson.—In Chicago, on Thursday, July 2d, Dr. George K. Tillotson, aged fifty-eight years.
Wittins—In Hammonton, New Jersey, on Monday, Inno. 20th, Dr. W. George Wilkins.

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NEW YORK, JULY 25, 1908.

WHOLE NO. 1547.

Original Communications.

COMPLICATING GRAVES'S DISEASE.*

BY CHARLES G. STOCKTON, M. D., AND A. E. WOEHNERT, M. D., Buffalo, N. Y.

Mrs. A. V. C., aged forty-three, married, born in Sweden. Family history good. She had had six living children and two miscarriages, one at six weeks, a second at ten weeks. She always enjoyed fairly good health. During the summer of 1904 she had slight ædema of the lower limbs. In December, 1904, she noticed that she tired easily, felt more or less exhausted, and had some cough and expectoration. Early in 1905 she noticed swelling of the neck and some protrusion of the eyes; she did not seem particularly nervous, nor did she give a history of much loss in weight. She was first seen in June, 1905. At this time she presented the typical facies of Graves's disease. The expression of her face, with its marked exophthalmus, was striking. Her appetite was good, her bowels had been constipated since November, she had been sleeping poorly of late; there was no history of any digestive disturbance, and she had no

Physical examination: Heart apex in the sixth space, a little to the left of the normal position. First sound lacked in muscular quality and was accompanied by a systolic bruit which increased in intensity toward the base of the heart; second sounds were well balanced and of normal intensity; the lungs were clear; the liver dulness extended from the sixth rib to the margin of the ribs; the splenic dulness was not increased; the pulse was 100, of poor quality; the thyreoid gland was much enlarged; a loud systolic sound was heard over both lobes, also heard over supraclavicular and infraclavicular regions; reflexes were normal; there was some nystagmus; von Graefe's sign present; the urine was dark amber in color, specific gravity was 1.030, no albumin, no sugar, indican was present, no casts were found.

A diagnosis of Graves's disease was made, and the patient was placed upon thyreoidectin, and was advised to rest. She returned to her home in a neighboring city, and was not seen again until September 9th. Her condition was now distinctly worse. There was more shortness of breath, now distinctly worse. Incre was more shortness of breath, the pulse was 130, and the temperature 98.6° F. Upon examination the heart was found dilated, there was a distinct gallop rhythm. Examination of lungs showed flatness and absence of breathing over the left chest. The liver dulness extended from the sixth rib to the umbilicus; the abdomen was large. Patient entered the General Hospital on September 14, 1905.

September 15th. The left chest was aspirated and 1,210 e.c. of brownish serous fluid were removed. Examination of the fluid: Specific gravity, 1.015; albumin present; no sugar; blood present; some endothelial cells; no bacteria

September 16th. Patient felt easier; physical signs showed harsh breathing over the left chest and a coarse friction rub. There was cough, and frothy mucopurulent sputa was raised.

September 18th. Liver dulness extended from upper border of the fifth rib to two inches below the umbilicus, and was ten inches in width.

*Read before the Association of American Physicians, Washinston, D. C., May 13, 1968.

September 21st. Cardiac dulness extended one and one quarter inches to the right of the median line in the second space, and two inches to the right of the median line in the fifth space; left border of the heart at third rib was three inches to the left of median line, six and one fourth inches in the sixth space. The heart action was irregular; no friction; no endocardial murmurs were heard; the first sound was valvular in quality.

September 26th. White cells, 9,400; hæmoglobin eighty

per cent. Examination of the chest showed fair resonance

October 5th. Patient was nervous and emotional. She had a chill and temperature of 101° F. There was unusual

prominence in the right subclavicular region.
October 6th. Temperature, p. m., 102° F.; patient was excitable; right shoulder and regions above and below F.; patient was

Cavicle were more prominent and reddened.
October 8th and 9th. Some pain and redness in the right shoulder and clavicular region.
October 10th. Right arm was larger in circumference than the left and was somewhat painful.
October 11th. Circumference of the left arm, six inches

above the external condyle, was eight and a quarter inches; right arm, same region, eleven and three fourths inches. Left forearm, two inches below the external condyle, was eight and a half inches; right arm, same region, ten inches. There was a feeling of bogginess; there was pain on deep pressure.

pressure. October 12th. Examination of the heart showed first and second sounds of equal duration; no murmur; from the fifth space to the third rib, left of the sternum, reduplication of the second sound was heard. The liver dulness extended from the fifth rib to one and a half inches above the umbilicus. The blood showed a leucocytosis of 8,460; hæmoglobin eighty per cent.

October 14th. Swelling extended down to the right wrist; there was a small nodular mass under the axilla,

painful on pressure.

October 15th. Tissues generally ædematous on the right side of the face and upper part of right thorax.

October 20th. Right arm, six inches above the external condyle, was fourteen inches in circumference; left arm, condyte, was norteen menes in circumsterice; left arm, two inches below external condyle, twelve and one quarter inches; left, same region, eight and one half inches. Right wrist, level with styloid, eight and one quarter inches; left, six inches. The fingers of the right hand were more cyanotic than the left; the face was more edematous and cyanotic on the right side than the left. The superficial veins in the right side of thorax were prominent and engorged. The right side of the chest became still more prominent. There was side of the chest became still more prominent. cedema at the bases of both lungs, and there was fluid in the right pleural cavity

October 26th. One hundred c.c. of straw colored fluid

were removed from the chest.
October 20th. Œdema more marked; extremities were cyanotic; respirations frequent and labored; the superficial veins of thorax were more dilated.

October 30th. Sixty-five c.c. of slightly turbid fluid were withdrawn from the right chest. Patient was very weak

and exhausted.

November 2d. Four hundred and fifty c.c. of fluid were

withdrawn from right chest.

November 3d. Edema of the chest and face somewhat less marked. The veins, especially in the back, were much enlarged. November 4th. Two thousand c.c. of fluid were withdrawn from the right pleural cavity.

Pericardium slightly thickened; heart was slightly enlarged, but not increased in weight. The valves were normal, save of the mitralis, which were somewhat thickened. Aorta showed no sclerosis. The superior vena cava and both innominate veins were firm and hard. The superior vena cava and right innominate contained a mass of pinkish, grey material which could not easily be stripped off. The left innominate was not wholly occluded. There were some adhesions in both pleural and in the pericardial cavities. The right lung was small and compressed by fluid. The liver was large, firm, the lobules well marked on section, and the surface irregular. The thyreoid was much enlarged. The eyes receded in their sockets and were covered with lids

ered with lids.

Post mortem diagnosis: Exophthalmic goitre, thrombosis of vena cava and right vena innominata, also practically complete thrombosis of the left innominate vein.

November 5th. Jaundice developed, and the patient gradually became comatose, and died November 9, 1905.

Autopsy: Nine hours later, made by Dr. N. G. Russell.

The case presented the features of a very acute form of Graves's disease, the course extending from January, 1905, to her death, November, 1905. From her second visit in September until her death, the general features were more those of circulatory failure than those due to disturbance of the nervous system. There was an occasional rise in temperature before the signs of venous thrombosis appeared. The thrombus evidently started in the right innominate vein. For a day preceding the formation of the thrombus there was a rise in temperature. October 5th, the day of onset, she had a chill, and, locally, pain, tenderness, and swelling above the right clavicle.

The subsequent course was one of progressive obstruction to the venous return, as evidenced by the increase in œdema of the arm and face, the enlargement of the superficial vessels, and the current flowing downwards to communicate with the inferior vena cava. Her temperature immediately after a chill rose to 102° F., and then gradually declined, to reach normal two weeks later. Welch, in an article published in 1900, was able to collect twenty-eight cases of thrombosis in heart disease, of which the superior vena cava was thrombosed partially or wholly in six. The most common starting point was in the left jugular bulb, or left external jugular vein, or left innominate or subclavian vein. The left side was affected in twenty-two out of twenty-four cases, of which fifteen were unilateral and seven bilateral.

In searching for a cause for the thrombosis in this case, three hypotheses might be entertained:

First. The pressure of the enlarged heart might have been sufficient to obstruct the venous return. Pressure of the left auricle in mitral disease may possibly induce obstruction.

Second. The change brought about in the blood in Graves's disease renders the affected individual more liable to infections of various kinds. Although there was no leucocytosis at any time in this case, there was rise in temperature, and there may have been a septicæmic condition developed secondary to a decrasia

Third. At the autopsy the fasciæ covering the veins appeared to be tense and thickened, and with venous engorgement resulting from failing circulation, might give rise to obstruction sufficient to favor thrombosis. Thrombosis of the superior vena cava complicating Graves's disease appears to be unique. We have been unable to find another case in the favorating.

THE SUPPOSED EVILS OF EXPERT TESTIMONY.

By F. X. Dercum, M. D., Philadelphia,

Professor of Nervous and Mental Disease, Jefferson Medical College; Neurologist to the Philadelphia Hospital.

At the meeting of the Medicolegal Society of Philadelphia, held on April 28, 1908, in an address on expert testimony, I expressed in substance the following views. I have been prompted to formally publish them for these reasons: First, much misunderstanding exists especially on the part of physicians as to the nature of expert testimony and as been said from time to time of the "evils" so called of expert testimony; and thirdly, because every now and then correctives for these supposed evils are proposed which I believe to be very unwise. Among these I must include some proposed by my friend, Dr. George W. Jacoby.

It will be best to begin by a brief statement of facts. Thus, expert evidence differs from ordinary evidence; it is essentially opinion evidence. The testimony of nonexpert witnesses consists in the recital of facts-of facts seen, heard, or otherwise perceived by them. The testimony of an expert consists in the giving of opinion. The opinion may be based, first, upon facts observed by the expert himself, secondly, upon facts testified to by others, and, thirdly, upon facts embodied in a hypothetical question. The facts observed by himself are of course a part of the expert's testimony in chief, and logically precede the giving of his opinion. Quite commonly these facts are technical in character and require for their determination technical training. Essentially, however, the position of an expert is that of a witness who draws inferences from facts presented, such inferences being justified by the special knowledge which he is supposed to have. We are next confronted by the question "What

constitutes an expert?" Under our laws-and I believe the provision to be a wise and just one-any witness may qualify as an expert, but the fact that a witness really possesses expert or technical knowledge must be clearly presented by counsel. When counsel fail to do so, the court may so interrogate the witness introduced as an expert as to place his qualifications clearly and unmistakably before the jury. When counsel do their duty, there is no danger of the testimony of an improperly qualified person having undue weight. If an improperly qualified person is placed upon the stand, one or two questions by counsel or court at once reveal the truth. For instance, in a trial in which the question at issue was that of insanity, a physician took the stand and made the general statement that he had given a great deal of attention to the subject of insanity. When requested to make a specific statement as to his experience with insane patients, he said that he had been a resident physician in a large asylum for the insane which contained many hundreds of patients. Questioned as to the duration of his service, it transpired that he had been at the hospital only a few weeks and then merely as a substitute. It need hardly be added that the jury gave as little weight to his testimony as it deserved.

Congre W. Jacoby, Psychiatric Expert Exidence in Criminal Proceedings Vene York Medical Journal, March 7, 1908, p. 431.

An expert witness is one supposed to have special knowledge of the subject under investigation and the jury are quite able to correctly judge of this fact. They hear of the opportunities which the witness has had for acquiring special knowledge, namely his experience in institutions, the positions which he holds or has held, the original papers, monographs, or books that he has written, or investigations that he has conducted. They have no difficulty in taking a proper measure of the man before them. They readily perceive that Dr. A., a general practitioner, is hardly as competent as Dr. B., a trained ophthalmologist, to give an opinion involving a question of injury to an eye. They readily understand that Dr. C., a surgeon, is not as capable of forming a judgment on a question of insanity as Dr. D., for many years an asylum man. Further, they even form quite correct judgments of the relative merits of men pursuing the same departments of knowledge. The jury are impressed as are others by age, wealth of experience, general reputation, and last but not least, the personality of the witness-whether he is honest, whether he is telling the truth as best he can.

It is quite the fashion to speak—both loosely and inadvisedly. I am convinced—of what are called the "evils" of expert testimony. Physicians in particular are in the habit of so expressing themselves, and not infrequently they are physicians who have testified as experts. My own observations in the courts, extending now over a quarter of a century, have convinced me that these evils are greatly exaggerated; and further I am convinced that such evils as may exist are due not to methods of legal procedure, but to the expert himself. The expert is human and not always blessed with a judicial temperament,—the faculty of making cold scientific abstractions. Not infrequently the circumstances of a case are such that the expert becomes interested. Almost involuntarily, often subconsciously, sentiment or emotion is aroused. Little by little a personal bias is acquired, and, though this may be acquired unconsciously, it is none the less prejudicial to the expert's testimony. Not infrequently he thus becomes an active partisan of the side for which he is called, and often reveals his bias both in his manner and in his language. Indeed, first among the evils of expert testimony, I would place the bias of the expert.

The expert frequently mistakes the nature of his function. Instead of regarding himself merely as a witness in the trial of a case, he regards himself as and assumes the rôle of counsel. That such an attitude leads unavoidably to distortion of facts and to malpresentation of evidence and that it hopelessly impairs the position of the expert, goes without saying. The expert has, it is true, a function to perform in addition to giving his testimony upon the witness stand, but this does not consist in his trying the case. His proper function begins long before the trial and consists in the discharge of a duty which he owes to the counsel employing him. Just as soon as an expert is in possession of the scientific facts of a case and has formed an opinion, he should present both facts and opinion to counsel. The opinion should be frank and full without regard to the contention of the side employing the expert. If the opinion is such that counsel

find it unfavorable, counsel may determine upon an entirely new course or may abandon a given line of prosecution or defense; or may, perhaps, dismiss his expert and employ another, which he has a perfect right to do. If the opinion is favorable, it should, in any event, be presented in such a way that all of the facts, whether favorable or unfavorable, are presented with equal force. Such a course is the only right course, it is demanded in simple justice to counsel himself. The latter should be in full possession of the unfavorable as well as the favorable facts of his case; besides the expert by taking into consideration all of the unfavorable as well as the favorable facts is able to formulate an opinion so secure as to be unassailable. This is the only logical course, it is the only proper and the only safe course. Everything depends upon the initial honesty of the expert in his conference with counsel employing him.

After having formed his opinion, a cautious and conscientious expert will rearray the facts in his mind and see how they would favor an opposite conclusion than that which he has reached. He should remember that an opposite conclusion may be advocated by opposing experts. Critically reviewing the case will inconceivably strengthen the opinion to which he arrives because it will eliminate all points of doubt and weakness. If a certain opinion is justified, surely it ought to be able to withstand the expert's own criticism, let along the adverse criticism of opposing experts and the cross examination of the opposing counsel.

Difficulties arise due to the ignorance of witness as to the nature of evidence both lay and expert. The professor called from his laboratory or the doctor from his practice forgets too often that the court room is not a lecture room or a consultation The doctor's statements upon the witness stand should be confined to a mere recitation of facts and of logical deductions based upon these facts, never to generalizations or to the citations of illustrations which may or may not have a bearing upon the case, and, least of all, to the presentation of facts which he has not himself observed as existing in the present case. It is true that a physician cannot testify upon the stand very many times without sooner or later gaining some idea of the nature of the facts to which he should testify and the nature of the opinions which it is proper that he should express. Much confusion, however, would be prevented if counsel would occasionally give physicians instruction upon this important matter. Not infrequently I have seen the medical witness, because of repeated objections by the opposing counsel or because of repeated warnings by the court become so confused and so disturbed as to forget the essential parts of his testimony or for other reasons to fail to testify to facts to which it would have been proper for him to testify. On more than one occasion I have known the testimony of the expert through lack of this precaution to be so much impaired as to be of very little value.

Difficulties will, furthermore, arise in expert testimony, because the expert is faulty in his method of presenting his testimony. Two glaring errors are commonly noted, first, an absence of system or of method, secondly the befogging of the facts by the use of technical terms. The testimony should be

presented in as systematic a way as possible. General facts should be stated first, special facts subsequently. In the presentation of the facts, he should realize at once that he can testify only to such facts as are objective in their nature. Thus, in a suit for personal injuries, the expert can testify to such objective symptoms as posture, gait, the presence of scars or physical deformity, the reaction of the patient to various tests, the condition of the circulation, of the surface of the body, of the various special organs, or of other facts evident to his, the expert's, senses. There are other facts which come to his knowledge in the course of his investigations to which he cannot testify; these are the so called subjective symptoms. They constitute facts of which the patient alone can be conscious, which the patient alone can feel, of which he alone can be aware by actual knowledge. However, while the expert cannot testify to subjective symptoms, it is perfectly proper for him to add, after a full presentation of the physical facts, that, in addition to the facts observed, he received a statement of subjective symptoms consonant with the symptoms observed by himself. There is another group of symptoms which, though objective in their nature, are also usually beyond the personal knowledge of the physician — phenomena which he himself has not or perhaps cannot observe and has no means of verifying; among these are restlessness at night, frequency of micturition, menstrual disturbances, or perhaps loss of appetite or the condition of the bowels. Of course, if both the subjective symptoms and this group of nonverifiable symptoms have been testified to by the plaintiff, the expert may take them into consideration in forming his opinion.

In regard to the use of technical terms, it cannot be too strongly insisted upon that their employment is as objectionable as it is usually unnecessary. There are very few scientific statements which cannot be rendered into language so simple that the ordinary layman can comprehend them. Especially is this true of the injuries presented by plaintiffs in damage cases and of the mental symptoms in cases of insanity. Every now and then the testimony of an expert is made worthless by the use of technical terms which obscure and do not elucidate. Further, the expert may also be subjected to frequent and annoying interruptions both by counsel and court, who may direct him to use language which the court and jury can understand.

In testifying to questions of insanity, the statements should also be systematic. The statement should embrace the place and date of the examination, the names of those who were present, the greetings if any exchanged with the person under examination, the demeanor, the conduct of the latter, the things that he said and did, his answers to questions, a statement as to the existence of hallucinations, delusions, and other mental symptoms if present, and finally an enumeration of the various physical signs.

In will cases it is best for the expert to confer with counsel in the preparation of the hypothetical question usually necessary. The expert is rarely a witness of fact; that is, he has rarely had the opportunity of examining the testator during the latter's

lifetime. The hypothetical question should consist of a simple recital of the facts presented by the history essential to establishing either the sanity or insanity of the testator. As a rule the question is uselessly and absurdly long, so long indeed that the jury will not and, indeed, cannot follow it; there are but few cases in which a condensed summary of the facts is not possible. Facts of but slight significance, of but little relevancy to the issue, had best be omitted; first because they are not necessary, and secondly because they are a source of weakness in giving an opportunity for a cross examination which diverts the attention of the jury and befogs the issue. In replying to a hypothetical question, it is usually merely necessary for the expert to reply in the affirmative or in the negative without making any qualifications. However, if a hypothetical question has been prepared by opposing counsel, a reply in the affirmative or negative may be possible, but usually qualifications are necessary.

This leads me to consider the conduct of the expert during cross examination; first as to his manner. He should be as open and as frank in his replies to the questions asked by the cross examiner as to the questions proposed by his own counsel. He should avoid any undue reserve or even the appearance of hedging, for the latter always gives rise to the idea that the witness is more or less biased. The answers should be brief and whenever possible consist of a simple affirmative or negative. qualification is necessary, this should be stated in as simple and as brief language as possible, though as fully as necessary. The expert witness should bear in mind that he is not the counsel in the case, and that he has nothing to do with the outcome. His answers should be scientifically accurate. counsel employing him will usually ask in redirect examination such questions as will tend to clear up or reaffirm points which the opposing counsel may have in cross examination obscured, minimized, or perhaps distorted.

These considerations show, I believe, first, that the "evils" of expert testimony are not as great as supposed, and, secondly, that when present they are in large degree due to the experts themselves.

However, it will be said that there is one great evil which I have not touched upon, namely, the differences of opinion of opposing experts. It is not so much the members of the bar or the courts, but physicians themselves who keep alive this reproach, and they do so, I believe, from an entire misconception of the facts. In the first place, in a very large number of cases, notably in suits for personal injuries, the differences of opinion regarding the actual findings are usually slight; it is only as to the outcome that much divergence of opinion may be noted, and here differences of opinion are frequently entirely legitimate. So it is with questions of mental disease. The differences of opinion are usually not as to the actual findings, but merely as to their interpretation. Usually the questions upon which experts divide are as to whether the findings do or do not justify the diagnosis of insanity, and here again differences of opinion may arise which may be perfectly legitimate. Particularly is this true when we reflect that a very large number of the criminals and other persons whose sanity is the subject of in-

quiry really constitute borderland cases. Furthermore, cases are constantly met with into which litigation does not enter, concerning which doubt arises and concerning which physicians differ. Note, for instance, the lucid cases of melancholia which some physicians refuse to commit and others insist upon committing to institutions. In other words, experts may differ, differ legitimately and honestly, and the difference is usually about borderland questions; and, after all, it is the function of the jury to decide these, and in the observation of the writer the decision of the jury is usually in accord with justice and with common sense. In every department of knowledge similar differences of opinion are developed. The very judges upon the bench differ from each other; they not infrequently hand down dissenting opinions, and the upper courts reverse the lower. Indeed, I am credibly informed that in the highest tribunal of the country, the Supreme Court of the United States, dissenting opinions are handed down in a large percentage of cases. Quite frequently the opinions are in direct opposition to each other, differing upon such fundamental questions as to what is and what is not constitutional, or upon other matters which to the lay mind seem equally elementary and concerning which, according to lay ignorance, there should be no differences of opinion. The facts become still more impressive when we reflect that the members of the tribunal are experts of the highest order and whose honesty and integrity stand on a plane equally high with their learning. Again, the expert opinions of the courts are upon cases stated, and the differences arising have to do with the interpretation of facts, with the application of principles, with divergent points of view. If it is perfectly normal for differences of opinion to arise among these highest of experts, it cannot be surprising that a similar condition obtains when the questions are medical,-when the facts are less definite, less readily determined, when of necessity the personal equation plays a larger rôle, and when there must be a greater range of individual interpretation. And yet I venture to say, in spite of the impression to the contrary, that the differences of opinion obtaining among medical experts are on the whole no more frequent and no more divergent than those obtaining in the high tribunals.

It is obvious that no plan can be devised which will do away with differences in expert opinion. As long as men are honest these differences will exist. An expedient devised long ago has created a body whose special function it is to weigh, reconcile, or cancel these and other differences in testimony, namely, the jury. The expert should remember that he is not the jury, no more than he is the counsel or the court. He is simply a witness whose busi-

ness it is to tell the truth as best he can.

What shall we say as to the proposition occasionally advanced as to the appointment of experts by the courts? This proposition has been repeatedly advanced by Dr. J. N. McCormack, of the American Medical Association, in his talks before the

"In this connection, the address on Great Dissenting Opinions, delivered by the Hon, Hampton L. Carson on August 22, 202 before the American Bar Association, will prove most interesting teaching.

county societies, and has only recently been affirmed by Dr. George W. Jacoby, of New York. To me it seems incontrovertible that the appointment of an official expert by the courts would be a very serious menace to justice. Who is to select the experts? It takes an expert to decide who are experts. Shall the judge, who is a layman in medical matters, make the decision, or shall it be a civil service appointment; if so, who are the experts to examine the experts? Again, it is a matter of common experience that public appointments soon become the play and spoil of politicians, and the danger would be that sooner or later the expert would be a person of the second rank or no rank at all. Finally, even if a man of high standing was appointed, that fundamental right which belongs to both plaintiff and defendant to call such witnesses as can give testimony concerning the matter at issue, would lead to the calling of additional experts by either side. The latter might be men of equal or even greater standing and prominence than the official expert, and notwithstanding would probably have their opinions outweighed, because the court's expert bore the stamp of official appointment. Dr. Jacoby proposes that the expert be especially trained at college; that this training terminate with a special State board examination, and that a special degree of "physician to the courts" should be bestowed. Dr. Jacoby knows full well that expertness cannot be acquired in any training given by any college, no matter what its curriculum. Dr. Jacoby knows as well as I that expertness in nervous and mental diseases is the result of the slow accretion of years. It demands years of close contact with large masses of clinical material, constant observation, and worldwide familiarity with the literature. Surely he will not maintain that such a condition can be brought about by a college curriculum, even if, as he proposes, this curriculum should be followed by clinical psychiatric work in a State hospital. In short, experts cannot be made, neither by the examination of a State board, nor by the fiat of the court.

Upon one point and one point only do I agree with my friend Dr. Jacoby, and that is as to the wisdom of committing, in doubtful mental cases, to State asylums for observation. The opportunities for the detailed study of a case would under such circumstances be greater and more satisfactory than can be obtained in a prison; as to the legal propriety of such an expedient I have no opinion. It is, further, the only expedient I would borrow from the Germans; for the rest I would be quite content with

English law.

In conclusion, I may repeat that I am quite convinced that the so called evils of expert testimony have been greatly exaggerated; that many that do exist can be properly attributed to the expert himself and not to the attorneys nor to the courts; and, finally, that the differences of opinion shown by experts do not constitute an evil properly speaking; if so we must equally, perforce, speak of the evils of the supreme court, an institution upon which depend the stability and permanence of the republic

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Loc. cit.

EXPERT TESTIMONY AND THE ALIENIST.

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It takes some courage to write on this subject at this time when the press, both medical and lay, have but so recently been surfeited with it, and I would not presume to do so did I not think that the general impression created by these writings has been wrong and that there was, after all, something still to be said on this much misunderstood topic.

The particular aspect of the situation which seems to me worthy of comment, because I believe it has failed absolutely of comprehension, is a somewhat remarkable one. While there has arisen on every side a wholesale condemnation of expert evidence in general and the expert witness in particular, and while much of the criticism has arisen from the medical profession itself, nevertheless that profession has nowhere found a champion, but, quite the contrary, appears by a supine acceptance to acknowledge the truth of the criticism against it without so much as a murmur in its own defense. Such an attitude must either have arisen out of a humility that smacks of cowardice or be the result of a complete lack of comprehension of the situation in the large.

Probably the explanation rests to some extent in both of these reasons. While humility is an element in cowardice to the extent that it is the very opposite of that spirit of aggressiveness and self assertiveness that goes with courage, it must not be lost sight of that it frequently is the surface attitude of an intense egotism that seeks thus an expression of self righteousness, and is the not infrequent tool of that well known mental state comprehensively but not elegantly expressed by the term "sour grapes." Professional jealousy is not unknown even among the doctors, and the specialist who is not "called" to give his opinion and to receive large fees therefor, can well afford to decry the lack of morale in his more fortunate brother. In fact, in so doing he is but obeying a physiological law, and, in the language of modern psychiatry, but developing a "defense reaction," so that he may spare himself the discomfort that comes from emotions that find no means of outlet. Less technically he "vents his spleen," thus relieving the tension, so that he may proceed with the day's work in a spirit of calm.

That a lack of adequate comprehension of the problems of expert testimony and criminal law is at the bottom of much of the controversy is shown by the nature of many of the remedies for the presumed evils of the system that are proposed by its critics. These remedies frequently show on entire lack of understanding of the fundamental principles of American criminal law, and are proposed with a nonchalance that shows plainly that the writers have no idea that to carry them out would involve a radical change in these principles. For example: The law supposes every man to be innocent until proved guilty, and this supposition continues until a verdict of guilty is actually rendered. The law also puts the burden of proof on the State—the accused must be proved guilty-beyond a reasonable doubt—he does not have to prove himself innocent, but is permitted to use every means to combat the contention of the State. What right then has a judge, for instance, as has been suggested, to say that only Dr. A., Dr. B., and Dr. C. shall testify for the defense, and not Dr. X., Dr. Y., or Dr. Z., when these latter may be reputable alienists, and after a survey of the situation are willing to take the stand for the defense. Would not such action be an arbitrary limitation of the rights of the accused?

This and many other similar principles would, however, never have come into question if it had not been for the attention which prominent trials have directed to the taking of expert testimony. Time and time again in trials involving the question of insanity the public have seen an equal number of equally prominent experts ranged on opposite sides, and have jumped to the conclusion that either the system was bad or the medical expert generally dishonest.

Now let me say right here, from a not very inconsiderable experience, for I have been associated with many trials and heard much expert testimony: I do not believe the expert on insanity to be essentially a corrupt or dishonest person-in fact, I know to the contrary, and consider the criticism that takes this standpoint a base libel on the profession which should be vigorously resented.

This attitude of the public has been largely fostered. I think I may say actually created, by the newspaper reports of trials. Such reports, even in the better class of dailies, are notoriously inaccurate and misleading, while in the type of so called "vellow journals" they not only deviate from the facts, but they are presented in a setting that makes it appeal to the emotions almost to the exclusion of the reason. The former class of papers, while they make a reasonable effort to print things as they really occur, must of necessity depend upon the more or less untrained, immature youth to report them, with the result that the facts are frequently distorted in their passage through this medium to the public. The latter class makes only so much pretense to fact as to avoid, as far as possible, actions for libel, and goes on the principle that they print what the public wants to read. Whatever the explantation the fact remains that the average reports of a murder trial, for example, I know from repeated experiences, give a most inadequate idea as to the real facts of the case and the points of contention, and yet such are the sources which influence opinion, both public and professional.

The reason why experts can be found for either side of a given case is because practically every case that goes into court has two sides, and experts, like other people, are of many minds, and it is naturally no more difficult to get experts who will testify on a given side than it is to get lay witnesses to do so, and yet we never hear a wholesale denunciation of the lay witnesses because they are not all on one side of a case. Each side hunts for an expert who will agree with their theory of the case, and they hunt until they find one. It never appears in evidence how many experts may have refused to testify before the desired one is finally discovered. I know from my own experience, however, that such refusals are far from being the rare exceptions that

some critics would have us believe.

This two sidedness of expert testimony is especially in evidence in will contests. In these cases the individual whose sanity is in question is dead, and the expert is called upon to answer a hypothetical question based upon the testimony usually of untrained lay witnesses. The isolated statements of these witnesses with reference to the savings and actions of the deceased form the basis of this ques-It is hardly too much to say that the isolated sayings and doings of any man, living or dead, taken out of their proper setting, might be put together to make for a diagnosis of either sanity or insanity, and that this is the case in will contests is no fault of the expert or of the lawyer either. Such material is naturally the only material to be had, and as a result a conclusion is difficult to reach. Under such circumstances it would be far more remarkable if men did not differ than that they do.

The mental capacity of a person long since dead is, of course, one of the most difficult problems the expert has to deal with, but the problem in the ordinary criminal trial is rarely simple, and often quite as hard. It must be remembered that the expert is called upon, as a rule, not to testify to the present mental state of the accused, but to his mental condition at the time of the alleged crime, which is usually several months past at least. It is true that he often has the assistance of being able to reason back from a knowledge of his present condition, but this is usually only true if he be an expert for the defense, as the defendant, acting within his rights, often refuses to be examined by the experts from the district attorney's office. When this is the case the expert has quite as difficult a problem as if the person whose mental condition was being in-

quired into was actually dead.

These are some of the fundamental difficulties in every case. In addition to these we must remember that the expert can never hear the other side of the case until it comes to trial, and perhaps then he may not be in court. If he is a very busy man he is apt not to be. In his consultations with the attorney he naturally hears an ex parte statement of the evidence. This must, of necessity, be, because the lawyer can know only in the most general way what points the opposition are going to bring out. This statement by the attorney has some force in moulding the expert's opinion, for be he ever so free from the ordinary frailties of man, he must be on his guard every instant if he is not to be influenced by a statement made with a vigor born of conviction.

Added to these are the difficulties incident to the evidence itself, both from the accused and the various witnesses. The expert is called upon to weigh with great nicety the evidence of numbers of people, some of whom, the accused in particular, are interested in the outcome of the case. He must try to size up all the individuals and give proper weight to the testimony of persons as to the sayings and actions of the accused, who, far from being trained observers, are often ignorant and unreliable to the last degree.

From all this material and under all these difficulties the expert is asked to decide—what? One of the most difficult problems in one of the most obscure departments of learning—the state of a given person's mind at a given time. Surely man is rarely called upon to answer a more difficult question. Can any one who will take pains to look into the situation wonder that the experts are not all of the same mind? Do lawyers and judges, for example, agree any better? Look at the number of decisions that are reversed on appeal, and when we get to that final arbiter of legal dispute, the Supreme Court of the United States, how many of its decisions are unanimous? It is a strange conceit on the part of certain members of the bar who criticise us for not all agreeing—or, as they put it, for being partisan.

The whole principle of the present day trial in court is the principle of conflict. The trial is literally a battle, the two sides being ranged against each other in battle array. Each side musters its forces, and the battle is to the stronger. This perhaps is not the conception that would please the idealist, but is it not as a matter of fact correct? And, after all, has it not the same sanction as the "struggle for existence" and the "survival of the fit" elsewhere?

The expert is accused of taking sides. How can he help it? Could a soldier sent to the front—on the firing line—remain neutral? He might fire into the air, but would he? The expert is in a similar position. From the moment the cross examination commences he is put on the defensive. He may perhaps fire in the air, but if he has the qualities of most men I am much mistaken if we do not find him fighting back before he leaves the stand.

Perhaps all these things are not as they should be, but they flow naturally as the results of the present system of criminal procedure and the makeup of human nature. For neither one is the expert responsible, either directy or indirectly, so why should the blame be all heaped upon him? I confess that I am at a loss for an adequate explanation except that it is a sort of "follow the leader" method of proceeding, it being easier to keep on abusing the doctor than it is to look around for some other cause for the imperfection.

Then there is that other bugbear, the legal test of insanity. This comes of the attempt on the part of the law to define insanity. A rather presumptous undertaking. The physician has taken the ground long since that a definition of insanity is impossible to frame, and about the only excuse ever offered for one is that it may be asked for on the witness stand.

The usual legal test is that the defendant should have known the nature and quality of the act and that it was wrong. The expert is thus put in the position of testifying as to the sanity or insanity of the defendant upon the basis of a test which can have practically no bearing on the question, especially as there is no effort made to define the word know, which, as used in this test, is the crux of the whole situation. The witness is in much the same position when asked to apply this test as if he were shown a red object and asked whether it were green or blue. By the law of error a given number of persons asked such a question would arrange themselves in equal numbers on the sides of the two

Here again the trouble is not with the expert, but with the methods of procedure of which he is forced to be a part and over which he has no control. Criticism of the expert, especially by the lawyer and judge, which has quite recently been indulged in, is practically inept and might well call for comment along the lines of the Biblical query of the mote and the beam.

The real absurdity of the knowledge test of insanity as applied in the courts can be well illustrated by such a case as this: Suppose a man laboring under the delusion that he is being poisoned. He has finally concluded that the efforts at poisoning can be traced to a certain individual. the influence of this belief he plans the assassination of this person, carrying out the crime with deliberation, waiting for his victim at some un-frequented spot, and striking him down at an opportune moment. Now let us suppose for the sake of argument that this man knew full well what he was doing (a supposition that might well be controverted, however), that he knew the act was wrong, and that it was prohibited by law. The essential and to me all important fact remains: the act was the direct product of a disorder of his mind. If he had not been insane he never would have been called upon to deal with his desire to avenge himself, so, whether he could or could not have resisted the act, the crime was committed as the direct result of his illness, and he should be dealt with solely from that standpoint.

The "right and wrong" test, or the test of knowledge as I have called it, like all other legal tests of insanity, should be erased from the statutes. Nothing is to be gained by an endeavor to create a better test—the day of reckoning will only by just so far be postponed. The fetich of the law, precedent, has already continued the present test far beyond the period of its usefulness. Years have gone by, the test has remained the same, but psychiatry has not meantime stood still. There has thus arisen that incubus of practice-the distinction between legal insanity and medical insanity. The "right and wrong test" has prevented the law long enough from adapting itself to the advances in the science of the mind. The only possible way to be always able to adapt itself is, not by creating new tests, which in turn will go through the same history of uselessness as the present one, but by abolishing tests altogether, leaving the way always open for a free acceptance of the results of progress.

The whole scheme, to my mind, of having a jury pass upon a highly technical matter such as insanity is somewhat ridiculous. The jury can at best only make up its mind as a result of the general impression created by the alienists, while the court itself is only too often not only entirely ignorant of the subject, but quite inexperienced.

The court, too, is not infrequently responsible for some of the discredit that has fallen upon expert testimony by the practice of permitting to testify practically any one presented as an expert by either side. The principle enunciated has been that the jury, being acquainted with the witness's qualifications, could take the evidence for what it was worth. I have recently heard a physician testify under this ruling, who, in a practice of some years, had treated only three insane persons.

The trouble is the jury, even after being acquainted with the qualifications of the witness, are not

themselves qualified either by education or experience to judge of his merits. Medical questions are best dealt with by medical men, and it would seem that questions of insanity should be finally passed on by physicians without having their opinions subject to review by juries.

The fundamental defect of the criminal law is that it so often deals with the crime and not with the criminal. For example: A boy snatches a pocketbook without knowing what its contents are. If the book contained less than thirty-five dollars he could only be imprisoned for a period not to exceed one year, while if it contained more than thirty-five dollars he might be imprisoned for as much as ten years, but not less than one year. This despite the fact that in the first instance the thief might be an old offender, a seasoned criminal, a chronic menace to the peace of the community, while in the latter case the offense might be the first committed by a person readily amenable to reform. In any case, the character of the crme as thus set forth in this example is purely arbitrary, and the thief could only be considered constructively to have intended it.

The effort to arbitrarily distinguish crimes as petit larceny and grand larceny, as in example given above, for instance, will always lead to an arbitrary, and to a no inconsiderable degree, unjust administration of justice. Whether a particular individual ever comes within the purview of the criminal law is largely a matter of accident and depends to no small extent upon the ingenuity of the offender. Now, while the object of the criminal law is, or should be, the protection of society, the important question to be solved is not whether the offender stole thirty-four or thirty-six dollars, and is therefore to be indicted for petit or grand larceny respectively, but, What manner of man is he?

In order to answer this question it is necessary to make an analysis of the individual, and the causes leading up to his offense. Only after this is done can a reasonable conclusion be reached as to whether the offender is best treated as a menace to society and put in prison, whether he is a proper subject for reformatory efforts, or whether he might better be paroled with a suspended sentence.

We, as physicians, do not always prescribe the same drug in the same dose for a given disease, no matter in whom it may occur, vigorous youth or decrepit old man. We treat the patient, not the disease, and so in criminology we will never make any further progress under the system of dealing with the crime in the abstract, we must learn to treat the criminal.

In order to divorce criminal procedure from the practice of dealing with the crime instead of the criminal, the assistance of experts in mental disorders and in criminology must be sought, and I believe it is the duty of the State to furnish this assistance, so that it may discharge its responsibilities both to society and the criminal intelligently. This assistance can hardly be expected from the jury or from the overworked court; it must come from a special body of men whose business it is to furnish it.

These preliminary considerations lead logically and. I think inevitably, to the conclusion that the function of the jury should end with establishing the

fact that an offense has been committed by the accused. This fact being established should give the State authority over the person of the offender, and he should be taken into custody, dealt with according to the sort of person he is, and not turned back into the community until he may be with safety, and such action should be as little as possible dependent upon the degree of crime as now defined.

Given then an individual, the jury determines that he has in fact committed an antisocial act. He is then remanded to a court or committee or whatever else it may be advisable to call it, who make a full report to the trial judge upon the character of the offender with recommendations for treatment, such recommendations, so that the amenities may be preserved, to be advisory and not controlling. On the basis of this report the judge pronounces sentence.

Reduced to its simplest terms the whole situation is just this: An individual commits an antisocial act. By so doing the State assumes control of his person and liberty. It does this primarily because it has a right to protect itself from his depredations. Having done so and protected itself, however, it has a further duty both to the individual and to the community. It must endeavor to restore the offender to useful citizenship if that is possible. In other words, it must prescribe a form of treatment suitable to his ailment. In order to do this his case must be diagnosticated. All this is clearly the duty of the State.

Society has too long dealt with crime, either from the standpoint of revenge—the principle of "an eye for an eye, a tooth for a tooth," is the principle upon which our criminal code is built and which controls much of its application even to-day—or from the standpoint of a disagreeable affair with which the easiest way is the best, and so it locks up the culprit, turns its back upon him, and tries to forget all about it.

The time has passed for either one of these attitudes. Revenge may be sweet, but it is usually a pretty expensive indulgence. Crime is a social phenomenon and demands attention if for no other than economic reasons. It is distinctly an unwise policy that continues a system which actually makes criminals. What else can be expected when a young boy for his first offense is ruthlessly shut up in prison to associate exclusively for months with a collection of the worst and most incorrigible offenders? It is a distinct duty, pointed to by actual dollars and cents economy, to keep men out of prison, or if they get in to restore them to independence at the earliest possible date. These results will never take place until we learn to deal with the criminal and not the crime.

This would seem to be the rational method for the State to pursue. How can it best be accomplished? If insanity is the defense the defendant should be sent to the nearest State hospital for the insane. Surely if a person is insane the place for him is in an institution for the insane and not in a jail. Not only this, but only under the close observation possible in a hospital can the best results as to the diagnosis of the condition be expected.

This method of procedure I believe would be a good one, even if the conclusions of the State hospital authorities were not considered final, but mere-

ly introduced in evidence to be combated like other evidence. Under such circumstances they would easily have a preponderating influence as coming from an entirely unbiased quarter, as has recently been well illustrated in St. Louis.

This sending of the patient to a State hospital for a report on his condition may be delayed until the jury has returned a verdict if thought best to preserve the rights of the accused. Sentence will be passed, or from our viewpoint, a line of treatment prescribed, only after a diagnosis has been reached.

In order that the State hospitals may be able to meet this class of problems, I believe each one should have specially constructed quarters, or, better, a special group for the observation, care, and treatment of this class of cases. A special detached group would probably be warranted in all the larger State hospitals, for in this group would naturally be cared for, in addition to the "court cases," the several vicious characters of the insane population, of which each institution always has a number.

This grouping of the noncriminal with the criminal insane may be objected to by some. It is, however, an entirely reasonable procedure when it is considered that we are dealing with the individual in each instance and not the isolated result of some one of his acts. Whether a given person comes within the purview of the criminal law or not is often purely a matter of accident. The point to be considered solely is the character of the person he is, and if he has manifest criminal and vicious tendencies he should be separated from the general population of the hospital and treated and cared for with his like.

These are lines along which, in my opinion, we may look for betterment of present conditions. There are already plenty of well recognized principles of criminology which have yet to be adopted in many communities. A parole system and the indeterminate sentence are among the most important. While such defects exist, the way to the correction of which is so clear, it would be far better if all would put their shoulder to the task of trying to accomplish something of the sort rather than indulging in wholesale denunciations. The man of action cannot stop on the road of progress and argue to its bitter end every difference of opinion. There are things to be done. Let us do them.

With the subject of this paper in mind there is one thing that President Roosevelt has done which is most pregnant with possibilities. I refer to his organization of the House of Governors. are many questions which are not affected by State boundaries. Murder is the same on the Pacific coast as it is in the Gulf States, and should be dealt with in the same way. There should be no reason why enlightened legislation which has been found of advantage in one State should not be adopted by all, and the House of Governors forms an ideal clearing house and administrative system for securing these benefits. Let us hope to see the governors of the several States meeting together each year, like our National Medical Socities do, and discussing such problems as the revision and unification of the criminal code. France remodeled its code Napoleon. Germany had its experts at work for years on its criminal code. Surely we should begin to

think of approaching the problem in a broad and comprehensive way. The Federal Government has created a Statutory Revision Committee; let us hope it will point the way in its recommendations regarding the criminal law.

INTRAPELVIC VERSUS ABDOMINAL METHOD
OF DEALING WITH MECHANICAL OBSTRUCTION TO DELIVERY IN
CASES OF CONFINEMENT.

By Egbert H. Grandin, M. D., New York,

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Mechanical obstruction to delivery may be offered: 1, By the pelvis; 2, by tumors in the lower uterine segment or of the vagina; 3, by the presenting fœtal part; and 4, by the cervix of the uterus.

I take it that for the purpose of this discussion, description of operative technique is uncalled for, and that we are viewing the woman only at the stage when induced labor with viable child still

enters as a factor.

1. Mechanical Obstruction due to the Pelvis .- I shall eliminate from this discussion at once instances of absolute pelvic contraction. Here, from the very nature of the problem, the suprapubic method alone enters into the question unless embryotomy be elected. In lesser degrees of contraction, of no matter which type, induced labor should be the operation of election. The rule I have laid down for myself is a simple one: Just as long as under suprapubic pressure the presenting part can be made to accommodate itself to the pelvic brim, just so long may we refrain from interference. When accommodation begins to fail, then, after one or another fashion, labor should be induced, irrespective of the fact that prematurity of the child is against its survival. This rule is for me an absolute one, unless the parents elect a major operation at term. Where the case is not seen until the time for the rational induction of premature labor has passed, that is to say, the presenting part cannot be made to enter the pelvic brim, the choice lies between forceps, version, and the abdominal Cæsarean section. There are here a number of factors which control our choice of method. Ideally the Cæsarean section, before the onset of labor or just after, should be elected. Such election, however, in private practice, is alone possible where the consent of the man and the woman is secured. The glamour surrounding the statistical data offered by individual operators should not blind us to the fact that all women cannot control the services of the expert. My rule is, if the Cæsarean section is declined, to calmly await the advent of labor, and, when the proper conditions are present, to perform an elective version. My experience has taught me that when, under the natural efforts, the presenting head does not engage, it is safer for the maternal parts and less dangerous to feetal life to deliver by the more readily moldable after coming head than to drag the before coming head through by forceps.

And this leads me to state, in brief, my views in reference to this instrument. High forceps, that is to say, where the fœtal head is not engaged, I look upon as one of the major obstetric operations. I say this even though, with the aid of the only type of forceps I admit under this condition—the axistraction-I have been enabled, by means of careful and protracted intermittent traction, to deliver without extreme injury to the maternal parts. Where the head has engaged by its greater segment, a condition which I am not considering now, we cannot longer speak of as high forceps. This is median forceps, an entirely different proposition. The version having been accomplished, where delivery fails. if the fœtus is still alive and consent of the parents is secured, I find a field for symphysiotomy, since the alternative is embryotomy. Even so, basiotripsy of the after coming head carries less risk of injury to the woman than perforation of the before coming head unengaged at the brim. Hebosteotomy, in view of the lesions suffered by the woman-and all who have read recent American literature will agree with me that they are little short of damnable-I unhesitatingly reject. Where the presenting part of the fœtus is other than the head, considerations offer which will best be noted under the subdivision relating to the fœtus. Under the present subdivision neither the Dührssen operation nor the vaginal Cæsarean section claim consideration.

2. Mechanical Obstruction Due to Tumors in the Lower Uterine Segment or Occluding the Vagina. -This phase I shall not dwell upon in extenso, since the time limit imposed on the discussion does not permit. Broadly, it holds that tumors of the vagina and tumors of the cervix and impacted degenerated growths should be removed by the vagina and then the condition of the pregnant uterus and its contents should be met according to the indication. Tumors of the lower uterine segment admit of but one course, and this the abdominal route, and hysterectomy or enucleation with Cæsarean section according to indication. Pelvic tumors, solid or fluid, not degenerated, call for abdominal section, removal, and the Cæsarean section. These general rules will not suffer modification, whether the pelvis or the fœtus offer abnormality or not. The rules applicable to such abnormalities, irrespective of the

presence of tumor, are to be enforced.

3. Mechanical Obstruction Due to the Fætus .-Here we face the problem which carries greatest difficulty in solution, for the simple reason that where the presentation is normal we are not in a position of estimating with accuracy the size of the head, and, further still, in fat women, the position. Very commonly careful pelvic mensuration and internal manual examination simply lull us to sleep, for at labor we find that, although the pelvis is normal, the presenting part is the reverse. I have stated before my preference for version and my objections to high forceps, and as regards the latter, I wish to further say that, whenever, under the influence of well directed uterine efforts, the head does not engage. I am opposed to tentative forceps traction. They teach us nothing more than Nature has already taught us. Where the conditions for version are failing-that is to say, head above the brim or slightly engaged and movable and mem-

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branes unruptured-in preference to forced version I would advise symphysiotomy. Let me repeat that here again I repudiate hebosteotomy. In the event of the pelvis being abnormal, with complicating excess in size of the fœtal head, when satisfied that the mechanical problem is such that this head cannot enter the brim, the consent of husband and wife should be secured and an abdominal Cæsarean section performed, the child, of course, being viable and alive, and the physical condition of the woman not contraindicating. In these instances, obviously, neither the Dührssen operation nor the vaginal Cæsarean section enter as factors. Where the presentation is other than the head, and the dystocia is simply due to the malpresentation, the ordinary rules of obstetric procedure apply. Where, in addition to the malpresentation, there exists pelvic contraction, our choice of method for delivery should be again the abdominal Cæsarean section, other things being equal.

Under this heading, as under the previous, I have refrained from dwelling upon types of deformity, and entering into consideration of pelvis measurements, since the time limit only permits of the

expression of general deductions.

4. Mechanical Obstruction Depending upon the Cervix.—Here we approach a phase where opinions are greatly divided and where such differences are to be expected. The conditions calling for interference and at times demanding rapid delivery are the toxemias, and, broadly speaking, the hemorrhages. It is not so much a question of fœtus and woman as it oftentimes is of woman alone. Primarily neither forceps nor version enter into the question, nor, as I shall contend, is it a question of the abdominal Cæsarean section, except we are also facing a decided grade of pelvic contraction, the time suitable for the induction of premature labor for the sake of the child having passed. We have reached the phase of the proposition where the Dührssen operation and the vaginal Cæsarean section enter the field.

First, as regards the toxæmias. Under this generic term I include the morbid phenomena emanating from kidney, liver, intestinal canal, and, hypothetically, the fœtus. The type of operation selected will not depend so much on the variety of toxæmia uppermost as on the degree and the imminence of fatal symptoms. I take it that we are all fairly well in accord that, when the time for surgery comes, the kind demanded is that which will enable us to empty the uterus of fœtus within as short a time as is possible, paying due regard to the integrity of the maternal parts. I take it also that we are all agreed that the tendency of the average man is to wait too long before resorting to interference. These premises being granted, let us look at this topic from the standpoints of impending risk to the woman, and sudden, present risk. Where clinical tests teach us that the toxæmia is deepening, as a rule there is sufficient time limit to enable us to dispense with either the Dührssen operation or the vaginal Cæsarean section. Here the mechanically obstructing cervix requires simply the attention I have been harping upon most of my professional life-gauze packing to cause it to soften and to

merge into the lower uterine segment, followed by manual dilatation and delivery. At any time after merging of the cervix, where greater rapidity of operating is demanded than the hand yields, the Dührssen operation finds its legitimate field.

Where, on the contrary, the toxic symptoms are of high grade, then the vaginal Cæsarean section enters most beneficently. I cannot conceive, in the absence of pelvic contraction sufficient to rule out these pelvic procedures, of the abdominal Cæsarean section ever being justifiable in face of the toxæmias.

Next as regards the hæmorrhages complicated by dystocia due to the cervix. Concealed hæmorrhage, as soon as diagnosis is reached, calls for immediate emptying of the uterus. Here, then, when the vaginal portion of the cervix has disappeared, the Dührssen operation offers, otherwise a rapid vaginal Cæsarean section. Slower methods will not answer, since the woman's life is at stake.

The hæmorrhage of placenta prævia may be viewed more philosophically. Where high grade pelvic contraction does not complicate, I cannot grant that the abdominal Cæsarean section is ever allowable. When the time element permits I still plead for gauze packing, to secure softening and merging of the cervix, followed by manual dilatation and delivery. Rarely, very rarely, in my experience, will the case offer such urgency as to demand other procedure. The vaginal portion of the cervix having disappeared, a rigid lower segment may demand the Dührssen incisions. As regards the vaginal Cæsarean section, I can simply state that I have never seen a case of placenta prævia where it was indicated. In any event I should look upon this as a very desperate procedure except in case of marginal insertion, and here the hæmorrhage is never so profuse or the life of the subject in such danger as to demand it. It should be borne in mind that in case of central insertion, profuse hæmorrhage carries well nigh absolute fatality for the fœtus, and that, therefore, the interests of the woman need alone, as a rule, be taken into account.

It will be noted that I reject, for the present, hebosteotomy as an alternate operation. I would state that my position is based on the American statistics, since I much prefer to judge an operation from home data, knowing the calibre of home operators. From this standpoint, I cannot concede that the statistics are as favorable as those offered for symphysiotomy by men of similar calibre. Taking expert American operators, the later operation never yielded the untoward sequelæ which, up to date, the former has. 'For proof of this assertion I need only refer you to the paper presented to this society at its meeting in 1907 by Henry D. Fry. Neither of these operations can become elective, and when a narow outlet is the cause of the dystocia, the child being alive, judged by their fruits, symphysectomy must be preferred to hebosteotomy

Such briefly are the opinions which I hold for the purpose of this discussion. Some are elementary and well established, others are open to criticism by those with different, probably equally well founded experience. There are certain general deductions I wish specifically to establish: First, I am in hearty accord with the modern tendency of

widening the sphere of the elective Cæsarean section; second, I do not believe that either symphysiotomy or hebosteotomy can ever be made operations of election, and that, when either is demanded, the first should be given the preference; third, as I view an experience of nearly thirty years, I am glad Nature may now rarely cause me to destroy the living child.

116 WEST SEVENTY-SIXTH STREET.

DIES CANICULARES.

"Dog Days": "The Physitians Vacation." By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A., Etc., Dublin, Ireland.

(Continued from page 155.)

The yearly recurrence of the tidal flow and ebb of the waters of the silent and mysterious Nile was one of the most interesting, physically, as it assuredly was the most important, economically, known to the cultivators of the land from which Greece and Rome originally derived the principal items of their germinal mythology. And of the explanations of its occurrence which had been collected or invented by the more noted Grecian sages, Plutarch has tabulated a series which will, I believe, be found to contain almost all the items reproduced since his time-even down to the date of the publication of the blue jacketed volumes inspired by the construction of the Assouan dam:

Thales thinketh that the anniversary winds called Etesiæ blowing directly against Egypt, cause the water of Nilus to swell; for that the sea being driven by these winds, entreth within the mouth of the said river, and hindereth it, that it cannot discharge it selfe freely into the

sea, but is repulsed backward.

Euthymenes of Marseils, supposeth that this river is filled with the water of the Ocean, and the great sea lying without the continent, which he imagineth to be fresh and

Anaxagoras saith that this hapneth by the snow in Æthiopia, which melteth in summer, and is congealed and

frozen in winter.

Democritus is of opinion, that it is long of the snow in the north parts, which about the Æstival Solstice and return of the Sun, being dissolved and dilated breedeth vapors, and of them be engendred clouds, which being driven by the Etesian winds into Æthiopia and Egypt toward the south, cause great and violent rains, wherewith both lakes, and the river also Nilus be filled.

Herodotus the Historian writeth, that this river hath as much water from his sources and springs, in winter as in summer; but to us it seemeth lesse in winter, because the Sun being then neer unto Egypt, causeth the said water to

evaporate

Euphorus the Historiographer reporteth, that all Egypt doth resolve and run as it were wholly into sweat in sum-mer time: whereunto Arabia and Libya do confer, and contribute also their waters, for that the earth there is light

and sandy.

Eudoxus saith that the Priests of Egypt assign the cause hereof to the great rains and the Antiperistasis, or contrary accurse of seasons; for that when it is summer with us, who inhabit within the Zone toward the Summer Tropick, it is Winter with those who dwell in the opposite Zone under the Winter Tropick, whereupon (saith he) proceedeth this great inundation of waters, breaking door, until the trace Volta

The river below and the star above were almost correspondingly inspiring and productive-in the genesis of philosophic opinion, and stimulation to speculative research. The solstitial approach of

Sirius in the mouth of the watch dog vied in the dignity and importance of the significance of its ascent with the midnight appearance of Vindemiatrix in the left elbow of the headless virgin, on the horizon at the winter "sunstead" of six months later. One announced the coming recreation of the country's soil and vegetation by the swell of the heaven sent stream of the Nile; the other heralded the rebirth and resurection, from the dark abysm of the nether (or other) world, of sol invictus himself, the creator and preserver of all forms of life. And well was it said by the "wisest [and by no means the "meanest"] of mankind" that a little learning disposeth a man to atheism, but a continued penetration into the depths of the same tends to bring him back to the preserving sheepfold of religious belief. The scoffing "modern" materialist, superficially educated as he nearly always is, would act well towards himself, as well as benevolently to all his possible hearers and readers, in suppressing the disposition to formulate his personal inspiration of the syllabus followed out by the supreme power in the construction of the universe and the gradual revelation of its mysteries to man. If he persists in his inquiring research he will find pretty surely that all his best thoughts have been long ago expressed by others, and that all the queries and doubts of the philosophers of all the countries were thoroughly tested and assimilated or rejected, according to their respective merits, by the founders and builders of the Christian Church.

In the seventeenth century, that era of boasted scientific illumination and progressive intellectual emancipation, there appeared from the pen of Petrus Servius ("Spoletinus, in Gymnasio Rom. Medicinæ Theor. Ord. Professoris P.") a booklet bearing the superscription: Dissertatio de Unguento Armario et Sympathico vulgo Apellato; sive de Naturæ Artisque Miraculis. And one of the included problems of nature miracula, to be there found tabulated by the critical author, is thus enunciated:

Quid mirabilius Nyli terra, quæ exiccata illa quidem ac diligenter asservata, eodem semper pondere gravis est; ad xvii vero diem Junii nullius rei accessione, se ipsa pon-

The irresistible affinity of the Nile mud for moisture, which thus developed at the approach of the æstival solstice, would almost seem sufficient, in the mind of this querist, to account for the seasonal swell of the stream from that of the bank or bed of which it was derived!

We may probably regard the pages of Caius Plinius Secundus as the most faithful reflection of the curiously chaotic condition of physical knowledge in his time; with its hopeless entanglement of natural history and divinity, of meteorology and metaphysics, of mythology and mendacity and credulity. And there we find this account of the annual inundation of the Egyptian "father of waters":

Many and divers causes of this rising and increase of his, men haue giuen; but those which carry the most probabilitie, are either the rebounding of the water, driven back by the winds Etesiæ, at that time blowing against it, and driving the sea withal vpon the mouths of Nilus; or else the Summer rain in Æthiopia by reason that the same Etesiæ bring clouds thither from other parts of the world. *Timeus* the Mathematician, alledged an hidden reason thereof, to wit, that the head and source of Nilus is named Phyala, and the river it selfe is hidden, as it were drowned within certain secret trenches within the ground, breathing forth vapors out of reeking rocks, where it thus lieth in secret. But so some as the sume during those daies, commeth neere, drawne vp it is by force of heate, and so all the while he hangeth aloft, ouerfloweth; and then againe for feare he should be wholly deuoured and consumed, putteth in his head againe, and lieth hid. And this happeneth from the rising of the dog starre Sicinus, in the Sunnes entrance into Leo, while the planet standeth plumbe ouer the fountaine aforesaid: for as much as in that climate there are no shadows to be seene. Many againe were of a different opinion, that a riuer floweth more abundantly, when the Sunne is departed toward the North pole, which happeneth in Cancer and Leo: and therefore at that time is not so easily dried: but when he is returned once againe back toward Capricorn and the South Pole, it is drunke vp, and therefore floweth more sparely. But if according to Timeus a man would thinke it possible that the water should be drawne vp, the want of shadowes during those daies, and in those quarters, continueth still without end. For the riuer begins to rise and swell at the next change of the Moone after the Sun-steed, by little and little gently, so long as he passeth through the signe Cancer, but most abundantly when he is in Leo. And when he is entred Virgo, he falleth and settleth low againe, in the same measure as he rose before. And is cleane brought within his bankes in Libra, which is, as Herodotus thinketh, by the hundreth day.

The periodic wobble of the terrestrial axis, which accounts for the genesis of the cosmic phenomenon of the precession of the equinoxes, accounts, of course, for the continuous change of the zodiacal relationship of the onset of the annual inundation of the Nile. But there is no doubt that in the twilight period of the early astronomy which has been definitely reflected down to our twentieth century vision the heraldic sign of the Nile flow was Leo. The primogenital importance and significance of the symbolic standard of the tribe of Judah must have been early impressed on the Hebrew lawgiver-even long before the vision of the burning bush. And Gentile poets found plenary inspiration in the linking of phenomena associated with the relationship of Sol and Leo in the heavens above with Nilus and its waters on the earth beneath. Thus Aratus:

> Πελίου τα πρώτα συνευχομένου λέοντι Τέμος και κελάθοντες έτησίαι εύρει πόντφ Άθρου έμπίπτουσι.

-making the dog star, the etesian winds, and the Nile tide all to appear with the entrance of the sun into Leo. And the hieroglyphic and philosophic hierarchy, whose nation depended for existence on this annual inundation, made their terrestrial fountains to spout from symbolic lions' mouths-thus continuously presenting a terrestrial memento of the celestial source of that most precious gift or heaven to earth. How blissfully unconscious is the "cabby" of our own St. Stephen's Green, as he waters his thirsty steed at the memorial fountain which decorates its northern margin, or the parched street Arab who refreshes himself from one of its chained up chalices, of what an enormous mass of fable and fact has in the course of the world's history collected, or been deposited, around the nucleus originally furnished by the apparently meaningless lion's head, from the open mouth of which gushes the stream of refreshing liquid!

So inseparably associated were Sirius and Nilus in their respective annual ascents, that the very aspect of the star on the occasion of its first appearance distinctly foreshadowed the degree of the swell of the fertilizing stream, and the consequent pro-

portion of plenty and prosperity which might be expected in the land of Egypt during the ensuing year. As the very learned Salmasius puts it: "Inde et veteres Ægyptii considerabant ortum sirii, ut ex ejus figura conjectarent, an bene sperandum esset de ascensu Nili, qui utique subsequebatur." The unique interest and importance of the yearly Nile tide figured so prominently in the atmosphere of philosophic thought, that Lucretius could not consider his metrical exposition of the Epicurean philosophy complete without discussing the unique phenomenon, in his closing book:

Nilus in æstatem crescit, campisque redundat, Unicus in terris Ægypti totius amnis: Is rigat Ægyptum medium per sæpe calorem;

Flumine, quæ gelidis ab stellis axis aguntur:

And as the soil of Egypt was actually the yearly donation, we can hardly wonder at the Egyptian idea that our planet came into existence with the rising of the dog star: "Ideo et natalum mundi Ægyptii sacerdotes eo die constituisse videntur, quo Sirius oriebatur, quia ut plurimum tunc Nilus crescere incipiebat, cujus àvastacent felicitas illius terræ constabat." And the twentieth century reader may be reminded, as he glances with amused contempt at those childish conceptions of a remote people in a remote age, that the physical portion at least of the chain of reasoning which led to the selection of that Egyptian date of the creation may bear favorable comparison with Lightfoot's famous demonstration from the Biblical text that "heaven and earth, centre and circumference, were created together, in the same instant, and clouds full of water"; and his chronological proof that "this work took place and man was created by the Trinity on the twenty-third of October, 4004 B. C., at nine o'clock in the morning." [The profound attainments of Dr. John Lightfoot (1602-1675) in rabbinical lore and in the languages of the Divine books were universally recognized in his generation, and the great English University of Cambridge was proud to choose him for its Vice-Chancellor.] After noticing this interesting item in the advancement of human knowledge in general, and of cosmic chronology in particular, we may probably incline to regard from a more liberally critical standpoint, the Egyptian date of the starting of the mundane machine on its perennial race, as mentioned by the same Salmasius:

"Inter tertium decimum et undecimum vult natalem mundi fuisse juxta Ægyptiorum sententiam,

hoc est, duodecimo kalendas Augusti."

As a well defined quadrantal division of the annual cosmic orbit was distinctly indicated by the

nual cosmic orbit was distinctly indicated by the four cardinal points of the yearly cycle—two solstitial and two equinoctial—the chronological cosmogonist pretty surely took his original starting post at a position closely related to one of these. And as the choice of one doctrinaire has evermore excited the diametric opposition of another, and the shunting side thrust of a third cogitator who wished to catch the collective mental eye of the same audience, the inevitable result has been that an intellectual fortress has been raised in the vicinity of each of these four temporal landmarks, for the avowed purpose of defending its unique claim to primary position in relation to cosmic time. Egyptian

thought and attainment germinated on the soil of Greece. Imperial Rome conquered and altered.

Αιγοπτίους δε άργη έτους σύχ υδραχόσο ώς Ρωμαιους, άκλα χάρχινος. Πρός γαρ τοῦ χαρίνου η σούθες ην χονός άστερα ο "Εκκηνές φάσι. Νουμήνια δε όντοις η σούθεως άνατοκη γενέσεως χατάρχουσα της εις τον χάσμον.

At that remote point in the orbit of the equinoxial procession at which the foundations of early Egyptian cosmogony and theology were so firmly laid, the dog star manifested a solstitial relationship—in concert with the zodiacal sign of cancer, and the recreation of that part of the earth's surface by the spreading flow of the annual Nile tide. The Roman theologian from an environment of inspiration so widely different, placed his first day of terrestrial time directly after the date of the annual rebirth and resurrection on high of the triumphant sol invictus, whose creative and regenerative powers were indisputable, and whose three days' sojourn in the darkness of Adyr he had just before been mourning. Then we find the Venerable Bede in the eighth century, and Vincent of Beauvais in the thirteenth, enunciating (and proving) the fact that the world must have been created in spring. And so around the Solar cycle!

The multitudinous testimonies to the fructifying, and even creative, power of the waters of the Nile receive further curious corroboration from the ever encyclopædic Pliny, in his chapter of Prodigious and Monstrous Births:

That women may bring forth three at one birth appeares euidently by the example of the three twins Horatii and Curiatii. But to go aboue that number is reputed and commonly spoken to be monstrous, and to portend some mishap: but only in Egypt, where women are more than ordinary fruitfull, by drinking of Nilus water, which is supposed to help generation. Of late yeres, and no longer since than in the later end of the reigne of Aug. Casar, at Ostia there was a woman (a Commoners wife) deliuered at one birth of two boies & as many girles, but this was a most prodigious token, and portended no doubt the famine that ensued soone after. In Peloponnesus there is found one woman that brought forth at foure births 20 Children, and the greater part of them all did well and liued. Trogus saith, that in Egypt it is an ordinarie thing for a woman to have seuen at a birth. It falleth out moreuer, that there come into the world children of both sexes, whom we call Hermophrodites. In old time they were knowne by the name of Androgyni, and reputed then for prodigious wonders, how socuer now men take delight and pleasure in them.

And thus were the supernatural powers of the "heavenly gift" of the Nile stream made manifest on earth among the human dwellers on its banks, by its genial promotion of their reproductive capabilities!

The brilliant monarch of the fixed stars had, as an obvious necessity of its associations—with light, with heat, and with moisture—a triplex influence on all important matters mundane. The brilliancy of its light was, unquestionably, unrivalled in the starry firmament; its solstitial connection gave it a fixed attachment to elementary heat; while its uniquely peculiar association with the annual tide of the Egyptian "father of waters" was conclusively demonstrative of its relationship to the fructifying element of moisture. With such physical (as well as celestial) associations, it must necessarily be endowed with a very large proportion of directive power in the general management of the physical

condition of the human body—and also of the control of the efficacy of remedies thereunto applied in the practice of the healing art. Every influence which was situated on the circumference of a cosmic sphere necessarily exerted a certain proportion of the same on the central microsmic unit, man; and such celestial influences upon objects terrestrial were added or subtracted according to conjunction or opposition.

Pythagoras by Musical proportion calleth that a Tone, by how much the Moon is distant from the Earth: from the Moon to Mercury the half of that space, and from Mercury to Venus almost as much: from Venus to the Sun sequiple: from the Sun to Mars a Tone, that is as far as the Moon is from the Earth: from Mars to Jupiter half, and from Jupiter to Saturn half, and thence to the Zodiack sesquible: thus there are made seven Tones, which they call a Diapason harmony, that is an universal concent: In which Saturn moves in the Dorick mood, Jupiter in the Phyrgian, and in the rest the like. Those sounds which the seven Planets, and the Sphere of fixed Stars, and that which is above us, termed by them Antichthon, make, Pythagoras affirmed to be the Nine Muses: but the composition, and symphony, and as it were connexion of them all, whereof as being eternal and unbegotten, each is a part and portion, he named Mnemosyne.

Such is Stanley's version of the paragraphs of Pliny and Porphyry. And so we still have Apollo (sun, sun-god, savior, destroyer, healer, musician) conducting the diurnal concert of the music of the spheres. And to the naked-eve observation of even the uneducated and unknowing still reappears perennially the same vision which is portrayed in the divinely inspired descriptions of the prophecy of Ezekiel and the Apocalypse of the latest of the Evangelists: the four "royal" stars that form the cardinal pillars on which rests the celestial firmament, the symbols of the respective constellations of which (Aquarius, Leo, Taurus, and Aquila) have been so appropriately adopted by Christian theologians and artists, as the heraldic emblems of the several authors of the four Gospels which contain the divine revelation of the new covenant of the ruler of Heaven above with his subjects on the earth beneath.

As the heliacal manifestation of the existence of the dog star above the Egyptian horizon always proved the reliable herald of the approach of the hottest season of the northern hemisphere, as well as of the life preserving periodic inundation of the Nile, the same stellar messenger became unavoidably associated in the popular mind with the highest range of annual cosmic temperature; and hence the application thereunto of the adhesive epithet of "dog days." The logic of the many headed would appear to have been always the same-in every race and nation, and at every period of the world's history. And, in strict conformity with its suggestions in this connection, we have the mediæval record of the formation of Goodwin Sands by the geological influence of Tenterden steeple; of the origin of syphilis from a certain planetary conjunction, of specially malignant influence on human health and vigor, which happened in the year of grace 1483; of the cause and effect relationship of certain memorable eclipses and earthquakes, of comets and political revolutions, of volcanic eruptions and epidemics, of sunspots and cyclones, of microbes and contagious

What was the efficient agent which called canine

rabies and human hydrophobia into existence so much more readily at the period of the presiding influence of the celectial canicula? was a question with which was associated a degree of absorbing interest that produced (or created, or inspired) various attempts at solution even in those remote classical and preclassical centuries which so long preceded the discovery of the sublime truths of bacteriological pathology, and the consequential invention of antirabic serum and the edification of Pasteurian institutions. The generally received fact of the actual association of dog madness with the annual recurrence of dog days has-in the usual course of things -been often contradicted. Ulisse Aldrovandi, whose tercentenary was so joyously and graciously celebrated last year in his own well beloved University of Bologna, collected more natural history lore, on this as on all other available subjects of interest, than did anybody else of whom I have heard or readwith the possible exception of King Solomon him-And that enthusiastic explorer of the secrets of the cosmos admits the greater frequency of canine madness at this season: "Non negamus quidem diebus præsertim canicularibus, canes rabie agitari" —but explained the fact by the nutritional influence of the putrid flesh (and varied filth) and the contaminated water, of which dogs were so much more frequently obliged to partake at this season. He refers to the popular idea, which would seem to have been widely distributed, of the origin of canine madness from the imbibition of the menstrual blood of the human female, but does so in a tone of depreciation; and refers, in its disfavor, to the morbidly instructive report of the observation and experience of Matthiolus, the father of modern therapeutics: "Cum ipse noverit mulieres, quæ non alia de causa catellos Meliteos domi alebant, quam vt dum mensibus laborarent, ea excrementa lingerent, quæ concreta pudendis partibus inhærebant, quos canes cunnilingos vocant, nec tamen, ob hanc causam, aliquo rabiei periculo agitati sunt." Such was the function of the Roman lady's "lapdog" in the age of the Renaissance; quite reminiscent, indeed, of the moral hygiene and special sexual practices of the corresponding personalities of the days of Martial! And the very copious therapeutic armamentarium of the elder Pliny includes some items and explanatory suggestions in connection with the use thereof, which prove the prevalence of this idea of the ætiology of canine madness in that author's day. In one place he informs the reader that:

Lais and Salpe, two notable strumpets, have left in writing, that if the foresaid menstruous bloud bestowed within a little locke of wooll that came from a blacke Ram, be worne inclosed within a siluer bracelet, it is a soueraigne remedy against the biting of mad dogs, and for Tertian and Quartan agues.

That was, of course, an instance of the almost universal belief in the efficacy of amulets and allied (sympathetic or remedial) preventive and curative agents, which was diffused through the whole atmosphere of the very "natural" theology of the various Gentile nations in the pre-Christian centuries; and which can hardly be said, with an approximation to absolute veracity, to be completely dissipated at the present moment. The same author gives an instance of the quasimiraculous power of sympathetic therapeusis of the same disease, which simultaneously recalls the methods of homeopathy and of

Icetidas, a worthy Physitian among the Greeks, assureth vs vpon his word, that Quartane agues will make an end and go away by the act of generation, at what time onely as a woman beginneth to enter into her fleurs. But this is agreed vpon by all authors professed and seen in this theam. that if one be bitten with a mad dog, and so far gone, that he is afraid of water, so as he dare not see it or drink at all, do but put a clout or shred of cloth dipped in the said menstrual bloud under the cup whereout hee is to drinke, hee shall immediately be deliuered from that feare: And this commeth by that powerfull and predominant Sympathie, whereof the Greeks write so much, between mad dogs and the said bloud, considering as I haue before said, that they begin first to run mad by tasting thereof.

Not only the morbid influence of the much maligned menstrual discharge was credited with the genesis of rabies, but even the carminative powers of certain items of the vegetable kingdom were believed to be productive of corresponding results. The danger of allowing dogs to partake of such aromatic condiments as pepper and ginger is carefully indicated to the reader by the universal Aldrovandus: "Præterea cum omnivorum sit animal cavendum est, ne iuscula piperate, vel zinzibere aliisque aromatibus condita sorbeat, quoniam hæc ob insignem caliditatem canes in rabiem pellere possunt."

The peculiar exuberance of fallacy of equivocation which has for untold centuries been encouraged to vegetate around the canine associations of this star and this season, has been further cultivated by the copious interpretative comment to which the well known aphorism of the Father of Medicine has given rise in connection with the nomenclature and folk lore of the dies caniculares:

Πρά κυνός και ύπο κύνα ερνώθεες αι φαρφακτιαι Ante canis ortum, et torrente cane, molestæ sunt purgationes. (Lefebure di Villebrune's version.)
In and a little before the Dog days, Purgations are

troublesome. (Sprengell's version.)

Such authoritative pronouncement, couched in language so apparently uncompromising, did not rail to stamp a powerful influence on medical practicethroughout the more cultured areas of western Europe for fully two thousand years. The coincidence of two such physical factors as are there indicated, linked by the bond of danger, could not fail to associate the modifying season with the latter-inthe relationship of cause and effect. The logic of the unspeakable multicapitate was of the same flavor as evermore. That the author did not anticipate the development of the received interpretation was clearly pointed out by Galen. This latter famous philosopher and physician definitely expressed the opinion (in the language of the Pseudodoxia Epidemica) that: "If the same compute of times and months were observed by all nations, Hippocrates had never made any mention, either of Arcturus, Pleiades, or the Dog Star." The reference to a peculiarly brilliant and celestial object was due to the fact that it formed so prominent a milestone in the annual cycle of the seasons; and its name being, in this connection, practically synonymous with the astronomical term solstice. This source of a widely diffused "vulgar errour" was dwelt on at some length by the celebrated author of the Religio Medici, whose comment on the dictum of his medical predecessor of some one-and-twenty centuries before may be read with profitable interest even at the present day:

The condition of the disease, and the intention of the Physitian, hold a main consideration in what time and place soever. For Physick is either curative or preventive; Preventive we call that which by purging noxious humors, and the causes of diseases, preventeth sickness in the healthy, or the recourse thereof in the valetudinary; this is of common use in the spring and fall, and we commend not the same at this season. Therapeutick or curative Physick, we term that which restoreth the Patient unto Sanity, and taketh away diseases actually affecting. Now of diseases some are cronical, and of long duration, as quartane Agues, Scurvy, etc., wherein because they admit of delay we defer the cure to more advantageous seasons. Others we term acute—that is, of short duration and danger—as Fevers, Pleurisies, etc. In which, because delay is dangerous, and they arise unto their state before the Dog daies determine, we apply present remedies according unto Indications; respecting rather the acuteness of the disease, and precipitancy of occasion, then the rising and setting of Stars; the effects of the one being disputable, of the other assured and inevitable.

Following up the current of critical thought manifested in these general observations, Sir Thomas Browne proceeds to examine in careful detail the facts and fancied proofs associated with the growth and development of this item of astrological lore, with its supposed influence on the course of matters medical. And in no case, perhapes, does he display more logical skill and reasoned care than in dealing with this "vulgar errour":

which seems to be the ground of this assertion, and not to be drawne into question, that is, the magnified quality of this Starre conceived to cause or intend the heat of this season, whereby these dayes become more observable then the rest, we finde that wiser Antiquity was not of this opinion, which seven hundred yeares agoe was as a vulgar error rejected by Geminus, a learned Mathematician in his Elements of Astronomy; wherein he plainly affirmeth, that common opinion made that a cause, which was at first observed but as a sign. The rising & setting both of this Star & others being observed by the Ancients, to denote & testific certain points of mutation, rather then denote at testine certain points of industors, rather dis-conceived to induce or effect the same; For our fore-fathers, saith he, observing the course of the Sun, and marking certaine mutations to happen in his progresse through particular parts of the Zodiack, they registred and set them downe in their Parapegmes, that is, certaine Astronomicall Canons, as Rhodiginus out of Vitruvius interprets it; and being not able to designe these times by dayes, months, or yeares, (the compute thereof, and the beginning of the yeare being different, according unto different Nations) they thought best to settle a generall ac-count unto all, and to determine these alterations by some known and invariable signs; not inscribing thereto any part of causality, but notice and signification; and thus much Isaiah, Nolite timere à signis cæli, and that in Genesis, Vt sint in signa & tempora: Let there be lights in the firmament, and let them be for signs and for seasons.

And for signs and for seasons and for days and for years were the lights of the firmament destined to function—in the opinions of the oldest known schools of "wise men," Gentile as well as Jewish. Light, the object in the production of which the Almighty first manifested his creative power, had existed in chaotic space before the formation of the members of the "heavenly host." The fact was an item of the learning of the Egyptians and Chaldæans as well as Hebrews. And the body of cosmic philosophy imported by Pythagoras into Italy, on his return from his prolonged pilgrinage of learning, presents so many points of resemblance to the Mosaic that the famous Archbishop Ussher thought that it

might be argued that he had conversed with the Jews at Babylon, "for that he transferred many of their Doctrines into his Philosophy, as Hermippus declares in his first Book of Kings concerning Pythagoras, cited by Josephus; and in his first Book of Lawgivers, cited by Origen, which likewise is confirmed by Aristobulus the Jew, a Peripatetic Philosopher." And the special medical influence attributed to the brilliant Dog Star is thus stated, and contradicted, by Browne:

Now from the rising of this starre not cosmically, that is with the Sun, but Heliacally, that is, its emersion from the rayes of the Sunne, the Ancients computed their cancicular dayes; concerning which there generally passeth an opinion, that during those dayes all medication or use of Physick is to be declined, and the cure committed unto Nature, and therefore as though there were any feriation in nature or justitiums imaginable in professions, whose subject is naturall, and under no intermissive, but constant way of mutation; this season is commonly termed the Physitians Vacation, and stands so received by most men: which conceit however generall, is not onely erroneous, but unnaturall, and subsisting upon foundations either false, uncertaine, mistaken, or misapplied, deserves not of mankinde that indubitable assent it finded.

I have already referred to the confusion of ancient items of testimony regarding canicular dates, associations, references, and influences, produced by substitution of heliacal emersion for cosmic ascent-or vice versa, and the progressive modification of our celestial relationships due to the precession of the equinoxes. Sherburne (the translator, and very enlightening commentator, of The Sphere of Manilius) also notices the fact, and adds: "But the greater part of the Antients assign it to the time of the Sun's first entering into Leo, . . . At this day with us according to Vulgar computation, the rising and setting of the said Star is in a manner coincident with the Feasts of St. Margaret (which is about the 13th of our July), and St. Lawrence (which falls upon the roth of August), as this common verse expresses it:

Margaris Os Canis est, Caudam Laurentius affert. The precessional deviation of the slope of our planet's axis has not modified cosmic relations (and their associated dates) much since the days of Edward Sherburne, Esquire; and our current almanacs seem to mean by "dog days" the series of forty diurnal rotations which ends with that of August 11th—the date of the cosmic ascent of the dog star.

The original division of the year—by the celestial lights which had been creatively placed in the firmament as landmarks "for seasons"—is thus indicated by the author of the *Pseudodoxia Epidemica*:

And by this way the Ancients devide the Seasons of the yeare, the Autunne, Winter, Spring, and Summer, by the rising of the Pleiades, denoting the beginning of Summer, and by that of the Dog-star, the declination thereof; by this way Aristotle through all his bookes of Animals, distinguished their times of generation, Latitaney, migration, sanity and uenation; and this were an allowable and generall way of compute, and still to be retained, were the site of the stars as inalterable, and their ascents as invariable as primitive Astronomy conceaved them: And therefore though Aristotle frequently mentioneth this starre, and particularly affirmeth that fishes in the Bosphorus are best to be catched from the arise of the Dog-starre, must we conceave the same a meere effect thereof? Nor though Scaliger from hence be willing to inferre the efficacy of this starre, are wee induced hereto; except because the same Philosopher affirmeth; that Tunny is fat about the rising of the Pleiades, and departs upon Arcturus, or that most insects are latent from the setting of the 7. starres; except, I say, he give us also leave to inferre that those particular effects and alterations proceed

from those stars, which were indeed but designations of such quarters and portions of the yeare, wherein the same were observed: Now what Pliny affirmeth of the Orix, that it seemeth to adore this star, and taketh notice thereof by voyce and sternutation, untill wee be better assured of its verity, wee shall not salve the sympathy.

And Browne then proceeds to point out, with gen-

uinely judicial keenness:

what slender opinion the Ancients held of the efficacy of this starre is declarable from their compute; for as Geminus affirmeth, and Petavius his learned Comment proueth, they began their account from its Heliacal emer-sion, and not its cosmicall ascent; the cosmicall ascension of a starre we terme that, when it ariseth together with the Sun, or the same degree of the Ecliptick wherein the Sun abideth; and that the Heliacall, when a starre which before for the vicinity of the Sun was not visible, being further remoued beginneth to appeare: for the annuall motion of the Sun from West to East being far swifter then that of the fixed stars, he must of necessity leave them on the East whilst he hastneth forward, and obscureth others to the West: and so the Moone who performes its motion swifter then the Sun (as may be observed in their Conjunctions and Eclipses) gets Eastward out of his rayes, and appeares when the Sun is set; if therefore the Dog-star had this effectuall heat which is ascribed unto it, it would afford best evidence thereof, and the season would be most fervent, when it ariseth in the probablest place of its activity, that is, the cosmicall ascent, for therein it ariseth with the Sun, and is included in the same irradiation: but the time observed by the Ancients was long after this ascent, and in the Heliacall emersion, when it becomes at greatest distance from the Sun, neither rising with it nor neere it; and therefore, had they conceived any more then a bare signality in this Star, or ascribed the heat of the season thereunto, they would not have computed from its Heliacall ascent which was of inferiour efficacy, nor imputed the vehemency of heat unto those points wherein it was more remisse, and where with lesse probability they might make out its action.

It must, however, be noted in explanation—not, of course, in justification of the diffusion and maintenance of such blundering opinion and doctrinethat the heliacal ascent would have made its impression on the popular vision, mental as well as physical, long before the early star gazer had attained the scientific equipment necessary for the calculation of the precise date of cosmic rising. The æther, with which the Pythagorean philosophy filled all cosmic space beyond the moon, was free—not being obnoxious to any material disturbances. This latter property enabled it, too, to permeate, without opposition or delay, every form of intervening mattereven the unwholesome aër which occupied the sublunar space around the surface of our own planet, and the whole thickness of our sure and firmly set earth itself. A medium of such subtlety was fairly worthy of composing the substantial essence of the being of the Divinity of a pagan philosopher! Its presence readily accounted for the instantaneous communication between the most distant parts of the cosmos. And, although a purely imaginative production of the heathen philosophical intellect of untold centuries ago, the physicist of the present day tries still to base the (now decidedly uneasy) foundations of his phenomena and his experimental results on this same slippery "quintessence"!

The gradual apparent changes of cosmic relationship due to variation of the direction of the earth's axis had, of course, become familiarly known and scientifically explained before the days of Sir

Thomas Browne:

not) that the site of the fixed starres is alterable, and that since elder times they haue suffered a large and consider-

able variation of their longitudes; the longitude of a starre to speak plainly, is its distance from the first point of numeration toward the East, which first point unto the Ancients was the Vernall æquinox; Now by reason of their motion from West to East, they have very much varied from this point: The first starre of Aries in the time of Meton the Athenian was placed in the very intersection, which is now elongated and remoued Eastward 28. degrees; insomuch that now the signe of Aries possesseth the place of Taurus, and Taurus that of Gemini; which variation of longitude must very much distract the opinion of the Dogge-starre, not only in our dayes, but in times before and after; for since the world began it hath arisen in Taurus, and before it end may have its ascent in Virgo; so that wee must place the canicular dayes, that is the hottest time of the year in the spring in the first Age, and in the Autumne in the ages to come.

This unsettled relationship of cosmic (circumferential) and terrestrial (central) phenomena on which the learned and devout author of the Religio Medici so judiciously dwells in the above quotation was the subject of comment and calculation in the various ages and nations of astronomical culture, and has been kept continuously in view ever since the days of Hipparchus. And in one of his references to the ancient metrical Astronomicon, from which I have already quoted the remarkable verses which contain the account of the Canicula, the critical Salmasius points out that "Manilius, qui in prima leonis parte caniculæ exortum constituit, non sphæram barbaricam, id est, Egyptiacum sequitur, sed vulgarem, et Græcanicam"; and quotes the very definite dictum of Egypt's great royal astronomer, Ptolemy: "Tredecimo kal. Augusti, sol in leone, corus spirat, et canis exoritur." And the importance of this celestial landmark, more especially to the rural resident and agriculturist, in the various known centres of ancient civilization, is well shown by the many references of their most representative poets, and more particularly in association with matters remote from the more busy haunts of men. Thus Germanicus:

Et pernix lepus et procyon et sirius esse. Totiusque canis rapidi vestigia prima. —and the divinely melodious Maro himself:

Candidus auratis aperit cum cornibus annum Taurus, et adverso cedens canis occidit astro.

Browne then proceeds to examine more closely the famous aphorism of the father of medicine, and to trace its probable origin and indicate what must have been its real significance:

But that which chiefly promoted the consideration of these dayes, and medically advanced the same, was the doctrine of Hippocrates a Physition of such repute, that he received a testinmony from a Christian, that might have beene given unto Christ [Qui nec fallere potest nec falli]: the first in his booke de Aere, Aquis & locis, Syderum That is, wee are to observe the rising of Starres, especially the Dogge-starre, Arcturus, and the setting of the Pleiades or seven Starres; from whence notwithstanding wee cannot in generall inferre the efficacie of these Stars, or coefficacie particular in medications: probably expressing no more hereby then if hee should have plainely said, especiall notice wee are to take of the hottest time in Summer, of the beginning of Autumne and winter, for by the rising and setting of these Starres were these times and seasons defined; and therefore subjoynes this reason, Quoniam his temporibus morbi finiuntur, because at these times diseases have their ends, as Physitions well know, and hee else where affirmeth, that seasons determine diseases, beginning in their contraries; as the spring the diseases of Autumne, and the summer those of winter; now (what is very remarkable) whereas in the same place he adviseth to observe the times of notable mutations, as the Æquinoxes and the Solstices, and to decline Medication tenne dayes before and after, how precisely soever canicular cautions be considered. This is not observed by Physitions, nor taken notice of by the people. And indeed should we blindly obey the restraints of both Physitions and Astrologers, we should contract the liberty of our prescriptions, and confine the utility of Physicke unto a very few dayes; for observing the Dogdayes, and as is expressed some dayes before, and likewise tenne days before, and after the Equinoctiall and Solsticiall points, by this observation alone are exempted above an hundred dayes; whereunto alone are exempted above an hundred dayes; whereunto if we adde the two Egyptian dayes in every moneth, the interlunary and plenilunary exemptions, the Eclipses of Sunne and Moone, conjunctions and oppositions Planeticall, the houses of Planets, and the site of the Luminaries under the signes (wherein some would induce a restraint of Purgation of Phlebotomy) there would arise above an hundred more; so that of the whole year the use of Physicke would not be secure much above a quarter; now as wee doe not strictly observe these dayes, so need we not the other, and although consideration bee made hereof, yet might wee preserve the nearer Indications, before those which are drawn from the time of the year, or other calestial relation

(To be concluded.)

A NOTE ON CONJUGAL DIABETES.

By Alfred C. Croftan, M. D., Chicago.

During the last three years I have had the opportunity of observing six instances of diabetes occurring together in man and wife. The first case was discovered by chance, because the wife, fearing that the disease might be contagious, brought her urine for examination. The other five cases were all discovered within the short interval of two years and three months, presumably because, interested by the discovery of the first case, I have since then, whenever possible, examined the urine of the consort of a diabetic for sugar; if no sugar was discoverable in a random specimen, then another test for alimentary glycosuria was made according to the usual method.

The six cases were found among a total of 24I diabetics, i. e., in 2.49 per cent. Inasmuch as forty-seven of the patients with diabetes were not married or had lost their consort, my six instances of conjugal diabetes actually constitute approximately three per cent. of the married diabetics studied.

In looking through the literature on this subject, numerous instances of conjugal or "domestic" diabetes are found. All in all I have been able to collect 162 cases; these are all instances in which the coincidence of diabetes in husband and wife was so striking that the possibility of a contagion was

thought of.

It is interesting to note the varying percentage of such instances that different authors report among the total (married and unmarried, and unknown civil state) cases of diabetes observed during a given period. The highest percentage is reported by Devore, who found six instances of conjugal diabetes among fifty cases, i. e., so high a percentage as twelve per cent. Fumaro among 127 diabetics found fifteen instances, i. e., 11.8 per cent. Lecorché, among 104 cases, six instances, i. e., 5.2 per cent. Leading German authors, it is peculiar to relate, find much smaller percentages and altogether occupy a rather sceptical attitude toward the whole question. Seegen, e. g., found instances of conjugal diabetes only three times among 938 diabetics, i. e., in 0.32 per cent. Senator nine cases in 770 diabetics, i. e., 1.17 per cent. Then there are very many authors y be report one of two isolated cases. Consequently

it is very difficult to establish any reliable data in regard to the general frequency of this disorder. An interesting table has been arranged by Hanriot, who, taking 100 cases reported by different writers, found that these 100 cases occurred among 5,987 diabetics (married and unmarried), and therefore constituted 1.67 per cent. of the total number observed.

In view of the scanty material so far observed, in view of the fact, moreover, that no attempt has been made to classify the various glycosurias that are all grouped under the name diabetes, it is altogether premature to venture an explanation of the possible causes underlying the peculiar phenomenon of con-

jugal or domestic diabetes.

That one is dealing in most of the cases with more than a coincidence is clear; such a thing may occur by chance; but in my series, for instance, in which glycosuria was regularly looked for in the consort, the proportion of instances discovered is far too great to warrant the inference that this is the case. One must think of common errors of alimentation obtaining in a family, or of common errors of living, of exposure to common nervous, mental, and emotional influences. One must think finally of contagion. Syphilis and malaria can produce glycosuria; also certain other contagious and infectious disorders of known type that cause vascular degenerations in important organs (liver, pancreas, nervous system) concerned in sugar metabolism.

It is not impossible that other infectious agents of unknown character and origin may be concerned in the transmission at least of certain types of diabetes. This subject is well worthy of further study; it is a corollary of the contagious theory of gout that is gaining many adherents. To deny the possibility of a contagious diabetes on the one hand is precarious; to affirm its existence on the other altogether prema-

ture.

These facts and considerations at least warrant further investigation and the collection of more elaborate and more exact statistics. They have induced eminent authorities to commit themselves strongly in favor of the *reality* of conjugal diabetes.

My object in publishing this note is to stimulate interest in this important inquiry. "If you find glycosuria in one of your patients, look for it in the

mate."

100 STATE STREET.

REPORT OF A CASE OF EXTENSIVE EMPHY-SEMA COMPLICATING TUBERCULOSIS OF THE LUNGS AND URINARY ORGANS.

By W. D. Hennen, M. D., New York.

CASE—Mr. T., aged fifty, was referred to me February 6, 1908. He was an alcoholic to the extent of ten whiskeys a day, complained of dyspnœa and palpitation upon exertion. Six months previous he had fainted, and on coming to vomited clotted blood mixed with undirested food.

Six months previous he had fainted, and on coming to vomitted clotted blood mixed with undigested food. On visiting him I found a large, emaciated man showing the superficial vinous enlargement of the chronic alcoholic. Chest, emphysematous. Heart, displaced to one and one half inches beyond nipple line, liver enlarged one and one half inches downward. Left lung apex showing common signs of tuberculous consolidation. Pulse 140, breathing 40.

The triconducted data are sure closs under tes cherits, recherches are a constant? Meeting the second of May, 1904, Xo. 12.

Temperature 102.6° F. No sputum. Urine, 6 ounces in twenty-four hours.

February 8th, urine loaded with tubercle bacilli, exam-

ined by Dr. Sondern.

February 9th, cystoscoped and attempted catheterization of ureters. Findings: The prostate was prominent laterally. The roof of the bladder contained two round tuberculous ulcers the size of a split pea each. The orifice of the right ureter was in the hollow of a triad of ulcers each the size of a nickel. The ureter itself was constricted one and one half inches above its bladder termination. The opening of the left ureter was cedematous and surrounded by an irregular conglomeration of ulcers, the ureter itself having a stricture one inch high. It is to be noted that there had been no bladder symptoms referable to a condition in which fully one quarter of the bladder mucosa was eroded.

February 12th, summoned to the patient's house because of "swollen jaw." I found the following conditions: A swelling running from the third rib to symphysismenti, from the anterior axillar line to outer sternal line. The swelling gave the typical emphysematous crackling. Temperature 102° F., pulse 100. Some slight sputum. There had been no paroxysm of cough or any other cause for

this condition.

February 21st, Dr. Janeway in consultation. The swelling had spread to the eyebrows, closing one eye, down both

arms to the wrists, and to the symphysis pubis and crests of the ilia. Sputum increased, pus, blood, four ounces. March 1st, the swelling closed both eyes. The eyelids were bulging and hard to touch, white from pressure. Enormous swelling over parotids, giving appearance of a cobra. The whole thorax and abdomen were puffed, giving an increase of five inches to the thorax. The sputum had increased to twelve ounces in twenty-four hours; there was no blood, only elastic fibres, pus, and epithelial cells, no tubercle bacilli. The patient felt well, slept and ate well, had no dyspnœa, despite a pulse of 100, and a remitting temperature of 102.5° F.

March 5th, the swelling began to go down, first leaving the face and neck. From this date on the patient ran steadily down hill; periods of delirium supervened, and after a very bad night, on March 9th, he died at 4

o'clock in the morning.

206 WEST EIGHTY-FOURTH STREET.

THE DOCTOR AS A PUBLIC EDUCATOR.*

BY FRANK VAN FLEET, M. D., New York.

Surgeon to the Manhattan Eye, Ear, and Throat Hospital, Eye Department; Chairman of the Committee on Legislation of the Medical Society of the State of New York.

The subject of the doctor as a public educator is not a phase of our professional life which physicians, as a rule, are inclined to consider very seriously, if, indeed, they consider it at all. They are not different in this respect from other people, for we all manifest a spirit of indifference which, if we were to think over and appreciate the possible consequences of, would arouse us to a sense of our responsibilities and make us wonder how we could so long have been neglectful of them.

It is not necessary to look far for reasons for this

apparent indifference.

The age in which we live, and the government and other conditions under which we exist, ensure to all citizens a degree of comfort and ease which does not seem, on the surface at least, to call for particular exertion on our part beyond that required to earn our livelihoods and care for our families. So, as citizens, we are generally content to let the politicians make our laws, the paid educator look after the mental development of our children, and the press mould the current of public opinion, while

we look complacently on, satisfied that our outward evidences of prosperity and growth indicate a healthy condition, which does not call for interference on our part. We, as medical men, are content to do as others, and allow things to drift, and, as I have already said, we are not more remiss than our fellows in other callings.

You do not hear of doctors entering public life as often as other people, it is true, although in Europe, on the Continent especially, and in the South American republics as well, we do read of men in public life having the title Doctor, and one often wonders just what kind of doctors they are. Even in our own country doctors do enter public life, perhaps oftener than we think. In the State of New York at the present time, of the two hundred and one men composing our State legislature, seven are licensed physicians, and doubtless, if we had the lists of the legislatures of other States, we might find our profession fairly well represented in

the law making bodies.

It is not my purpose to-night, however, either to advocate or criticise the entrance of physicians into the political arena. Doubtless the presence of seven physicians in the legislature of any State could be made a great, and even a controlling influence in shaping the course of medical legislation in that State, but to the outside observer, and even to one who may have had opportunity for closer observation, there is nothing to indicate that the presence of the seven physicians in the legislature of New York exerted any influence, one way or another, on the bills introduced in that body having to do with the public health.

I think I can say without fear of contradiction that in the thirteen years that I have been connected with the committees on legislation of the State or county medical societies, I cannot recall a time when the presence of a physician as a member of the legislature had the slightest influence in any way.

By this I do not wish to be understood as saving that physicians cannot exert an influence in shaping public opinion, for that is not what I mean. believe the medical profession is capable of exerting the greatest influence in this direction. Indeed, I am of the opinion that the medical profession could easily control the enactment of laws affecting public health if we of the profession were willing to do it.

Our profession is held in the highest esteem by the majority of the people of this country, and it would be surprising if this were not the case, for any other feeling toward a profession which, in the main, does so much for the common good, would indicate a lack of gratitude which is not natural to

humanity.

We must, however, bear in mind that our calling is not a business, and the man who enters the ranks of the profession as one enters upon a business career, with no other object in view but the commercial one, actuated by no other thought than that prompted by the commercial spirit, is not only doomed to disappointment, for he will find the time spent in preparation altogether out of proportion to the financial return, but he will also miss that keen sense of satisfaction with his work which comes only to the one who, beside the commercial aspect, glories in the philanthropical possibilities of his pro-

^{*}An address delivered in part at Fraunce's Tavern, in New York City, at the eleventh annual dinner (one hundredth meeting) of the Practitioners' Club of Jersey City, June 9, 1908.

The world, too, rates us as a profession of philanthropists and benefactors, and its estimation of our

position is very high.

I believe people generally experience a feeling of regret when they see a doctor magnifying the commercial side of his profession, or entering into pursuits which have no direct bearing or connection with his professional work.

The world does not rate a man high as a physician who proclaims himself to be a politician, and while it will accord to the practising physician the greatest possible regard for his opinions on questions of public health, it is not willing to be guided by him when there is a possibility that his opinions may be influenced by political considerations.

People are willing to be guided by us along medical and public health lines because they think we have knowledge which they do not possess, and that we, as a profession, are not actuated by selfish motives. They look to us for enlightenment, or, in other words, they look to us to guide them, and

they ought not to look in vain.

This age in which we live is an age of education; indeed, the people are education crazy. They are clamoring for information, and if they cannot obtain it from reliable sources they will get it from sources which are unreliable.

It is astonishing how earnestly and intently they will read the advertisement of the patent medicine man and listen to the haranguing of the quack. They listen to the specious arguments of the various kinds of "paths" when they know that all

"paths" lead to the grave.

They listen to the man who calls himself by a peculiar name, or who employs a peculiar method of treatment, not because they prefer that kind, but because that sort of a person is willing to talk to them. I am glad to note that our profession is coming to see the logic of this, and that many of the leaders of the regular profession are manifesting a greater willingness to talk to the public on these vital questions than heretofore. It is gratifying, indeed, to read the remarks of the incoming president of the American Medical Association, as well as the editorial article in the New York Medical Journal of recent date, on this very subject. We should be public educators, and I hail the coming day when our medical societies will give public lectures on public health subjects, as the Medical Society of the County of Kings has been doing during the past winter months.

Let us briefly consider some of the subjects on which, in my opinion, the medical profession should enlighten the public. There are many such subjects which I shall not attempt even to mention in the brief time at my disposal, but with your permission I shall speak only of a few which are not local in their character and which are engaging the public

attention.

I would like to speak of medical education because I believe it is a subject the public should know about, for if there were ever unjust laws on our statute books surely those governing the practice of medicine are glaring types.

Of course, the purpose of these laws, like the purpose of all law, is to protect the public with the test the least possible hardship on those who

would practice the healing art, but not only do the medical laws of this country fail in the first instance, for they do not protect the public, but they impose on men who would comply with them an amount of hardship which make them practically prohibitive to students who are not financially independent.

Medical laws do not protect the public, because special laws are being constantly enacted which permit privileged classes to practise medicine in special lines, thus exposing the people to practitioners who have not the knowledge sufficient to enable them to do the work these special laws authorize them to do. In New York there are now two such laws, one regulating the practice of chiropody and the other the practice of optometry. These laws are on the statute books to-day because the State Department of Education is willing that they should be there, and there is not a particle of doubt that any body of men who will advance a peculiar theory of practice, or a peculiar method of treatment, or who for any reason are not willing to comply with the law as it exists to-day, can, if they will keep at it long enough, and secure sufficient political influence, secure an enactment which will enable them to evade the requirements of medical practice act. And it will continue to be so as long as members of the legislature and the Department of Education have incorrect notions of the purposes of our medical

Surely a medical law which permits newspapers to advertise tuberculosis and other nostrums, prepared by men who have no medical qualifications whatsoever, and who in the majority of cases have no knowledge of the diseases they advertise to cure, cannot be said to afford protection to the public.

At the same time the requirements for the men who desire to enter the medical profession are being increased until now, in nearly every State, they are so great that it is impossible for one to comply with them and receive a license to practise until he is about twenty-seven or twenty-eight years of age, so that, if it takes five years longer to build up a practice sufficient for one's support, the man who desires to become a physician finds it impossible to meet the requirements unless he has an independent income or is fortunate enough to find a backer with sufficient faith in him to advance the necessary funds. The time is approaching when a poor man, or the son of a poor man, will find it impossible to enter upon the study of medicine with the idea of practising it, and personally I do not believe this is for the best interests of the community.

Another unjust feature of our medical laws is the disparity of the laws in different States, which compel reexaminations before physicians can go

from one state to another to practice.

I believe there are no laws on our statute books more unjust, and even absurd, than our medical laws, and I have long been of the opinion that the public would be as well protected if they were all repealed, which, indeed, is what happened in the State of New York in 1847.

Another subject on which the voice of the profession should be heard with greater force than has been the case is the physical defects of school chil-

dren and the control of our public schools.

The public school is the bulwark of American

citizenship, and has probably had more to do than any other single force in making our country what it is to-day.

These free institutions are designed to dispense knowledge alike to all, the rich and the poor, the high and the low, the intelligent and the stupid.

Here all are supposed to meet on equal ground, and without fear or favor, partiality or favoritism, receive the knowledge dispensed so freely to all.

While the fact has long been known that some children seem to appreciate all that is provided for them and some seem to treat their opportunities with indifference, it has not always been generally conceded that often the apparent indifference of some children is due to causes which, while beyond the child's control, are such that they can be remedied.

The subject of the physical defects of school children is of great magnitude and one fraught with greater possibilities than nearly any other subject now before the public mind. It is too large a subject to treat in detail at this time, and I will deal with it only briefly from the standpoint of an ophthalmologist.

A thorough examination of the children in our public schools would reveal the fact that many of them, variously estimated at from thirty to sixty per cent., have eyes so defective as to seriously handicap their possessors in the competition of life which begins in the school room.

Observation and experience have demonstrated that children who are apparently stupid, sometimes refractory or even seemingly incorrigible, become bright, active, docile, and sometimes prize scholars when defective eyes are corrected with glasses and the children are put on an equal footing with their more fortunate companions.

So enthusiastic have school teachers and educators generally become over the possibilities in these cases that they are ready to go to what seems to be ridiculous extremes in suggesting remedies. In the city of New York they have advocated the appropriation of public moneys for the equipment of school houses with facilities for the examination and treatment of children's eyes, some even urging the unlimited distribution of free eye glasses, to be paid for out of the city treasury.

The medical profession should step in here and urge caution. It is no part of the duty of the government to supply free eye glasses to people who need them any more than it is to supply free food and clothing, unless the people are too poor to pay for them. Nor is it any part of the function of the departments of education to conduct dispensaries for the treatment of physical defects of school children.

Money appropriated for such purposes can be better employed in securing the better lighting of school rooms, better ventilation of school houses, in providing better styles of desks and seats, of improving books, and so on, thereby lessening the production of physical defects, leaving the treatment of such defects to family physicians and others who are competent to deal with them.

Another subject to which we should give more attention in a public way, as a profession, is the

prevention of tuberculosis.

A disease which causes upward of fifteen thousand deaths in one year in a single state alone is one

which should surely receive our attention, and is receiving it, too, but not to the extent it should.

An army which in time of war lost fifteen regiments would receive deserved censure, yet in the State of New York fifteen regiments of men, women, and children, of one thousand each, go down to death each year from this dread disease alone, and the saddest part of it is that they are preventable deaths. It seems to me our profession should be more in evidence than it is in this matter. It would be most unjust to declare that the medical profession is doing nothing in this matter, but it is not doing its full duty. The law which has just been passed in New York, providing for the reporting of tuberculosis and the proper protection of healthy persons from its contamination, was prepared and advocated by an organization which does not include a single physician on its board of managers. It is true that this organization did ask and receive the aid of our profession in securing the enactment of this law, but I believe the initiative should be with us.

Another subject which engaged the attention of legislators, physicians, and the public generally, in New Jersey and New York, during the last legislative sessions of these two states, was animal experimentation. And we have not heard the last of it.

This agitation for the restriction of animal experimentation—or really, its abolition, for that is what the agitators desire—was one of the most peculiar of which I have knowledge. It was overcome, however, by the medical profession refuting the charges brought against it, and the passage of laws which would have been inimical to the progress of medical science were prevented.

There never was a more striking example of what can be done by the medical profession than in this instance.

Various large and influential societies of women held meetings for the purpose of endorsing the antivivisection movement, and, without exception, I believe, after hearing the statements of facts made by members of our profession, voted not to support the movement.

It is surprising what misstatements were made by the advocates of this movement. That men will declare from the public platform that animal experimentation has not added in any way to the knowledge we possess of diseases and their remedies, after scientific men whose names are synonymous with progress have declared that without such experiments it would have been impossible to discover much that has in this way been positively demonstrated, passes all comprehension.

Not later than May 24th we have the newspapers announcing that the American Society for the Prevention of Cruelty to Animals has issued a statement that rabies is an exceedingly rare disease, if indeed, it really exists at all, despite the fact that the Board of Health has records of twenty-eight authentic deaths from this disease in one year in that city alone, and one of the pathologists of the Department of Agriculture at Washington is quoted as authority for the statement that the disease is increasing in prevalence.

The stories of atrocious cruelties practised by some of our most eminent and scholarly investi-

gators have been denied time and again, but, notwithstanding this, and that court decisions make it plainly evident that, under existing law, societies for the prevention of cruelty to animals have authority to enter and inspect places where such cruel practices may be perpetrated, and that under these laws punishment can be meted out to such offenders, antivivisectionists clamor for more restrictive laws, and will never be satisfied until laws so restrictive in their requirements as to be prohibitive are enacted. Sad it is, too, that lawyers, who must know the consequences of their actions, advocate such laws.

There is a crying need that something be done to educate the public along public health lines.

Can you imagine a governor of a great State attaching his signature to a measure, thereby creating a law, making doctors of opticians, and giving them the right to treat all sorts of defects of vision with glasses, regardless of the causes, and requiring of such special doctors only a knowledge of optics?

Can you imagine a man calling on physicians to introduce a preparation with a patented name, declaring it to be a sure cure for tuberculosis?

Can you imagine a great newspaper taking up an antivivisection crusade in retaliation for a medical society's successful efforts to compel that newspaper to obey the law?

And can you imagine the public allowing such things to continue if there was a proper knowledge

of what it all means?

No! Lamentable ignorance on the part of legislatures and governors is the only way to account for their utter disregard for the rights of the people they are sworn to protect.

A degraded intellect which places money above every other consideration in this world is the only explanation for the quacks and some of the news-

papers doing as they do.

And yet these are the existing conditions, which would not be tolerated if the people of this great country had the knowledge they might have and should have.

Gentlemen of the medical profession! It is up to us, as physicians, to see to it that questions relating to public health are properly placed before the people, that they may have knowledge to enable them to act intelligently.

The people are with us, and when they act as if they were not it is because they have not properly understood the pros and cons of the subjects in

We are members of a great profession left to us in all its beauty and dignity as the result of the self sacrificing efforts of those who have gone

We have received this priceless heritage and ours it is to pass on, unsullied and untarnished, to our children and successors.

Our predecessors built on firm and sure foundations. Let us add our mite to the building of a glorious and perfected superstructure.

Well has the poet sung:

"Not gold, but only men, can make As their great and strong Their who for truth and justice sake Stand fast and suffer long. see the work while others sleep, Who stand when others fly. They plant the nation's pillars deep And raise them to the sky.

We have met here to-night in Fraunce's Tavern to celebrate the one hundredth meeting of a club of medical men. Your secretary has told of what has been done in the years of your club's existence, and you have done well.

In this building, perhaps in this very room, on December 4, 1783, George Washington delivered his farewell address to the officers who had fought with him in the war which made these United States of

These men faced problems, and, not counting the cost, worked them out to a satisfactory conclusion, but these men faced problems not greater than the problems we are facing, and there is no more fitting time and place than now and here for us to resolve that we, too, will face our problems, and with the pluck and endurance which characterized these ancestors of ours, work them out to their conclusions, remembering always that no great question is ever settled until it is settled right.

Let us again listen to the poet, who says:

"Mourn not for the vanquished ages, With the great and glorious men, Who dwell in history's pages And live in the poet's pen. For greater days are before us, And the world has yet to see
The noblest deeds of this old earth In the men who are yet to be.'

60 EAST SEVENTY-SEVENTH STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:
LXXVII.—How do you treat acute articular rheumatism?
(Closed July 15, 1908.)
LXXVIII.—How do you treat varicose ulcer? (Answers due not later than August 15, 1908.)
LXXVIII.—How do you treat acute coryza? (Answers due not later than September 15, 1908.)
Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred xwards.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXXV has been awarded to Dr. P. A. Smithe, of Enid, Oklahoma, whose article appears below.

PRIZE QUESTION NO. LXXV.

THE TREATMENT OF CHOLERA INFANTUM.

By P. A. SMITHE, M. D., Enid, Oklahoma

The treatment of cholera infantum, both prophylactic and curative, should be based entirely on the ætiology, which is the feeding of food unsuited to the age or food altered by fermentation or putrefaction so as to become unfit for digestion by young children. Predisposing factors are chilling, over heating, irregular or too frequent feeding, and excessive humidity of the atmosphere, and against these the mother must be taught to bring to bear an

"enlightened intelligence."

Prophylaxis should begin at birth, and should first take the form of an effective veto of any kind of diet except the natural one, the breast. Should artificial feeding become absolutely necessary, cow's milk from a *clean source*, suitably modified with water and a little lime water, without sterilization or pasteurization, should be used during the first year. Pasteurization is only allowable temporarily, as in cities when for any reason the reliable supply fails. During the second year cream of wheat, rolled oats, barley gruel and rice (well cooked and salted), mashed baked potatoes, bread, butter, toast and soft eggs may be added sparingly. The practice of bringing a baby to the table with the family to eat what it fancies is a prolific cause of trouble. Whenever possible mothers should receive detailed instruction in feeding, together with the reasons therefor, and the most important points well emphasized.

Treatment of the acute attack.—The child should be kept in a crib or bed, never carried or rocked, as this causes an extra drain in the strength. Clothing should not be too abundant, preferably of light flannel, and the abdomen should be covered with a flannel protector. If the case is a severe or neglected one, a reliable nurse will often do inestimable good. She will give the mother a feeling of security, which in the absence of the physician she may lose, and, losing, fail to carry out his directions

properly at a critical time.

Give first castor oil, one teaspoonful if under three months; two, between three and six months; a tablespoonful if over six months. If rejected (usually with the undigested contents of an overfilled stomach) wait a half hour and repeat. If again rejected give it ice cold. Give nothing by the mouth for two hours after the first retained dose, then allow as much water as the child wishes every two hours; not oftener, as the stomach needs a complete rest. Allow no food but the water for twenty-four hours, and in the severe cases for forty-eight hours. is when your nurse will come in handy, as it is hard to convince the mother that the child will not starve to death, which it will in no case do. Have the napkins numbered and dated, as they are your When the stools become infrequent, best chart. free from curds, green mucus, and bad odor, which they will if the described rule has been carried out in detail, the time has come to feed, and not till then.

Begin feeding at four hour intervals with water allowed half way between. For a child of three months or under, take a teaspoonful from the upper ounce of top cream taken from a quart bottle of good milk, after it has stood on ice if possible ten hours. Add two tablespoonfuls of water and two teaspoonfuls of lime water for each feeding. On the second day, if all goes well with the stools, give this feeding every two hours. Later increase the amount of food by using more of the upper ounce of top cream and more water, but keep the proportion of proteid low by using only the upper ounce of top cream, using more bottles when necessary. For a child of six months begin feeding exactly as with

the three months' child, except use two teaspoonfuls of the upper ounce of top cream with three tablespoonfuls of water and three teaspoonfuls of lime water to each feeding. Increase the amount of the feeding and of the constituents after two or three days, in the same manner as for the three months' child, and after a week or so use the upper two ounces of top cream, diluted with water, as before.

Children from one to two years old should be fed at four hour intervals, but a cereal gruel, preferably pearl barley, cooked three hours, should replace the modified milk. It should be given in three or four ounce feedings and gradually increased. Cream of wheat, rolled oats, or rice may be substituted.

Chronic cases under one year old do better on condensed milk, diluted with sixteen volumes of boiling water, but this diet must not be a permanent one, or nutritional disorder will supervene.

If choleraic symptoms are prominent at the start, or if there is much tenesmus, I instill normal salt solution into the rectum by means of a soft rubber catheter attached to a fountain syringe, with ten

to twelve inches fall.

To capitulate: Cholera infantum is a food disease and should be treated by emptying the intestinal tract, and then feeding only what the child can digest with a weakened gastric and intestinal mucosa. Opium or its derivatives only postpone disaster. Intestinal antiseptics are worse than useless, as they are bound to irritate the stomach. Rational treatment cannot consist in drugging, but in a painstaking, detailed assisting of Nature.

Dr. Frederic H. Wilson, of New York, says:

Cholera infantum is a very acute gastrointestinal disease, and owing to its sudden onset and the severity of its attack, it forms one of the most important diseases which the pædiatrist is called upon to handle. Owing to its more frequent occurrence in the summer months it was formerly thought to be a disease caused by hot weather, but I do not believe such to be the case. It often follows a more or less protracted attack of ileocolitis, and I believe it to be due wholly to the formation in the intestinal tract of toxines thrown out by bacterial growths, fostered by fermentations. These toxines must be of a most virulent character, causing, as they do, so serious an effect upon the entire system. Children, recovering from an attack of cholera infantum, are usually found to have lost weight in greater amount than from any other disease of similar duration.

I shall describe a prophylaxis for this affection, though I realize that the sudden onset usually makes the case an emergency one. Still I think that in view of the frequency of a previously existing ileocolitis, the physician should always keep in mind, while dealing with an attack of the latter, the possibility of the onset of cholera infantum and should therefore bear in mind its prophylaxis. This consists particularly in not thinking too lightly of the "summer diarrheea," for which he has previously been called. The feeding of the infant, when an attack of cholera infantum is thought likely, should preferably be from the breast. Water given the child should always be boiled and cooled against the ice. Be careful not to overfeed the infant recover-

ing from an ileocolitis, and never attempt to wean it until a long time has elapsed. The patient should be put in a well ventilated, darkened room, and should be allowed to see but one or two people, who

should avoid exciting the child.

Now for the active treatment of an attack of genuine cholera infantum. Consider the clinical picture. A child, weak and puny, vomiting every few minutes and retching more or less constantly. The bowels move perhaps more frequently than vomiting occurs, and the stools have become mere mucous. Tenesmus is nearly constant. The pulse is feeble, the breathing shallow and irregular, the temperature ranges from 102.5° to 105° F., and the litle one is almost too exhausted to cry. Naturally the first thought is thoroughly to empty the stomach and intestines of the irritant poison which is causing the trouble. The stomach can only be treated satisfactorily by means of lavage, and this should be immediately performed. Often one washing will be sufficient to stop or at least diminish the vomiting. Colon irrigations are next in order, and the keynote of success here is the height of the irrigation. Practically the entire large intestine should be flushed out, though without too much hydraulic pressure. The fluid should be allowed to pass in and run out freely, as the child is not to be made to retain the water. Normal salt solution is probably the best for the irrigation and Conklin (1) recommends that the irrigation with salt solution be followed with one of tannic acid, gr. 20 to the pint, to "render inert the soluble poisonous proteids which may remain." I have never tried this, chiefly because the tannic acid has never been obtainable just when wanted, but I think it might be an excellent procedure.

Secondly; the child having so copiously discharged fluid from its gastrointestinal tract, is naturally extremely thirsty and will take with avidity almost anything offered by the well meaning but unwise mother. This is immediately vomited and no relief for the thirst is obtained. I think that no fluid should be given by mouth, save that the child may be allowed to suck small pieces of ice held in a fold of clean gauze. The thirst, however, can be greatly relieved by the introduction of normal salt solution into the subcutaneous tissues. Surgical cleanliness in this little operation should be strictly observed, and the fluid may be introduced into the tissue of the abdomen preferably, or the thighs. I do not advise injecting it into the back of buttocks because the child is usually lying on its back, and the pressure of the body may increase its discom-The amount of solution injected should be carefully measured, and several ounces at a time may be given. This may be repeated at one or two hour intervals. It is most important to avoid injecting air with the fluid, and this is more difficult to avoid than in giving ordinary hypodermic injections. All food should be withheld for from ten to twenty hours, and then feeding should be begun gradually, exceedingly light at first and slowly increased, using breast milk, or barley or albumin water.

The reduction of temperature and stimulation of the heart are also of prime importance. The former is best accomplished by the cold pack or full bath, together with the application of ice to the head

The full bath, if given, should be first tepid and gradually cooled to about 80° or 85° F. by introducing ice. Evans (2) uses ice cold water irrigations of the colon to reduce the temperature, but I think the method is rather heroic and would be contraindicated in many cases. For stimulation, brandy by mouth or hypodermically is probably best. It should be given in ten to twenty drop doses, diluted several times. Ether and camphor are recommended by Holt (3) and are excellent, but have the disadvantage of frequently causing a painful lump to remain at the site of injection for some days afterward. The use of antipyretic drugs cannot be too strongly condemned. In fact, drug therapy is use-less, if not harmful, in this condition. In rare instances the administration of bismuth subnitrate, gr. viii; or bismuth subgallate, gr. ii, have seemed beneficial, but the good may well have come from the other parts of the general treatment.

The absorption of the toxines from the intestines in cholera infantum forms one of its principle dangers. Their effect is a poisoning of the entire nervous system and a strong reaction on the heart. Something must therefore be done to counteract or antidote this poisoning, and here morphine seems to have the best effect. Atropine, too, is useful, both these drugs being given in very small doses and, necessary, hypodermically. The dose of morphine for an infant one year old may be from gr. 1/80 to 1/50 and that of atropine sulphate from gr. 1/800 to 1/600. The dose may be repeated if necessary

after a few hours.

The child recovering from an attack of cholera infantum is a most delicate case to handle, requiring minute attention to detail and constant watching. If a city child, he should, if possible, be sent to the country. The diet must be very gradually increased and little or no reliance should be placed on any of the baby foods. Cow's milk, modified to suit the case, should be allowed only after a considerable lapse of time after the cessation of the attack. The child should be kept in the open air and sunshine as much as possible and not allowed to become fatigued.

A résumé of the treatment may be given as fol-

lows:

Prophylaxis: Careful attention to preceeding illness; especial care in feeding during convalescence; appropriate surroundings, as dark, ventilated room,

Active treatment: Remove irritant from stomach and intestines; supply fluid to body to replace that lost; reduce temperature; stimulate heart; counteract absorption of poisons from intestines.

After treatment: Send to country; use great care in resuming diet; open air and sunlight; avoidance

of over exertion.

RIFFRENCES

- 1. Handbook of Medical Sciences, iii, p. 35. 2. Handbook of Medical Sciences, iii, p. 448.
- Discases of Children, p. 381.

Dr. Sidney J. Sondheim, of Reading, Pa, writes:

When a case of true cholera infantum comes under the care of a physician it means that he has before him a battle with a vicious and rapid working enemy, one which demands prompt and decisive action with careful personal supervision.

The first measure is to stop all food. Give at once a hypodermic injection of morphine sulphate, gr. 1/75; atropine sulphate, gr. 1/600. Strychnine sulphate, gr. 1/100, can be added if the child is weak. Repeat if necessary. This measure serves to overcome severe pain, tenesmus, and vomiting, thus quieting the child. It also relieves spasmotic condition of intestines, not causing retention of fæces and toxine, but prepares the way for thor-

ough cleansing to follow. The next measure is the thorough but gentle lavage of the stomach with normal saline solution. Before withdrawing the tube introduce through the same fziii to fzvi of castor oil. Compress tube above by fingers and quickly withdraw, preventing as far as possible the oil on top of tube from touching tongue. The stomach having been cleansed and the small intestines taken care of by castor oil, we now look to the large intestines. High rectal enemata of normal saline solution (viii to xvi f3) are now administered, the buttocks being held together and the solution retained as long as possible. measure not only acts as a cleanser, but furnishes fluid in readily absorbable condition, which the child badly needs. The enemata should be frequently repeated; every four hours in first twelve hours, and according to the severity of the case more or less frequently in the next thirty-six hours. vomiting continues equal parts of lime water and cinnamon water may be given by mouth.

The child now has a thoroughly cleansed gastrointestinal tract, and we must now prevent, or if already present, allay, inflammation of the tract, overcome diarrhœa, and support the child's strength. Bismuth subnitrate, gr. x to xv; salol, gr. ii, in chalk mixture acts well as astringent, antiseptic, and mechanical healer of the tract.

Return to food must be very gradual, and the child's stools and general condition carefully ob-

In breast fed babies thirst may be relieved by barley water. When returned to breast, the periods of feeding should be very short and interval between feedings long. Both, if child's condition is favorable, can be modified according to the judgment of the physician.

In bottle fed infants, when diarrhæa and other symptoms subside, begin with skimmed milk, boiled, and diluted with three quarters barley water. crease the amount of milk gradually, and cautiously increase the fats. A tonic may be given to child

to hasten recuperative process.

Pure food, carefully prepared, fresh aid, exercise. and bathing are the essentials of prophylaxis.

Dr. L. C. Freeny, of Pittsville, Md., remarks:

Assuming that the case presents itself as a true cholera infantum, prophylaxis being out of the question, we look first to the milk supply as the source of trouble. If bottle fed, is the cleanliness of the bottles and milk assured? We really have here a ptomaine poisoning to deal with, and it may be highly necessary to change the methods, the milk. or both. Next we look at the proportion of the fats and the proteids as possible sources of irritation, their reduction being called for almost always.

Cases occurring in breast fed children are uncommon, being then generally due to overfeeding, and a change to cow's milk is hazardous and not to be undertaken unless the mother is suffering from some acute infectious disease, tuberculosis, cancer, and perhaps menstruation.

It is of prime importance that the food ingested be reduced to a minimum, withholding it entirely for at least twenty-four hours. At the expiration of that time teaspoonful doses of beef juice every two or three hours should be tried tentatively. This is easily digested and avoids the possible introduction of more toxines from the milk supply.

When ordinary milk feeding is resumed, say in a week's time, one third the usual quantity is sufficient, bearing in mind the sources of supply, clean-

liness, fats, and proteids.

As soon as seen, the child receives calomel, gr. 1/10, every half hour until one grain is taken. This is followed by two teaspoonfuls of castor oil.

We have here a paretic bowel, made so by toxines, which increases serous transudation from the vessels and wall. The evacuations vary greatly in number and character. They are greenish, yellowish, brownish, or almost colorless; reaction alkaline. The odor is sometimes very foul, but generally it is not very offensive, especially in the late stage of the disease.

While we should reduce the amount of food ingested, we must not overlook the important fact that the fluid lost by serous purging must be replaced. This can be accomplished by giving boiled water by the mouth, or by irrigating the stomach and intestines. Should danger seem imminent from this cause alone, saline transfusion might be practised.

When vomiting is so persistent that all food is rejected, we should give a copious, high colonic injection of normal salt solution, and, after a reasonable interval, a nutrient enema of white of egg, whiskey, and water. This enema must be warm, and not contain more than one and one half ounces. It can seldom be given more often than three times a day, on account of intolerance of the bowel.

Aside from calomel and castor oil, drugs seem to do little good. I have discarded opium except in combination with starch water as an injection, giving it then only when the stools are frequent, large, and watery, and accompanied with much pain. Two to five drops of the tincture of opium with one half ounce of starch water injected high in the bowel seems to do good sometimes, but must be used with

If, as seems entirely probable from the symptoms, these toxines are due to bacillary production, it would be highly desirable that some intestinal antiseptic be found to prohibit their production. I know of nothing of this nature that has the slightest

For the high fever present a tub bath, beginning with the water at 90° F., gradually reducing to 80°

F., serves the purpose well.

My main reliance in the treatment of this disease is in high colonic injections of normal salt solution, the temperature of which should be from 95° F. to 100° F. These are repeated every eight hours. It would seem that a bowel constantly emptying itself

would not need washing out, but this is not borne out in my cases. The irrigations remove a variable quantity of intestinal débris, intestinal toxines not yet absorbed, and replace lost fluid. They also flush the kidneys, and thus remove toxines which have been absorbed into the blood current.

Should collapse threaten, strychnine sulphate, 1/60 gr., must be given hypodermically. This is

a suitable dose for a child two years old.

If the child survive the attack one week and does not get well, we then have a subacute marasmic condition which may last for weeks, terminating as

a rule in an enterocolitis.

If the means, as described, are visibly failing, speaking now of a case that has survived the attack a week, our hope lies in salt air and a continuance of the colonic flushing. The child must be kept out in the open air all the time, no matter how weak or desperate the condition. It is really astonishing how some apparently hopeless cases recover at the seashore, and without any other treatment than the irrigations. It is due in part doubtless to the abundance of cool, fresh air. But there is some-peculiar tonic action exerted by the salt laden air. It is particularly unfortunate that the seashore is out of the reach of so many of these little patients.

(To be continued.)

Correspondence.

LETTER FROM TORONTO.

The Annual Meeting of the Ontario Medical Council.— Criminal Abortion and the Newspapers.

TORONTO, July 8, 1908.

During the week ending July 11th the Ontario Medical Council held its annual session in Toronto. Dr. W. Spankie, of Wolfe Island, the retiring president, delivered the annual presidential address, reviewing the work of the Council for the past year. In his address he referred at considerable length to the attacks recently made upon the Council by some of the public press of Ontario, particularly the Toronto Globe, which for the space of a year or so has been taking upon itself the task of pointing out to the Medical Council its path of duty. That particular path of duty lay along the highroad of the crime of criminal abortion, of which there have been recently in the Ontario criminal courts several cases against members of the Ontario College of Physicians and surgeons. While the press was apparently calling upon the Council to institute proceedings against these members of the profession, of which the Globe alleged there were several known in Toronto, the Council rested on their oars, content in their belief that the proper persons to institute proceedings against alleged criminals, in whatever class of society, were the law officers of the Crown. But of this more anon.

The president dealt in his address with other matters of importance. With regard to the question of reciprocity with Great Britain, seeing that Quebec and Nova Scotia have already reciprocity with the home country, he said it was one of great importance. He stated that there were now on the Ontario Register 3,807 members in good standing Permanent quarters had been purchased during the past year at a cost of \$21,000, and as soon as building material and labor cheapened it was the intention to go on and build suitable accommodations. Another subject that should engage the attention of the Council was that of a readjustment of the electoral divisions. The following officers were elected for the ensuing year: President, Dr. S. H. Glasgow, of Welland; vice-president, Dr. E. A. P. Hardy, of Toronto; registrar, Dr. John L. Bray, of Toronto; treasurer, Dr. H. W. Aikins.

At the recent examinations of the Council, the examiners had "plowed" about sixty-five per cent. of the writers. It was thought either that this was unfair or else there was something wrong with the system of education. On motion of Dr. Britton, of Toronto, a special committee was appointed to look

into the matter and report.

The special committee on a five year curriculum appointed last year reported that, in view of the fact that the various teaching institutions had not yet had time to complete the details of their fifth year course, the committee recommended that no action be taken with regard to specifying additional work.

The names of 189 physicians had been struck off the Register during the past year for nonpayment of the annual \$2 assessment. In most of these cases the men had left the province or could not be found.

A special committee was appointed to consider the advisability of securing reciprocity between the College of Physicians and Surgeons of Ontario and the General Medical Council of Great Britain, as provided for in the Medical Act of Great Britain. Dr. S. H. Glasgow, Dr. J. A. Temple, and Dr. E. A. P. Hardy, of Toronto, were appointed the executive

committee for the ensuing year.

The introduction of the following motion and the discussion thereon formed the most interesting part of the proceedings, at least to the public press apparently, for all pertaining to it was fully reported: The attention of this Council having been recently called to the prevalence of crime against the unborn, that when the detective (of the Council) becomes aware of such a case, he be instructed to lay the matter before the Prosecutions Committee, who will, after careful inquiry, pass the evidence, when deemed advisable, on to the Discipline Committee for action." Special names were mentioned in the debate on this resolution, names of some who were recently implicated before Ontario courts of law in the matter of criminal abortion: and the editor of the Toronto Globe, a Presbyterian minister, who has for some time been pressing upon the Council their line of duty in these cases, came in for comment, favorable and unfavorable. There has been a great deal of newspaper talk with regard to certain cases which have occurred throughout the province, and it has not been yet clearly shown that the newspaper in question was divested of all political bias in some of these cases. It seemed to labor under the delusion for a time that the Ontario Medical Council was a criminal court, and that the duty of the Council was to hunt down the criminals and

punish them by depriving them of their license to practise. forgetting that the law officers of the Crown were the duly authorized parties to take any such proceedings in the medical profession as in all other walks of life. Recently, however, the *Globe* has modified its demands on the Council, and now pins its faith to a clause in the Medical Act which practically goes to show that the Council should deal with men who are guilty of infamous or disgraceful action in a professional respect. It has gone out of the criminal cry business. Well, when this selfsame Council has sought before now to discipline some of its members for infamous and disgraceful action or conduct in a professional respect, the Toronto Globe and practically all the other lay press poured hot shot into the Council for daring to take away from a man the means of making bread and butter for his family. One thing seems to be quite clearly brought out in the whole controversy, and that is this, that the Council must in all cases deal strongly with every one adjudged guilty by the courts of law in these cases. They will be wise men who proceed with all due caution in the case of any one adjudged not guilty. The Ontario Medical Act requires that a charge against a member of the Ontario College of Physicians and Surgeons of unprofessional conduct of any character shall be signed by four practitioners before the Council shall undertake to investigate. Be it so, especially in the case of criminal abortion. Where or how are four men to become possessed of absolute facts so as to warrant them in impeaching a confrère before the medical court? Every practitioner here as in other places has most probably heard of some one performing these nefarious practices; but it is only hearsay. He has no absolute proof. The Toronto Globe, through its editor, states that there are several in the city of Toronto alone who perform abortions; and upon hearsay evidence calls upon the medical profession to clear its skirts. The physicians of Canada feel that the Crown officers should call upon the editor of the aforesaid newspaper, or the Ontario Medical Council, the guardian of the profession throughout the province, should call upon this self appointed pedagogue of doctors' morals to make good his statements in a court of law, and that he should be made to name his men and prefer his charges against them, and them alone, and not against the entire medical profession throughout the province at large.

Therapeutical Hotes.

The Treatment of Pulmonary Tuberculosis.— La Clinique for July 3, 1908, publishes a lengthy excerpt from a volume entitled La Pratique théra-peutique, by Courtois-Suffit and Tremolières, published by O. Doin, Paris, giving rules for the treatment of persons afflicted with pulmonary tuberculosis. Of the hygienic treatment exposure to air is considered fundamental. It should be uninterrupted night and day, and all the time. To guard against cold a flannel chemise should be worn and hot water bottles placed next the feet if necessary. The outlook of the invalid's chamber should be to the south, varied sometimes by an eastern or western exposure, according to the season of the year and the country. To be prohibited is confinement in closed rooms, especially where large crowds are gathered in theatres, cafés, stores, etc. Exposure to the rays of the sun should be avoided. A phthiscical subject should never walk abroad in the sunlight without the protection of an umbrella.

Contrary to the general belief, exercise of the hody is not beneficial for consumptives, for the reason that it accelerates tissue combustion. Mental and physical fatigue, bodily exercise, and in particular that of the chest and upper parts of the body, are to be formally interdicted. Walking alone is to be permitted. Such walking exercisé should, however, he easy and on a level surface, and preferably after meals. The number and duration of the walks should be regulated by the physical condition of the patient, bodily weight and temperature being taken into consideration. Any diminution of the usual bodily weight necessitates abstention. Absolute repose must be imposed on patients when feverish symptoms develop, and any increase of temperature above 100.4° F. should be taken to constitute fever in the tuberculous subject. Baths should not be taken too frequently, and they should not be too warm or be indulged in for too long a period at one time. A bath at a temperature of 95° F. for a period of from ten to fifteen minutes is permissible, and it should be followed by a good rubbing.

Local revulsive treatment is employed to overcome pain in the chest, this consisting of the application of mustard leaves, mustard poultices, or the tincture of iodine. As general treatment nutritives like codliver oil and yolk of egg should be prescribed. Glycerin and arsenic are useful in certain conditions. The soluble phosphates are also recommended, calcium lactophosphate or calcium chlorhydrophosphate being used in 7 to 30 grain doses, administered in elixir, syrup, or wine.

Antiseptic agents that are eliminated by the bronchial tubes are of value. Creosote, alone or combined with calcium phosphate, sodium arsenate, etc., may be given either in pill form or in oily solutions and in enemata, as in the following forms:

| R Creosote,gr. iss |
|--|
| Calcium phosphate,gr. ss |
| Pulverized soap,gr. iss |
| M. ft. pil. |
| Oily solution: |
| R Creosote, |
| Codliver oil,Oii |
| M. et sig.: One tablespoonful twice or three times daily |
| Enema: |
| B Olive oil, |
| Creosote, |
| Wine of opium, |
| M. |
| |

Two tablespoonfuls of this mixture added to a glassful of warm water are emulsified with the yolk of an egg to form an enema.

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OBSTACLES IN THE WAY OF THE PRAC-TITIONER.

We would call particular attention to Dr. Frank Van Fleet's article, published in this issue of the Journal, entitled The Doctor as a Public Educator, a theme on which the author finds himself in accord with the president of the American Medical Association and with others who advocate competent instruction of the general public in regard to medical matters. Dr. Van Fleet's long connection with legislative affairs in the State of New York as they affect the medical profession, a connection in which he has displayed zeal, tempered with a genuine desire to promote the general welfare, gives to his utterances an ex cathedra quality which could hardly be surpassed. It is not our present intention to comment on all the topics touched upon by Dr. Van Fleet; indeed, we must on this occasion restrict our remarks to a subject indicated in the following paragraph:

At the same time the requirements for the men who desire to enter the medical profession are being increased mitl now, in nearly every State, they are so great that it is impossible for one to comply with them and receive a license to practise until he is about twenty-seven or twenty-eight years of age, so that, if it takes five years longer to build up a practice sufficient for one's support, the man who desires to become a physician finds it impossible to meet the requirements unless he has an independent income or is fortunate enough to find a backer with sufficient faith in him to advance the necessary funds. The time is approaching when a poor man or the son of a poor man will find it impossible to enter upon the study of medicine with the idea of practising it, and personally I do not believe this is for the best interests of the community.

The difficulties arise partly in the medical schools, which, strange to say, seem to plume themselves on their increasing success as obstructionists, and partly in the State examinations. As for the colleges, more and more of them are requiring as a preliminary the possession of a high degree of academic attainments. Now, we do not in the least question the value of a thorough preliminary education, and we should be glad if every medical matriculate had at the outset of his professional studies the advantage of a degree in arts, with all that it ought to imply, but too frequently does not; but we have grave doubts as to the wisdom of insisting that the young man who wishes to enter upon the study of medicine shall have had the costly opportunities necessary to such a possession.

We know that there are in the faculties of some of the schools that have lately added the requirement in question individuals who look upon it with misgivings, and they are men who not only are learned in medicine, but have also had such experience in teaching and such facilities for estimating the elements that make for the welfare of the profession as to give to their opinions almost the weight of finality. What they chiefly fear, and with good reason, in our opinion, is that the rigid requirements will deprive us in the future of many men who would unquestionably add lustre to any high calling. There is certainly something in the feeling that the doctor, like the poet, is born, not made.

As regards the State examining boards, we look upon their examinations as generally better calculated to bring out a candidate's capacity to cram than to ascertain his real fitness to practise medicine. The degree of knowledge of chemistry, bacteriology, ophthalmology, and other more or less recondite branches of knowledge necessary to enable a man to practise medicine creditably is not by any means the grade that will make him a proficient chemist, bacteriologist, ophthalmologist, or specialist in any other branch. This, we think, is too often lost sight of. Then there is the hampering lack of reciprocity in licensing between one State and the others, not complete, to be sure, but still so pronounced as to work a real hardship in numerous instances, both to individuals and to the profession as a whole. We hope to see this remedied within a few years.

MEDICAL MEN AS DETECTIVES AND PROSECUTORS.

A rather remarkable state of things in the province of Ontario is related by our Toronto correspondent (see page 170). Some of the newspapers of Toronto, it seems, are urging the Ontario Medical Council to punish licensed practitioners of medicine for having practised criminal abortion. Now.

any punishment that the Council could inflict, as we understand matters, would be by a revocation of the license, and then only after conviction in a court. At least, we suppose that such a course would not be undertaken prior to a judicial conviction. But, in addition, the Council are told by the newspapers in question that it is their duty to prosecute men suspected of the offense, and not leave that function to the law officers of the Crown.

Now, it is generally thought that medical censorship, far from being neglected by those who have it in charge, too often swells to the dimensions of persecution. A man was once severely disciplined in New York for having professed to be able to pass an instrument into the larynx; another was publicly censured for having consulted with a homeopath (the "consultation" having really consisted in the heinous offense of attending the homocopathic physician's wife in confinement); and in London a few years ago another was made to suffer for what was looked upon as practising ablation of the clitoris without due cause. All of us have long been heartily ashamed of those persecutions, for such they now clearly seem to have been, and we mention them simply to show that in censorship the profession has been anything but negligent in the past. We hope it will not soon be led again into such pernicious activity. Of course the cases we have adduced and prosecutions for criminal abortion are not parallel, but, so far as the power of any medical body goes, they have the common element of censorship.

Medical men, whether individually or in some corporate capacity, are not now quite so ready as they once were to act the part of the official or volunteer "smelling committee," and we believe that our Ontario brethren are not going to precipitate themselves into the rôle. As our correspondent well says, any newspaper editor who suspects a medical practitioner of practising criminal abortion ought to furnish to the proper law officers such information as may lead to a judicial investigation; simply to hound medical officers on to the infliction of so mild a penalty as the revocation of a license, after an investigation necessarily hampered by unusual difficulties, is to deal very gently with persons who, if they are guilty, are among the most loathsome of malefactors.

Abortionists are notoriously hard to convict, but it is not to any unwillingness of medical men to testify that the difficulty is due. To expect them also to prepare the case is asking too much. If some of our county societies and boards of health do occasionally dabble in detective work, they do not render it at all more congenial to practitioners of medicine in general.

THE HISTORY OF MEDICINE.

Interest in the study of the history of medicine grows apace. It is a sign of a broadening of culture in the student of medicine that he should interest himself in the links of the chain of human experience which reaches into the well of the dim past. Goethe was unduly pessimistic when he wrote: "All professional men labor under a great, disadvantage in not being allowed to be ignorant of what is useless. Every one fancies that he is bound to transmit what is believed to have been known." In the mad rush for the acquirement of new knowledge we often miss the compensations that might come from quiet meditation on that which has been known and long since forgotten.

The history of medicine, as a codified and coordinated branch of study, has been difficult of approach, save to those well acquainted with the German tongue and for whom three thick volumes have had no terrors. The histories of Haeser, Pagel, and Puschmann have no rivals as to size or scholarly qualities. What has been needed for a beginner has been a condensed but comprehensive work, and fortunately one of that sort has just appeared from the pen of Julius Pagel, so well known as the foremost of medical historians.1 To those familiar with the comparative tables of some universal histories, the method adopted in these "Time Tables of Medical History" will not prove unique. The author has been able to present in some twenty-seven tables a comparative chronological development of the history of medicine.

In the first table, prehistoric medicine, the medicine of the savage, is taken up; then follows a table rich in comparative data on the history of medicine of the older civilizations—from 2000 to 800 B. C.; a third gives a brief presentation of the classic period of Hellenic culture; then follows that of the Middle Ages, with the Byzantine and Arabic periods, the medicine of the monks, the rise of the Salerno school, and the scholastic periods of the thirteenth and fourteenth centuries, which flowed into the renaissance of modern times. The names of Vesalius, Paré, and Paracelsus stand out in the sixteenth century, while the English school comes to its full flower in Harvey and in Sydenham in the following era. The names of the eighteenth and those of the nineteenth centuries are too numerous and well known to cite, but all the salient features are here, arranged so that with one glance the whole situation may be appreciated. For the student of medical history such a résumé as is presented in these Zeittafeln is invaluable.

IJ. L. Pagel, Zeittarein zur Geschehte der Meinem Berlin, ic S.

THE PERSISTENCE OF ERROR.

That "truth crushed to earth will rise again" is generally conceded, but the undiscerning public does not seem to realize that error is frequently quite as persistent. Dr. William Osler has recently had ample proof of this, for both the British and the American press have made his sixtieth birthday, which, according to the newspapers, occurred recently, the excuse for cartoons and satirical comments innumerable based on his reported dictum that all men should be chloroformed at sixty. The mere fact that Dr. Osler did not lay down such a proposition-and this has been established beyond question-seems not to have had any deterrent effect on the cartoonists and paragraphists. Many of them must have known that the quotation was apochryphal, but the occasion was too good to be wasted through a mere blind obedience to truth. The story was well invented if not true, and the entry of Dr. Osler into the race for the Lord Rectorship of the University of Edinburgh in competition with the Right Honorable George Wyndham and the Honorable Winston Spencer Churchill, both younger men than himself, gives zest to the jokes.

Dr. Osler is not alone, however, in suffering from misquotations, for noted authors, from Milton to Mark Twain, suffer with him. In Lycidas we find the line "To-morrow to fresh woods and pastures new." The reading of "fields" for woods has been almost universally adopted by the general public. What Sydney Smith really said was: "There is humor in a Scot's skull, but the only instrument by which it can be extracted is-a corkscrew," which is both more true and more witty than the phrase "approbation from Sir Hubert," which has become "praise from Sir Hubert." Niels Horrobow opens a chapter on The Snakes in Iceland by the phrase "There are no snakes in Iceland." Some careless borrower made the quotation read "Ireland," and nothing less than a Papal bull would now correct the popular error.

Scribes and historians do not hesitate to invent apt phrases ex post facto, as has been done in Dr. Osler's case and in that of the Old Guard, which will die, "but never surrender" for the balance of time, despite the evidence of Victor Hugo in Les Misérables. Altogether, we fear that Dr. Osler's case is hopeless and that he will go down to posterity as the doctor who advised chloroform for all men at the age of sixty, but who, fortunately, did not take his own medicine. Incidentally it is not without interest to note that the press has erred in prematurely celebrating Dr. Osler's sixtieth birthday, which, according to Who's Who, will not occur until 1909.

THE HEALTH OUTLOOK.

Before the National Conference of Charities and Correction, held in Richmond, Va., on May 11th, the chairman of the Committee on Public Health, Dr. Walter Lindley, of Los Angeles, Cal., delivered an address entitled The Nation's Outlook for Health. It appears in the June number of the Southern California Practitioner, of which Dr. Lindley is the editor.

Dr. Lindley first devotes attention to the Oriental plague, giving a graphic picture of the East Indian mortality from that disease in recent years and noting the importance of exterminating rats and their fleas, which play such a preponderating part in spreading the pestilence. Flies and mosquitoes, too, he reminds us, are other insects against which radical measures must be taken. He warns us anew of the facility with which certain diseases may be communicated to man from the dog and the cat. He sees in the present readiness to engage in the work of exterminating noisome insects and attending carefully to the health of the necessary domestic animals a hopeful sign of the subjugation of several infectious diseases.

Dr. Lindley sees hope also in certain therapeutical advances, such as Wright's "vaccine" therapy, Bier's artificial hyperæmia, and Flexner's serum for the treatment of cerebrospinal meningitis, as well as in the temperance movement, the increase of national forests, the multiplication of trained nurses, and recent Congressional legislation concerning pure food and drugs. With regard to cancer he says: "This field is awaiting the advent of a new Jenner, Pasteur, or Koch." On the whole, Dr. Lindley's appreciation of the outlook is cheering.

THE FAD ABOUT OVEREATING.

Sir James Crichton-Browne has several times of late made brave pronouncements anent popular convictions as to medical and physiological affairs. Now, according to the press dispatches, he has publicly declared against the fad about overeating; and it was none too soon. It has recently become very common for men to remark, generally over a generous repast, that undoubtedly we all eat too much. For the most part such a statement is purely academic, we suppose, for we have never observed that the belief was strong enough in the preacher's breast to lead him into any striking curtailment of his own indulgence.

Generalizations spring readily to the tongue, especially to that of the man who thinks he knows something of which his neighbor is in blissful ignorance, and what wiseacre is there nowadays who

does not know the ins and outs of physiological chemistry, hygiene, nutrition, heredity, and many another branch of knowledge that the lifelong student finds puzzling? For our part, we have always demurred to the dogma which would screw a man's consumption of good and toothsome food down to the minimum required to maintain his physical efficiency as measured by calories and such like abstract standards. Such teaching is repugnant to all but the stingy. We are glad, therefore, that the distinguished English alienist has thus given the authority of his great name to our conviction.

Obituary.

FRANK HUGH MONTGOMERY, M. D., of Chicago.

While yet in the prime of life—he was about forty-five years old—Dr. Montgomery met death by drowning on July 14th. He was a physician and medical teacher of eminence, a public spirited citizen, and a man held in high esteem by the profession and by all who knew him. His chief professional work was in the field of dermatology. At the time of his death he was the assistant secretary of the faculty of the Rush Medical College (University of Chicago) and associate professor of skin, genitourinary, and venereal diseases in that institution.

Rems Items.

Changes of Address.—Dr. Saul Knopf, to 561 Willoughby Avenue, Brooklyn.

A Department of Sanitary Science and Hygiene has been established at Cornell University. The course will be opened on October 8th by an address by President

An American Surgeon in the Olympic Games.—The American revolver team, of which Dr. Reginald H. Sayre, of New York, is the captain, won first place in the competition in revolver shooting.

A New Hospital in Neenah, Wis.—Plans have been submitted for a new hospital in Neenah, Wis., which is being presented to the city by Mr. Charles B. Clark. The hospital will cost about \$100,000.

The Destruction of Mosquitoes in Cuba forms the subject of an interesting memorandum presented to Governor Magoon by nis chief sanitary officer, Major J. R. Kean, of the Medical Corps of the Army.

Rockaway Beach Hospital and Dispensary.—Work on this institution has been begun, and plans have been made for the laying of the corner stone on August 9th. A three days celebration will be held on August 9th, 10th, and 11th, for the benefit of the hospital, which will include a "tag day"

Dr. William P. Spratling, for nearly fourteen years the medical superintendent of the Craig Colony for Epileptics, Sonyea, N. Y., has been elected to the chair of nervous diseases and physiology in the College of Physicians and Surgeons, Baltimore, and will move to that city in a few

Contagious Diseases in Chicago.—During the week ending July 11, 1008, there were reported to the Department of Health 235 cases of contagious diseases, as follows: Diphtheria, 62; scarlet fever, 45; measles, 75; chickenpox, 5; typhoid fever, 6; whooping cough, 8; tuberculosis, 26; smallpox, 1; minor diseases, 7. As compared with the preceding week, the number of cases reported of all diseases except typhoid fever and diphtheria, has decreased; these show an increase of one case each.

The San Francisco Relief Home for the Aged and Infirm.—We learn from Charities and the Commons that this institution has been opened and is now crowded to its full capacity. It is situated on the grounds of the old almshouse, and has been erected by the San Francisco Relief and Red Cross funds, at a cost of \$300,000.

A Medical Weekly in Esperanto is soon to be established in Hungary, according to the Budapest correspondent of the Lancet. The journal is to be devoted to Slavonic medical affairs. The various Slavonic dialects differ so widely that some ready means of intercommunication between the different localities was needed.

To Exterminate Flies in Massachusetts.—The Massachusetts State Board of Health is planning a campaign against flies, which it is thought will last at least a year and involve an expenditure of \$200,000, which sum has been appropriated for that purpose. The projectors of the campaign confidently predict the complete extermination of

files in the State.

The Mortality of Connecticut.—During the month of June, 1908, there were reported a total of 1,135 deaths from all causes, which was 68 less than in May, 90 less than in June of last year, and 76 less than the average number of deaths during the month of June for the preceding five years. The death rate was 13.6 for the large towns, 12.8 for the small towns, and 13.4 for the whole State.

The Mortality of Chicago.—During the week ending

The Mortality of Chicago.—During the week ending July 11, 1908, there were reported to the Department of Health of the City of Chicago 510 deaths from all causes, as compared with 410 for the preceding week and 483 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.28. The principal causes of death were: Apoplexy, 8; Bright's disease, 42; bronchitis, 9; consumption, 57; cancer, 28; convulsions, 5; diphtheria, 6; heart diseases, 40; intestinal diseases, acute, 52; measles, 2; nervous diseases, 23; pneumonia, 36; scarlet fever, 7; suicide, 13; typhoid fever, 1; violence (other than suicide), 49; whooping cough, 5; all other causes, 127.
Clean Food as Well as Pure Food for the Capital.

Olean Food as Well as Pure Food for the Capital.—
Dr. William C. Woodward, health officer of the District of Columbia, has instituted an active crusade against unclean restaurants and lunch rooms in Washington. In the business section of the city there are a number of small lunch rooms, which have been complained of on the score of a lack of cleanliness, and an investigation showed that in many of these, and in some of te larger restaurants as well, the food was prepared and served under the most unsanitary conditions. This is all to be changed, as Dr. Woodward will have closed those places which fail to comply with the requirements laid down by him as to cleanliness. He will be aided in the work by two additional food inspectors, whose appointment was provided for at the last session of Congress.

The New York Police Take Part in the Anti-Noise

The New York Police Take Part in the Anti-Noise Crusade.—The police commissioner of the city of New York has issued a general order instructing the police force to put a stop to all unnecessary noise. In the course of the order the commissioner says: "The police are directed to suppress the shouting of street hawkers of all kinds; all unnecessary shouting and yelling; unnecessary blowing of steamboat or factory whistles; roller skating on the streets or sidewalks to the interruption and interference of traffic; whistling of peanut roasters; unnecessary blowing of whistles or horns on motor cycles or automobiles; letting the exhaust escape from motor cycles and automobiles without being properly muffled; yelling of the "old clothes" man; yelling of carriage barkers at theatres and hotels; flat wheels on street cars; barking of dogs."

Precautions Against Tuberculosis at the New York Stock Exchange.—Prompted, no doubt, by the inquiry regarding the danger of tuberculosis infection through telephones, which was recently addressed to the Postmaster General of Great Britain by a member of Parliament, the New York Stock Exchange recently had its four hundred employees examined for evidence of tuberculosis. Three of the employees were found to have symptoms of the disease, and these have been sent to the mountains to recuperate at the expense of the exchange. Some three hundred telephone operators employed by members of the exchange are now being examined by a physician detailed for that purpose by the Board of Health. Out of the first thirty examined three gave evidence of tuberculous infection, and their respective employers have withdrawn them from service in the exchange and assumed the cost of their proper treatment.

A New Edition of Gray's Anatomy.—It is announced by the publishers, Messrs. Lea & Febiger, of Philadelphia, that a new edition of Gray's Anatomy is soon to appear. In the work of revision, which has been in progress for about two years, Dr. J. Chalmers Da Costa and Dr. Edward A. Spitzka have been associated. Dr. Spitzka has rewritten the portion relating to the nervous system, illustrating it with seventy of his own drawings. The revision of the entire book has been thorough and complete, and in its new form the book will undoubtedly take again the high place which it formerly held in the esteem of the medical profession, both as a textbook and as a book of reference.

Vital Statistics of New York.—During the week ending July 11, 1908, there were reported to the Department of Health of the City of New York, 1,516 deaths, 979 marriages, and 3,009 births. Of the total number of deaths, 739 were in Manhattan, 127 in the Bronx, 549 in Brooklyn, 78 in Queens, and 23 in Richmond. The annual death rate in 1,000 of population was 17.88 for the entire city, 17.13 for Manhattan, 20.23 for the Bronx, 19.19 for Brooklyn, 17.50 for Queens, and 15.65 for Richmond. The total infant mortality, under five years of age, was 600, of which 359 were due to diarrhœal diseases. There were 147 deaths due to pulmonary tuberculosis during the week. There were 156 deaths by violence, 58 from sunstroke, 12 from suicide, 4 from homicide, and 82 from accidents. One hundred and twenty-five still births were reported.

The American Medical Missionary College, which is situated in Battle Creek, Mich., and Chicago, Ill., was incorporated on July 3, 1895. The sole purpose of the college is the training of physicians for medical missionary work, and no students are accepted except those who intend to devote their lives to missionary work. At the time the college was established no similar institution existed, and it is said that this is the first and only successful venture of the sort in the history of medical missionary education. It is nonsectarian. Since the organization and incorporation of the institution 343 students have been admitted, and 177 have been graduated. The college is a member of the Association of American Medical Colleges, and its entrance requirements and curriculum meet the requirements of the American Confederation of Reciprocating, Examining, and Licensing Medical Boards.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 18, 1008:

| 20, 2,00. | Ini | V 11 | luly | 18 - |
|------------------------|--------|------|--------|-------|
| | Cases. | | Cases. | |
| Tuberculesis pubers | | 107 | 481 | 173 |
| Diphtheria | 235 | 33 | 203 | ~ = |
| Measles | 431 | 1.4 | 312 | 13 |
| Scarlet fever | 187 | 16 | 156 | 1 4 |
| Smallpex | | | | |
| Varicella | 47 | | 35 | |
| Typhoid fever | 7.2 | 10 | 50 | 8 |
| Whooping cough | 18 | .3 | 25 | - 1 |
| Cerebrostinal merce to | 6 | ξ. | 7 | 7 |
| Total. | 1 140 | 188 | 1.200 | 2.1.2 |

Changes in the Faculty of the College of Medicine of Syracuse University have been made as follows: Dr. Frank P. Knowlton, associate professor of physiology, has been made professor of physiology; Dr. H. S. Steensland, associate professor of pathology and bacteriology; Dr. H. D. Senior, associate professor of anatomy, has been made professor of anatomy, the been made professor of anatomy; Ernest N. Pattee, M. S., professor of chemistry in the College of Liberal Arts, Syracuse, N. Y., has been made a member of the faculty of the College of Medicine; Dr. Richard H. Hutchings, medical superintendent of the St. Lawrence State Hospital, Ogdensburgh, N. Y., has been appointed lecturer in psychiatry; Dr. Ralpha, N. Y., has been appointed lecturer in orthopædies; Mr. Charles V. Morrill, recently assistant in zoology in Columbia University, New York, has been appointed lecturer in histology and embryology.

Medical Inspection of Schools in Chicago.—During the term of the relative the chool year ending force 20, 1008, the medical inspectors of schools examined 406,019 children, excluding 12,240, or 3 per cent., on account of contagious, infectious, or parasitic diseases. The principal of the contagions of the contagions, 1,680; mensles, 1,250; mumps, 368; impetigo contagions, 1,680; mensles, 1,250; mumps,

360; pediculosis, 1,644; purulent sore eyes, 334; scabies, 860; scarlet fever, 410; tonsillitis, 2,556; tuberculosis, 22; whooping cough, 265; affections of less importance, 1,348. Vaccination was performed on 47,875 school children, and every pupil in the public and the leading parochial schools was examined as to vaccinal status. One hundred medical men were employed in this service. During the last two weeks of the school year a physical examination was made of 4,188 children, 2,214 of whom were found to be defective and were referred to their family physician for treatment.

Changes in the Curriculum of the College of Medicine of Syracuse University.—It is announced that, commencing in 1909, students entering the College of Medicine of Syracuse University must have satisfactorily completed one full year, and on and after October, 1910, two full years, in a science or arts course in a college recognized by the Regents of the State of New York, and in that course and in their preparation for it, a competent course in physics, chemistry, Latin, one modern language and biology must be included. The equivalent of this requirement, that is, evidence of having passed college examinations for admission to the sophomore or junior class in a recognized college by a student possessed of a medical student certificate from the State Educational Department, will be accepted. Hereafter all chemistry, except applied chemistry, will be taught in the new Bowne Chemical Laboratory of the College of Liberal Arts, instead of in the College of Medicine as heretofore.

Personal.—Dr. Fred W. Thyng, of Boston, has been appointed assistant in anatomy in the University of Maine.
Dr. Bertram H. Buxton, professor of pathology in the Cornell University Medical School, and director of the department of experimental pathology, sailed for London re-

partment of experimental pathology, sailed for London recently, where he intends spending the summer. A gold medal was recently presented to Professor Ramón y Cajal by his many friends and admirers throughout Spain. The medal was presented informally, as Professor Cajal objected to a public ceremony.

M. Henri Becquerel has been appointed permanent secretary for the physical sciences at the Paris Academy of

Sciences.
Dr. Timothy J. Reardon, of Boston, sailed from New York for Bremen on July 14th. He intends to devote the summer to inspecting the principal hospitals of Europe, and will spend some time in the new Municipal Hospital in Vienna, which is said to be the largest and best equipped hospital in the world.

A Clean Milk Exhibit at Washington.—The New York Committee of the International Congress on Tuberculosis are making arrangements to make a clean milk exhibit at the International Congress on Tuberculosis, which meets in Washington, D. C., from September 21st to October 12th. Mr. Nathan Straus is preparing for the exhibit a duplicate of the pasteurization plants erected by him in Heidelberg, Brussels, and Berlin, and there will be a small working dairy, with tuberculin tested cows, skilled attendants, and sanitary utensils, shipping cases, and all the necessary appliances for the marketing of clean milk. An excellent opportunity will thus be afforded for a comparative study of pasteurized milk and milk not pasteurized, but clean. The exhibit will also include photographs of dairies, statistical charts, Petri plates of the bacteriology of milk, and illustrations of tuberculin tests for cattle. Among those who are cooperating with the committee in the preparation of this exhibit are Mr. W. W. Law, Jr., the Hon, Seth Low, Mr. V. Everitt Macy, Commissioner Pearson, Professor Moore, of the State Veterinary College, and Professor Stocking, of Cornell University.

The Health of Philadelphia.—During the week ending July 11, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 34 cases, 7 deaths; scarlet fever, 19 cases, 1 death; chickenpox, 8 cases, 0 deaths; diphtheria, 66 cases, 6 deaths; cerebrospinal meningitis, 3 cases, 1 death; measles, 95 cases, 7 deaths; whooping cough, 39 cases, 5 deaths; pulmonary tuberculosis, 104 cases, 28 deaths; pneumonia, 32 cases, 20 deaths; erysipelas, 6 cases, 1 death; puerperal fever, 2 cases, 1 death; mumps, 4 cases, 1 death; cancer, 26 cases, 31 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 7; diarrheea and enteritis, under two years of

age, 107; dysentery, 1; cholera morbus, 4. The total deaths for the week numbered \$385, in an estimated population of 1,532,738, corresponding to an annual death rate of 19.80 in 1,000 of population. The total infant mortality was 214; under one year of age, 181; between one and two years of age, 33. There were 32 still births, 17 males, and 15 females. There was only a trace of precipitation. The temperatures registered over 80° on five days. There were 29 deaths from heat and sunstroke, 19 adults and 10 minors.

The Fifth Pan-American Medical Congress.—Among the papers which will be presented at this congress, which is to be held in Guatemala, Central America, on August 5th to 10th, are the following: Plan for a Pan-American Institute of Tropical Medicine, by Dr. J. Fred Mayer, of New Orleans; Insane Hospital Annex Reformatory and Treatment Sanatorium for Invalids and Demifious, by Dr. C. H. Hughes, of St. Louis; Hyoscine-Morphine Anaesthesia, by Dr. Emory Lanphear, of St. Louis; Present Views of Sanitary Labor and the Immigrant Question of Central America and the Antilles, by Jackson Smith, Esq. of Cincinnati, Ohio; Medical Education, by Dr. Gaynor, of New York; Teaching of Tropical Medicine in the United States, by Dr. J. C. Wilson, of Philadelphia; Beriberi, by Dr. Maximilian Herzog, of New York; Urethral Transplantation, by Dr. J. D. S. Davis, of Birmingham, Ala.; The Use of Eserine Salicylate in Connection with Abdominal and Pelvic Surgery, by Dr. Daniel H. Craig, of Boston, Mass.; Penetrating Wounds of the Abdomen, by Dr. Randolph Winslow, of Baltimore; Relation of General Surgery to Operative Gynæcology, by Dr. Wiley Broome, of St. Louis, Mo.; Head of the Pancreas in Gallstone Disease, by Dr. Herman Tuholske, of St. Louis, Mo.; Some Conditions Demanding Exploratory Laparotomy, by Dr. Dyer F. Talley, of Birmingham, Ala.; My First Experience with Appendicitis Complicating Pregnancy, by Dr. A. L. Wright, of Carroll, Ia.; The Indications for Cholecystectomy, by Tw. William Jepson, of Sioux City, Ia.; Some Special Surgery of the Uterus and Broad Ligaments, by Dr. Henry P. Newman, of Chicago; The Preparation and After Treatment of Abdominal Section, by Dr. Henry T. Byford, of Chicago, Ill.; Operative Treatment in Retrodisplacements of the Uterus in Relation to Subsequent Pregnancy, by Dr.

Channing W. Barrett, of Chicago.

American Public Health Association.—The thirty-sixth annual meeting of this association will be held in Winnipeg, Manitoba, Canada, on Tuesday, Wednesday, Thursday, and Friday, August 25th to 28th, inclusive. According to the preliminary announcement which has just been received, the subjects selected for discussion at the general meetings include the following: Water, sewage, typhoid, sociology of the Middle West, the relation of state and provincial boards to municipal boards and local health officers, housing problems, the extermination of rats, methods of securing general vaccination, measures to promote the health and safety of school children, national and state pure food legislation, hookworm disease, malarial fevers, and health problems of the Canadian provinces. The Section in Vital Statistics, in addition to special papers by registration officials, will consider the adoption of certain rules of statistical practice by which registration work will be guided in the future. The nomenclature and classification of diseases and causes of death will also be considered in detail in anticipation of a possible revision of the International Classification in 1910. The first meeting of the association will be held on Tuesday morning at 10 o'clock, and after the opening ceremonies will adjourn. The general sessions will be held on the afternoons of Tuesday, Wednesday, and Thursday, forenoons, and will hold evening sessions if it is found necessary. The headquarters of the executive committee will be at the Royal Alexandra Hotel. Information concerning local arrangements may be obtained from Dr. E. W. Simpson, chairman of the local committee of arrangements, Winnipeg, Canada. The officers of the association are: President, Dr. Richard Lewis, of Raleigh, N. C.; first vice president, Dr. Gardner T. Schwarts, of Providence, R. I.; second vice president, Dr. Charles A. Hodgetts, of Toronto, Canada; third vice president, Dr. Manuel Iglesias, of Vera Cruz, Mexico; secretary, Dr. Charles

Bith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

July 16, 1908.

- t. Endocarditis,
 2. The Use of Fresh Animal Sera in Hæmorrhagic Conditions,
 3. A Typhoid Carrier Fifty-two Years after Recovery,
- 4. Obliterating Endarteritis: Types and Their Surgical Importance, By Charles F. Painter.
- The Use of Fresh Animal Sera in Hæmorrhagic Conditions.-Leary says that it was early recognized by physiologists that the contact of blood with fresh serum or tissue juices hastened coagula-tion. Weil brought out the facts that the blood serum of horses, rabbits, and beef creatures, as well as human serum, had the power of controlling hæmorrhagic processes by increasing the coagulability of the blood; that beef serum was too toxic for ordinary use; that the serum used should be less than two weeks old; that a dose of 15 c.c. intravenously or of 30 c.c. subcutaneously would obtain results in most cases; that the use of serum locally at the point of hæmorrhage favored clotting; that the increased coagulability of the blood persisted for a period of from fifteen days to several weeks. His studies in hæmophilia satisfied him that in the hereditary type of the disease the results were at the best temporary, that repeated injections were necessary to control hæmorrhages, that the massive type of visceral hæmorrhages was controlled only imperfectly, that the greatest value of the treatment lay in the prophylactic injection of serum before operative procedures were practised. In sporadic hæmophilia and acute purpura, on the other hand, the results were permanent, definite cures usually being obtained. In chronic purpura and pernicious anæmia the effect of injections was only transitory. Salts of calcium have been used as a means of increasing the coagulability of the blood since the work of Arthus and Pages. Wright met with almost uniform success in the treatment of nine hæmophilic families through the use of calcium salts, fibrin ferment, and carbon dioxide. Robertson, Illman, and Duncan, using calcium salts in other hæmorrhagic conditions, were unable to confirm Wright's results either with reference to the shortening of the coagulation time or controlling of hæmorrhage.
- 4. Obliterating Endarteritis.—Painter states that the problem of ameliorating the sufferings of bad cases of erythromelalgia is a difficult one. Elevation of the limb and the enforcement of absolute rest to the part seem to offer the greatest chance of relief. The question of when surgical interference should be practised is one of great difficulty. It seems impossible to determine when an obliteration of vessels, such as is known to take place in erythromelalgia, will have attained sufficient severity to demand amputation. Certainly obliteration of pulsation in the dorsalis pedis vessels is not a condition which indicates it. The sufferings of these patients occasionally justify such radical measures. Ultraconservatism should characterize the treatment of these cases by the surgeon, but he should be ready to interfere when the conditions demand it. In an-

gina cruris, where static disturbances exist, they should be alleviated, but the most benefit will follow vibratory massage and all those measures which are designed to overcome the hunger of the muscles for an adequate blood supply. The gangrenous conditions which result from extreme degrees of arteriosclerosis, whether senile or syphilitic, must be managed by following out all procedures which lessen resistance to the flow of blood, and having determined the limits of viability of tissue supplied by the obliterated artery, the surgeon must remove these parts, where the circumstances call for it, and the patient is in a proper state to withstand it.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 18, 1908.

Disease of the Cerebral Vessels with Its Problems in

Diagnosis, By WILLIAM ALEXANDER JONES.

Cerebral Inhibition with Relation to Motor Function,
By H. A. TOMLINSON.

Imperforation of the Lachrymonasal Duct in the New
Born and Its Clinical Manifestations,

By WILLIAM ZENTMAYER. The Correlation of Clinician, Pathologist, and Layman,

Typhoid Fever. A Summary of One Hundred and Forty-eight Cases, with Reference to the Efficacy of Therapeutic Fasting, By R. M. HARBIN.

Migraine, an Occupation Neurosis,

By George Lincoln Walton.

Ocular Complications of Pregnancy,
By HIRAM WOODS. The Relation of Ocular and Cardiovascular Disease,

By MELVILLE BLACK. Hæmorrhage into the Ventricles,

By ALFRED REGINALD ALLEN. 10. Zonular Opacity of the Cornea, By F. C. HEATH.

3. Imperforation of the Lachrymonasal Duct in the New Born, and Its Clinical Manifestations. -Zentmayer observes that to those familiar with the occurrence of the affection, its diagnosis presents no difficulties; but to the general practitioner, alert to possible occurrence of gonococcal conjunctivitis, the presence of a white secretion in the eye, just after birth, is a disturbing symptom. The absence of inflammatory phenomena, with puffiness of the lids, the benignity of the course, the usual monolateral development, and the scantiness of the discharge, should ease his mind, and if it does not, a microscopical examination of the discharge would. Varied opinions are held concerning the proper management of these cases. Some surgeons, be-lieving that as the condition is one which, in the vast majority of instances, will correct itself in time, presumably without exciting any secondary disturbance, advise a simple collyrium, the use of solutions of silver, of pressure, and massage, until Nature has asserted herself, or for several months before employing operative procedures, others employ probing or syringing. The author favors probing, which is done under different circumstances from those in lachrymal obstruction in the adult. As a rule, no resistance is met with, and the probe readily follows the natural passage, which is inclined much more backward than it is in the adult, a probe making an angle of about 45 degrees with the forchead when

5. Typhoid Fever.--Harbin has treated 148 patients with therapeutic fasting. He comes to the conclusion that the food factor in the treatment of

typhoid fever is the most important practical question to be solved. Toxemia is more marked in cases having gastrointestinal disturbances, and clinical evidences warrant liberal feeding only in a few cases. The chief source of development of the Bacillus typhosus is found in the intestinal canal and the lymphopoietic system. The aim should be to nourish the patient without increasing saprophytosis, and the battleground of treatment lies in the gastrointestinal tract. A greater danger exists from a toxic paralysis of nutritive activity of the cell than from inanition. Any vital organs containing pathognomonic lesion of an infectious disease demand absolute rest. The excessive nitrogenous waste in typhoid fever is not due to the endotoxines of the typhoid bacillus, but probably mixed infections, and the specific typhoid toxine is not necessarily accompanied by high temperatures. Emaciation occurs independently of the amount of food taken and results more rapidly from toxemia than from any lack of nourishment. The patient's life depends on attempting to maintain a normal nitrogen metabolism. The proper food management will shield a patient from the usual dangers of typhoid fever. Sthenic cases furnish the more dangerous types of the disease, and these are more amenable to therapeutic fasting, while ambulatory cases are not less prone to intestinal complications than others. A greater danger arises from septic conditions set up by a hæmorrhage than the mere loss of blood entails. Symptoms are no guides as to the presence of intestinal lesions, consequently patients require more or less routine feeding. Abortive cases show a greater tendency to relapse. Tympanites furnishes an increased area for absorption, and is provoked by any surplus of food, which increases peristalsis. Scientific data prove that clinical diagnoses may be made with a reasonable degree of accuracy. Therapeutic fasting allows an uncomplicated typhoid infection to pursue a normally mild course without any mixed infection, by reducing the bacterial content of the intestines. This was applied only to the severe cases. Fasting will enhance the effect of hydrotherapy, and frequently render the use of antipyretic measures unnecessary. Gelatin is a valuable food in that it lessens the nitrogenous waste and prevents hæmorrhage. The low mortality in this series of cases was greatly due to the elimination of relapses and complications among the mild or abortive cases by restricted feeding and lessening the dangers in sthenic patients by fasting. In this report forty-five consecutive cases occurred without a death. Of the 144 whites, five, or 3.4 per cent., died, and the low mortality, 4.7 per cent., of all cases was ascribed to the dietetic management, though many of the cases had very inefficient nursing.

6. Migraine of Occupation.-Walton remarks that migraine is an occupation neurosis resulting, in individuals of neurotic inheritance, from overuse, or use under the handicap of refractive error, of the parts concerned in vision. It involves, like other occupation neuroses, disturbance of (1) sensory cerebral centres (those of vision in the occipital region); (2) motor cerebral centres (centres of divergence and convergence in the frontal lobe); and, (3) certain muscles (particularly the intrinsic and extrinsic

muscles of the globe, the corrugator supercilii and the occipitofrontalis, and also the muscles which steady the head). The pain of migraine is not necessarily intracranial, but is localized, in part at least, in the region of the muscles concerned, directly or

indirectly, in vision.

7. Eyes in Pregnancy.-Wood states that apart from the various nervous symptoms incidental to pregnancy, which often affect the eye functions, there are four serious ocular manifestations seen more or less frequently during pregnancy or after parturition. These are: (1) The so called uræmic blindness, which is usually seen in connection with eclampsia. (2) What has always been termed the albuminuric retinitis of pregnancy. These are the most common complications. Rarer forms are (3) loss of central or peripheral vision, due, so far as symptoms point, to a retrobulbar neuritis, and (4), a form of neuroretinitis, not essentially suggestive of the albuminuric type, but showing numerous retinal exudates and hæmorrhages. The clinical symptoms of these conditions are reviewed, and the classes are studied from the standpoint of recent pathological investigations in the obstetrical field. There is, in view of these investigations, doubt as to whether the term uræmic should be applied to the blindness occurring in connection with puerperal eclampsia. The same is true regarding the renal origin of what is termed the albuminuric retinitis of pregnancy. There is good reason to think that both the renal and ocular complications are manifestations of the same process-a toxæmia. The third and fourth varieties of ocular complications of pregnancy are also, doubtless, the results of pregnancy toxæmia, a toxic neuritis or toxic thrombosis probably being the active factor in causation,

9. Hæmorrhage into the Ventricles.-Allen reports ten such cases. Four patients had convulsions, rupture of the hæmorrhage into the ventricles and involvement of the optic thalamus. One patient had rigidity, rupture of the hæmorrhage into the ventricles and involvement of the optic thalamus. One patient had convulsions, no hæmorrhagic rupture into the ventricles, but an involvement of the cortex and subcortical white matter of a sensory region. Three patients had no convulsions and no optic thalamus involvement. Two of these had ventricular inundation; one of them had not. One patient had no convulsion and had optic thalamus involvement. His conclusions are: I. Ventricular inundation in cerebral hæmorrhage has no ætiological bearing on the convulsions or rigidity. 2. Purely tentatively and basing his opinion on the findings in ten cases, he concludes that convulsions and rigidity in apoplectiform hemiplegia are frequently due to an involvement of the optic thalamus, or the corticothalamic sensory fibres, with the necessary proviso that enough of the posterior limb of the internal capsule remain uninjured to convey the motor impulses. 3. Convulsions and rigidity in apoplectiform hemiplegia may be caused by a sudden or rapid increase in intracranial pressure due to cerebral hæmorrhage, even though the optic thalamus and the corticothalamic sensory fibres are uninvolved. In such a case there must be a sufficient

preservation of the motor part of the internal capsule for the transmission of impulses to the parts concerned. 4. It is altogether unlikely that pressure or chemical change acting on the motor axons of the centrum or internal capsule-these axons having been severed from their perikaryons by the hæmorrhagic process-could exert a stimulating action sufficient to cause convulsions or rigidity.

MEDICAL RECORD

July 18. 1908.

1. The Standard of Medical Education,

The Ætiology of Paralysis of the Recurrent Laryngeal Nerves of Peripheral Origin,

By D. BRYSON DELAVAN. The Ophthalmoreaction to Tuberculin Tests in Three Hundred and Twenty-one Cases, Including Two Hundred and Fifty Tuberculous,

By Charles N. Barney and Roger Brooke, Jr.

Note on Deutschmann's Serum against Infectious Diseases,
A New and Efficient Method of Room Disinfection.
Preliminary Announcement. By W. B. McLaughlin.

4. Note on Deutschmann's Serum against Infectious Diseases.—Caravia states that Professor R. Deutschmann in his endeavors to evolve a preparation against infectious conditions of the eye, noticed that if horses were fed with increasing doses of sterile yeast for a definite length of time, they acquired a greater power of resistance against microbic infections. With the object of utilizing this fact in the treatment of infectious diseases, Deutschmann was led to draw from the blood of animals thus treated a serum, according to the usual technique. Thus far the results obtained have encouraged him and others, who have been using the serum for the last year or so, in the belief that a valuable weapon has been added to the armamentarium of physicians and surgeons in their combat against local or constitutional infectious diseases. Deutschmann's serum is not a bactericide or an antitoxine, it is a serum neutralizing germs of all kinds; not germs of one kind only. Its action is due to the introduction into the circulation of yeast fed animals of an as yet unknown substance, which seems to be an ultimate result of a series of chemical reactions set up in their digestive apparatus. As long as the animal's health is normal, this unknown substance remains in the circulation unchanged and unutilized. If, however, the animal is exposed to a bacterial infection, the cells of the yeast fed animals will take up this unknown chemical substance, which, by imparting new energy, increases their resistance to the bacterial invasion of the organism. The same action takes place if a serum from yeast fed animals is injected into a patient suffering from microbic infection. The strengthening of the cells and their increased resistance put the infected body on the same plane as that of a healthy one, able to defend itself against invading microorganisms. The dose varies according to the age of the patient and severity of the infection, from 0.75 to 1.0 c.c. in young people. to from 2 to 4 c.c. in adults. The initial dose should be the larger one. One, or at the maximum two days later the injection in smaller doses must be repeated if there is not an initial fall in temperature. In chronic cases one injection of 0.5 to 4.0 c.c. is

given and if necessary repeated, according to the results obtained, two or three times a week, provided no special idiosyncrasy against the serum exists. In such cases treatment must be stopped, to be started again a few days later. The injection is usually given into the cellular tissue. When injected into the muscular tissues preference should be given to the pectoral or abdominal muscles. The serum may be given by the rectum instead of subcutaneously. As the small amount of liquid used may be retained in ordinary syringes, Deutschmann advises the attachment to a Pravaz syringe of an olive pointed capillary catheter, for the rectal injection; in such cases the dose must be doubled. Judging from the results already obtained, it can be said that in Deutschmann's serum we have a valuable therapeutic agent which is destined in the course of time to take a prominent place in the every day practice of those who object to the depresing effects of other

5. A New and Efficient Method of Room Disinfection.-McLaughlin describes the methods of disinfecting dwellings. There are at present three which are used: I. What is known as the "Maine Method," i. e., obtaining formaldehyde gas by mixing 300 c.c. of 40 per cent. solution of formaldehyde and 150 grammes of potassium permanganate for each 1,000 cubic feet to be disinfected. The most prominent exponent of this method is the United States Public Health and Marine Hospital Service. 2. The "Walker Method," which consists in dissolving 20 to 25 pounds of commercial aluminum sulphate in 5 gallons of water, adding to this mixture 15 gallons of 40 per cent. solution of formaldehyde, and liberating formaldehyde gas by mixing 8 ounces of this mixture and I pound of unslaked lime for each 1,000 cubic feet to be disinfected. The most prominent exponent of this method is the New York Health Department. 3. The "Stewart Method," which consists in thoroughly spraying the walls, furniture, and floor of the room with a 20 per cent. solution of formaldehyde gas, and then spraying the mattresses, laying one on top of the other, and then the pillows, bedding, etc. The most prominent exponent of this method is the Philadelphia Health Department. In the first two methods (the Maine and the Walker methods), penetration to any extent is not alleged, and it is the custom both of the Marine Hospital Service and of the New York Health Department to disinfect articles such as bedding, clothing, etc., in the steam autoclave. But in the Stewart method it is stated that the disinfection is sufficiently perfect to render steam sterilization in the autoclave unnecessary. Dr. McLaughlin found that if the gas formaldehyde is mixed with vapor of carbolic acid, the tendency to polymerization does not seem to exist, and that the formaldehyde penetrates as one would expect, i. e., obeys the ordinary law of diffusion of gases. The mixture which he has used is 75 per cent. of a 40 per cent. solution of formaldehyde and 25 per cent. of carbolic acid. He uses 8 ounces of this mixture to 1,000 cubic feet of air space, and allows the room to remain closed twelve hours. He has used a retort to volatilize the mixture, but, as a matter of convenience, usually saturated a sheet and hung it up in the room to be disinfected (an ordinary sheet will hold about 6 ounces of the mixture). He was very successful with his tests.

BRITISH MEDICAL JOURNAL.

July 4, 1908.

r. Some Clinical Aspects of Pain, Especially in Reference to Its Spontaneous Disappearance.

The So Called Family Diseases: Premature Physiological Senescence Localized to Certain Organic Systems,

By F. RAYMOND.

The Present Position of Abdominal Hysterectomy for Fibroids in London, By J. BLAND-SUTTON. The Ætiology of Rickets: A Clinical and Experimental Study,

tal Study,

Clinical Notes on Some Causes of Peritonitis Occurring During the Course of Pregnancy, By A. CUFF.

On the Mental Nerve Area and Its Relation to the

6. On the Mental Nerve Area and Its Kelation to the Greyness of Hair, By G. L. CHEATLE.

7. Streptococcus Infection of Eyelids Treated by Antistreptococcus Serum. Subsequent Removal of Sebaceous Cyst,

By S. SNELL.

Chesticipating

baceous Cyst,

By S. Snell.

The Value of Bilateral Ureterostomy (Shortcircuiting of the Urine) in Advanced Cancer of the Bladder or Prostate, and as an Adjunct to the Removal of the Bladder in Uncontrollable Localized Disease,

By E. H. Fenwick.

1. Disappearance of Pain.—Bennett's conclusions regarding the spontaneous modification or disappearance of pain are as follows: 1. No accurate estimate of the behavior of pain is possible in the absence of a careful study of the temperature of the patient. 2. Sudden or rapid disappearance of pain should never be accepted without reserve on its own account as a sign of improvement. 3. Sudden disappearance or rapid diminution of pain, unless it be coincident with proportionate improvement in the associated symptoms, is often a sign of impending disaster, and not an indication of recovery.

3. Abdominal Hysterectomy for Fibroids .-Bland-Sutton states that the removal of the uterus by the abdominal route, when it is occupied by troublesome fibroids, has become a fairly safe procedure. Yet, like all other major surgical operations, it is attended by certain special risks. One of these is the liability of injuring one or both ureters. Unpleasant sequelæ, and especially that form of sudden death during convalescence which is usually attributed to pulmonary embolism, are more frequent in the practice of those who habitually operate slowly. Another risk is that of the development of cancer in the stump left after subtotal hysterectomy. Such cases fall into four groups: I. The disease was present in the neck of the uterus at the time of the primary operation, but was overlooked. 2. Cancer attacked the cervical stump subsequent to subtotal hysterectomy. 3. The fibroid which necessitated the hysterectomy was really a sarcomatous tumor of the uterus. 4. The suspected growth on the cervix is not malignant, but a granuloma. In performing subtotal hysterectomy for fibroids in women of fifty years and upward, the surgeon should have the uterus opened immediately after its removal and assure himself that the endometrium is free from cancer. The most insidious danger is the occurrence of an encapsuled sarcoma in the guise of an innocent fibroid; fortunately, it is rare. The immediate results of preserving at least

one healthy ovary in this operation are admirable, especially in women under forty years of age, for the retention of an ovary is of striking value in warding off the severity of an artificial menopause. Such a belated ovary remains active and discharges ova if the woman is under forty years of age; above that age it atrophies and menopause symptoms ensue. In a very large number of instances fibroids and pregnancy coexist and no harm ensues, for, though the tumor occupies the pelvis in the early stages, it is so much "part and parcel" of the uterus that as the enlarging organ rises up out of the pelvis it carries the fibroid with it. Ovarian

tumors give more trouble to parturient women than

fibroids, but the latter are far more lethal, as they

frequently destroy pregnant women by sepsis. 4. Rickets.—Findlay has studied the ætiology of rickets and has arrived at the following conclusions: 1. Not one of the many theories which have been elaborated to explain the cause of rickets has been universally accepted, and they all lack, not only from the clinical but also from the experimental aspect, unequivocal proof. 2. It is some error in feeding which, in England and America, is commonly believed to bring about the disease, but it is doubtful, however, if feeding plays any important part in the ætiology of rickets. Experimentally it cannot be caused by improper feeding. 3. By confining young dogs and depriving them of exercise rickets has invariably been induced, as in experiments detailed by the writer, and that although their diet was beyond suspicion, the air which they breathed pure, and their kennels were kept scrupulously clean, whereas control animals allowed exercise, but otherwise similarly treated, did not become affected. 4. Examination of the conditions under which rachitic children are reared reveals one constant and invariable factor in their lives, namely, confinement. Alike, then, on clinical and experimental grounds, the writer concludes that confinement, with consequent lack of exercise, is the main factor in causing the disease. It is possible that there may be a toxine responsible for the immediate results, but without lack of exercise this toxine will not produce any injurious effects.

8. Bilateral Ureterostomy.—Fenwick advances the following propositions: 1. What can be done for uncontrollable and luxuriant benign villous growth of the bladder, in which the patient suffers from exhausting hæmorrhage or uncontrollable pain, or is commencing to suffer from ascending septic changes along the ureters? In such a case bilateral nephrostomy, or, better still, ureterostomy, should be performed, and a fortnight later the bladder should be removed, if the patient's physical condition and future seem to admit of this mutilation. 2. If the bladder is affected by interstitial cancer, which has so invaded the surrounding areas so that no chance remains of removing the organ, then bilateral ureterostomy is wiser, for this will relieve the patient of the agony of urination. 3. If malignant disease is detected early, as it can be by the cystoscope, it is wiser to perform double ureterostomy; and if the physical and renal condition of the patient permit, let the bladder, with or without the prostate and seminal vesicles, be entirely ablated.

LANCET.

July 4, 1908.

- I. Inborn Errors of Metabolism (Croonian Lectures, I),
- On Thoracostomy in Heart Disease,
 Concerning Some Rare but Important Surgical Injuries
 Brought on by Violent Exercise,
 By A. Morison.
 By P. Haglund,
 By A. Castellani.
 By A. Castellani.
 By A. Fatal Case
- Phenomenal Abundance of Parasites in a Fatal Case
- Phenomenal Abundance of Farasasco of Pernicious Malaria,
 A Consideration of the State of the Autonomic Nervous System in Acute Surgical Conditions,
 By A. J. Walton.
 Extirpation of the Lacrymal Sac,
 By O. J. CURRIE.
 Matering Notes,
 By C. T. W. Hirsch.

1. Errors of Metabolism .- Garrod, in the first of his Croonian lectures, discusses our present conception of metabolism. Actual derangements of the metabolic processes follow almost any deviations from the normal health. In addition there is a group of maladies in which metabolic disturbances are by far the most conspicuous features, though the structural changes behind them are scanty or inappreciable. Of such "diseases of metabolism," diabetes, gout, and obesity are the most important. At first sight there appears to be little in common between inborn derangements of function and structural defects, but the difference is rather apparent than real. Very slight structural changes may lead to profound functional derangements, as witness the effects of atrophy of the thyreoid gland. So that under each chemical abnormality or "sport" may well exist some abnormality of structure so slight that it has hitherto escaped detection. Among the complex metabolic processes of which the human body is the seat, there is room for an almost countless variety of such "sports," but the examples that can be adduced are very few in number. The only known anomalies that can be assigned to this class are albinism, alkaptonuria, cystinuria, and pentosuria. That albinism is congenital and persists through life is self evident. The lifelong persistence of alkaptonuria is equally well established, but it may also occur as a temporary phenomenon. Its remarkable staining property allows of its recognition at the very beginning of life. The evidence of the congenital occurrence of cystinuria is much more difficult to obtain. There is abundant evidence that it is present in early childhood, and that it may persist for many years. No direct evidence of the congenital occurrence of pentosuria is as yet forthcoming; it is included in this group on other grounds. Cystinuria is probably the least rare of these four conditions, and it is the only one that can be classed as distinctly harmful, by means of the formation of calculi, due to the insolubility of cystin in urine. All of these abnormalities have one feature in common—the liability to occur in several members of a family, most often in collaterals of the same generation. In albinism there is a defect of substances which are normal constituents of certain specialized tissues, and which serve purposes of much utility to the organism. The essential phenomenon is the absence of the pigments of the melanin group. Three explanations suggest themselves. The cells which usually contain pigment may fail to take up melanins formed

elsewhere. The albino may have an unusual power of destroying these pigments. Or, finally, he may fail to form them.

2. Operation for Heart Disease.-Morison in 1897 suggested the severing of pericardial adhesions for the relief of cor bovinum. Since then, however, he has grown convinced that it was less the tethering of the heart than its bulk and force of systole which were the determining factors in the situation, and that operation to afford room adequate for the free action of the enlarged organ was the primary consideration whether the organ itself were tethered or not. It is often observed that a large muscular heart, usually associated with valvular disease and without extraneous adhesion, will succumb to the mechanical difficulty while possessing apparently an amount of wholesome muscle which should have been adequate to contend with the obstacle in the circulation for a much longer period had it not been exhausted by some other cause. Given such a large heart, powerfully pulsating against hard and resistant structures, what more natural than that the striking and indirectly struck organ should from time to time develop a condition of excitation or erythism in excess of what is normal to it, and that such erythism should be associated with increased systolic pressure, augmented by mental causes due to subjective discomfort in various degree, from uneasiness to pain. We may conclude that one cause, at least contributory, to attacks of angina in aortic valvular disease with hypertrophied heart is direct stimulation of the organ by systolic impact against costal resistance, and this may also be regarded as a cause of the premature failure of the hypertrophied heart so frequently observed in practice. The writer reports the case of a young man, aged nineteen years, who had suffered from aortic valvular disease for a number of years. The heart being greatly enlarged, it was determined to afford it more room to act in while its power was still good, by securing free space for cardiac systole without the incarcerating barrier of hard rib, in the area of thoracic concussion. A V shaped incision, with its descending limb in the centre of the sternum, commenced at the level of the sternal attachment of the third rib. Sweeping round at the level of the seventh rib, the ascending limb of the incision was carried to a point corresponding with its commencement. large flap was thus secured and raised, consisting of superficial textures and muscle down to the ribs. This was turned back and spread between warm, moist towels. The fourth and fifth intercostal spaces were next cleared down to pleura, and the fifth rib, covered by its periosteum and perichondrium, carefully separated from the underlying pleura, and four and a half inches of its length, from the sternum outwards, were removed in three pieces. The sixth rib was similarly cleared, and five and a half inches of it were removed in one piece, its greater arching allowing more easy detachment without injury to pleura. The internal mammary artery required ligature. A small puncture was made in the pleura, while the last portion of the fifth rib was being removed, air being aspirated through it during respiration. The puncture was stitched,

but was not rendered quite airtight thereby. The raised flap was then replaced and accurately applied by alternate gut and horsehair sutures, a drainage tube being inserted at the lower left hand angle of the wound. The patient took the chloroform well. The effect of the operation objectively and subjectively was very satisfactory. The pulsation became less forcible and the blood pressure was lowered. The anginoid pain previously complained of was greatly diminished in amount and intensity.

LA PRESSE MEDICALE.

June 13, 1908.

I. Emergency Treatment of Acute Osteomyelitis of Ado-By HARDOUIN.

The Purgative Properties of Phenolphthaleine, By BERTHOUMEAU and DAGUIN.

3. Treatment of Burns with a Dressing of Horse Serum,
By R. ROMME.

 Acute Osteomyelitis of Adolescents.—Hardouin asserts that the acute osteomyelitis of adolescents is an infectious intraosseous lesion, the treatment for which may be briefly summed up thus:

Trephine always early and freely.

2. Purgative Properties of Phenolphthaleine. -Berthoumeau and Daguin state that phenolphthaleine augments by direct contact the contractility of the intestine and its secretion. A dose of from fifty to eighty centigrammes causes a purgative, and one of twenty-five to thirty centigrammes a laxative effect on an adult without producing any abdominal pain. In children, in doses according to age, it is a satisfactory and inoffensive evacuant. With respect to its action on the intestine it does not appear to provoke notable modifications of the diverse functions.

June 17, 1908.

I. Trade and Dwellings of Washerwomen and their Relations to Tuberculosis, By Professor L. LANDOUZY.

Departmental Disinfection, By Professor J. COURMONT. Physical Properties and Method of Application on High Frequency Currents, By A. ZIMMERN.

Trade and Dwellings of Washerwomen with Reference to Tuberculosis.-Landouzy says that in the Laennec hospital the frequency of tuberculous infection is twice as great among washerwomen as in any other trade, and that the mortality therefrom is twice as great among them as among workers at any other trade in which the cosmic and economic conditions are the same, such as salaries and hours of work. Hence, he concludes that the trade of washerwoman favors tuberculous infection. When these women have become tuberculous they infect their dwellings and create new foci for the dissemination of the disease.

LA SEMAINE MEDICALE

June 17, 1908.

Pelviperitonitic Abscess,

By M. LETARS.

BERLINER KLINISCHE WOCHENSCHRIFT

June 8, 1908.

- Concerning a Special Complication of Myeloid Leu-By FRUGONI.
- The Laryngeal Disturbances in Beriberi,
 By H. E. KANASUGI.

3 A Microsporon Epidemic,

By F. GLASER.

- 4. Concerning the Clinical Signification of the Turgo-
- sphygnographical Tracing of the Pulse,
 By H. Strauss and F. Fleischer.
 Concerning Diphtheric.

 By Max Elemborn.

 Converning Diphtheric. Concerning Diphtheria, By GABRIEL
- Contribution to the Subject of Chronic Diphtheroids of By GABRIEL. the Throat, Fracture of the Distal Phalanx of the Finger as the
- Result of a Laceration of the Extensor Tendon,
 By Felix Davidsohn. Concerning the Treatment of Lupus by Means of Tu-berculin Ointment and Concerning a Specific Skin Reaction Obtained by Rubbing in Tuberculin Oint-By EMIL SENGER
- 10. Concerning Return to a Lower Form in the Embryonal Formation of Blood, By C. 11. Concerning Spirosal, By J. RUHEMANN.
- 1. Complication of Myeloid Leuchæmia.-Frugoni's special complication of myeloid leuchæmia consists of the formation of an intramuscular hæmatoma caused by intramuscular myeloma which he defines as an intramuscular myeloid metastasis. He sums up his observations in the following conclusions: I. In the course of an advanced myeloid leuchæmia a thick intramuscular hæmatoma may appear spontaneously. 2. Both in regard to the way and manner of its appearance and in regard to its course the hæmatoma presents peculiar clinical characteristics. It is a very rare phenomenon and increases the unfavorable nature of the prognosis. 3. The hæmatoma is in no way dependent upon a preexisting, concomitant hæmorrhagic diathesis, the usual symptomatology of which is wanting, but is of local origin. 4. The origin of the hæmatoma is to be ascribed chiefly to the preexistence of an intramuscular myeloma, which together with the special vascular changes furnishes the predisposing anatomical substratum whence the complication is called forth by the action of the numerous actuating causes. 5. The condition of an intramuscular myeloid metastasis is exceedingly rare, the author has found no other example in literature, and seems to support the neoplastic theory of the leuchæmias suggested by Banti.
- 2. Laryngeal Disturbances in Beriberi.—Kanasugi reports seven cases of beriberi with paralyses of the vocal cords or œdema of the larynx, and illustrates his article with drawings that portray the laryngeal condition in each case.
- 3. A Microsporon Epidemic.-Glaser gives the recommendations of His at the dermatological Congress at Bonn, viz:—1. Centralized treatment in epidemics of microsporia. 2. Regular investigation of all classes in an infected school. 3. All boys to have their hair cut short in order that the examination of their heads may be facilitated. 4. X ray treatment of the diseased skin of the head. 5. All diseased children to wear a proper dressing on the head.
- Chronic Diphtheroids in the Throat.—Gabriel reports the case of a woman, twenty-two years of age, who recovered from an attack of diphtheria, but more than a year later continued to complain of her throat and to have occasional attacks of fever. She was also known to have communicated diphtheria to two other persons more than a year after her recovery. Smears taken from her fauces and tonsils showed the abundant presence of Loeffler's bacilli which presented all their characteristics and were virulent for animals.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT June 9, 1908.

- Paratyphus and Melæna of the Newly Born,
- By NAUWERCK and FLINZER. Concerning the Action of Old Tuberculin on Nontuber
 - culous Men,

 Epidemic of Cerebrospinal Meningitis in Pfalz during

 By Hubern

 By Hubern the Spring of 1907, Goître and its Treatment, The Vaginal Cæsarean Section in Practice, By HESSE.
- By LUNCKENBEIN Graser's Operation in Large Umbilical and Ventral By PORT.
 - Stomach Operated on Four Times as the Result of Mistaking Gastric Crises for Stenosis of the Pylorus, By ESCHBAUM.
- Traumatism and Appendicitis, By Vogel.
 A Case of Fibromatous Thickening of the Tendo Achillis,
- By SCHWARZ. By GEBELE. 10. Inflammation of Meckel's Diverticulum,
 11. Restoration of the Peroneus by Silk Plastic, By Kirsch.
 12. Concerning Washing Out of the Bladder,
 13. By Kraus.

 By Kraus.

 By Kraus.
- 13. Treatment of Ozæna. Gargling with Closed Mouth,
- By SCHMIDT. By Peters. 14. Concerning Congenital Word Blindness, 15. Appetizing and Distasteful, By STERNBERG.
- 1. Paratyphus and Melæna of the Newly Born.-Nauwerck and Flinzer report the conditions found at autopsy in a child that died thirtysix hours after birth, together with the findings from cultures, agglutination tests, and experiments on animals. The principal lesions found were multiple circumscribed areas of necrosis of the stomach, associated with inflammation and ulceration, slight swelling of the spleen, otitis, cholecystitis, and a hæmorrhagic diathesis. The tests seemed to show that the cause was a primary blood infection with the Bacillus paratyphosus B.
- 2. Action of Old Tuberculin on Nontuberculous Men .- Hamburger asserts that Koch's old tuberculin exhibits a demonstrable toxic action only in the tissues of men who have either active or latent tuberculosis, and that it is apparently nonpoisonous to those who have no tuberculosis.
- 6. Graser's Operation for Large Umbilical and Ventral Hernias.-Port has performed this operation, which was brought forward by Graser in 1906, in seven cases, three of them over a year ago. In these three patients the abdominal wall continues to be firm, and he strongly recommends the operation for all large hernias of this nature
- 7. Stomach Operated on Four Times as the Result of a Mistake in Diagnosis.—Eschbaum reports a curious case in which a man, thirty-seven years of age, had suffered for four years from sudden attacks of severe pain in the region of the stomach, associated with vomiting of sour tasting material. The symptoms were so indicative of stenosis of the pylorus that on four separate occasions the pylorus had been investigated surgically without benefit. Finally the diagnosis was determined to be "gastric crises in tabes dorsalis.
- 8. Traumatism and Appendicitis.-Vogel reports a case which strongly supports the view that appendicitis is caused by traumatism. A man heard a wagon coming behind him, turned sharply, and at the same time sprang to one side. He was immediately seized with severe pain in the region of the cœcum, was operated upon within a short time, and the appendix found to be torn in two with the fragments widely separated.

9. Fibromatous Thickening of the Tendo Achillis. Schwarz reports a case in which a fibroma in which the fibres were loosely arranged was removed from the tendo Achillis of a man, forty-one years of age. As regards the ætiology, Vogel is uncertain whether the growth was due to rheumatism, to an accidental injury of the tendon, or to a combination of both these factors. No salts of uric acid could be found in the tumor.

10. Inflammation of Meckel's Diverticulum .-Gebele reports the case of a woman, forty-eight years of age, who was operated upon for perforation of the appendix vermiformis and diffuse suppurative peritonitis, and found to have instead a purulent inflammation of the Meckel's diverticulum, which had ruptured.

ANNALS OF SURGERY

June, 1908.

- Reminiscences of the Early Days of the American Surgical Association, By J. E. Mears. Psychical Endresults following Major Surgical Operations, By J. G. MUMFORD. Psychical Aspects of Graves's Disease, By G. CRILE.
- Treatment of Perforated Peritonitis,
- By J. B. MURPHY.
- Late Results after Operations for Benign Diseases of Stomach and Duodenum, By B. G. A. MOYNIHAN. A Study of Gastric and Duodenal Ulcers,

 By W. J. MAYO. Endresults following Operations or Benign Diseases
- of the Stomach and Duodenum, By J. B. DEAVER.

 How Frequently do Gastric Ulcers become Carcinomata?

 Gastric and Duodenal Ulcers Secondary to Wounds of the Urinary Bladder.

 By J. B. ROBERTS.

 Lifetitle Management Changing & Dulawing By J. B. ROBERTS.
- 10. Infantile Hypertrophic Stenosis of Pylorus,
- By F. E. BUNTS. 11. Melanotic Sarcoma of the Common Bile Duct,
 By F. J. Shepherd.
 12. Experiments in Flushing the Intestinal Canal,
 By G. H. Monks.
- 13. Primary Carcinoma and Sarcoma of the Appendix, By R. H. HARTE,
- Carcinoma of the Appendix with Metastasis to the
- Ileocolic Glands, By R. G. LE CONTE.
- Ileocolic Glands,

 Splenectomy in Banti's Disease,
 By J. E. SUMMERS, JR.

 16. Stone in the Bladder Associated with Intermittent
 Pneumaturia,
 By A. T. Bristow.

 17. Results of Operations on the Kidney for Calculus and
 Tuberculosis,
 By A. J. McCosh.

 18. Stone, Tuberculosis of the Kidney, and Perinephric
 Abscess,
 By G. T. VAlcohan.

 19. Report of a Case of Large Renal Calculus
 By D. Barron.
 By D. Barron.

- By D. BARRON. 20. Primary Carcinoma of the Female Urethra,
- By L. S. McMurtry.

 21. Pelvic Abscess with Special Reference to Rectal
 Drainage.

 22. Treatment of Fractures of the Femur, By O. H. Allis.

 23. Modern Medicine and Surgery in the Orient,
 P. J. F. Modern

By J. E. MEARS. 4. Treatment of Perforative Peritonitis .-Murphy considers three forms of peritonitis, chemical, mechanical, and bacterial. The first apparently has no microbes. The sources of infection in more than 90 per cent. of the cases are the appendix and the pylorus. Early in the disease there is acceleration of absorption, later this process goes on more slowly. The term free peritonitis should be used for the diffuse form, and circumscribed for the encapsulated form. The modern treatment of general septic peritonitis has greatly reduced the mortality. The Lewler position should be used both before and after operation. The relief of pus tension is the first surgical step in retarding absorp-

tion in all acute infections. Drainage should be initiated as quickly as possible. Proctoclysis carefully administered is very important. Opium and coal tar products should not be given before or after operation. Ileus is a frequent and annoying symptom. There should be early diagnosis and early intervention, anæsthesia should be brief, and there should be the slightest possible trauma to the peritonæum. The blood pressure should be restored, sepsis eliminated, and absorption inhibited by position.

- 5. Late Results after Operations for Benign Diseases of the Stomach and Duodenum.-Moynihan submits the following points: I. The operative treatment of stomach disorders should be confined to those cases in which an organic lesion is present. 2. In acute perforating ulcer, the perforation should be closed or the ulcer excised. This is all important if the ulcer is on the lesser curvature. Gastroenterostomy should be performed if the ulcer is prepyloric, pyloric, or duodenal.. 3. When a nonmalignant lesion is discovered, the proper treatment will depend upon its position in the stomach. Excision should be performed if the ulcer causes no obstruction to the onward passage of food. 4. In addition to gastroenterostomy, an ulcer should be infolded when possible. 5. The posterior no loop form of gastroenterostomy with almost vertical application of the bowel to the stomach is the most satisfactory method. 6. Regurgitant vomiting follows the loop operation whether anterior or posterior, but this may be relieved by enteroanastomosis. The vomiting of bile may be relieved by lavage, and after a time may disappear entirely. 7. In hour glass stomach the two lesions, one in the body of the stomach and the other at the pylorus, may necessitate a double operation.
- · 7. Endresults Following Operations for Benign Diseases of the Stomach and Duodenum .-Deaver analyzes his work in this field, and draws the following conclusions, influenced by the immediate dangers in the different varieties of operation: 1. The operation of choice should always be performed when feasible, otherwise the operation of necessity must be performed. 2. All cases of stenosis of the pylorus, whether due to neoplasm, cicatricial contraction, hyperplasia, or pylorospasm, should be subjected to operation, preferably to posterior gastrojejunostomy. 3. All cases of ulcer of the stomach which do not promptly respond to medical treatment, and the various sequels of this disease, should be treated by operation. 4. All cases of ulcer of the duodenum which do not promptly respond to medical treatment should be subjected to operation. 5. The author's preference in performing gastroenterostomy is by the posterior gastrojejunostomy, no loop, clamp route.

ARCHIVES OF PÆDIATRICS June, 1908.

- Intestinal Intoxication in Infants,
- By R. B. KIMBALL. By F. H. LAMB.
- Some Advances in Infant Feeding.

 By P. G. Heinemann.

 The Serum Treatment of Cerebrospinal Meningitis,

 By L. E. La Fétra.
 - Symposium on Rheumatism in Children, PHILADELPHIA PÆDIATRIC SOCIETY.
- 1. Intestinal Intoxication in Infants.--Kimball emphasizes the greater importance of this con-

dition in children than in adults. Many lives are sacrificed on account of ignorance upon this subject. Many supposed cases of meningitis, cerebral hæmorrhage, and other grave central conditions are due to intestinal reflexes alone. The author does not include cases which are accompanied by diarrhœa, but only those in which the poison is locked up within the bowel, with rapid absorption. Only heroic measures in such cases will cause the bowel to empty itself. The treatment for these cases should consist mainly of cathartics, and of these calomel and castor oil in large, even heroic doses, are to be preferred. Pure castor oil may be given every few hours for several days without fear. Enteroclysis should be used in these cases if the temperature is high, and if there are bloody stools and tenesmus. In delicate babies it is a dangerous procedure. In severe toxic cases irrigation should supplement cathartics, and the bowel should be thoroughly washed out. Concerning food, fresh milk should not be given until all traces of infection have disappeared. The author prefers a diet containing equal parts of animal broth and cereal decoction; in other words, chicken, mutton, or veal broth, with equal parts of granum, barley, or arrowroot gruel. The last is to be reserved for cases of diarrhœa. In acute cases give only pure water, or albumin water containing also a little brandy.

2. Some Advances in Infant Feeding.-Lamb summarizes his paper as follows: 1. The most important thing in infant feeding is to know the amount taken in twenty-four hours. The only way to do it is to calculate energy quotients. 2. The percentage method is uncertain and complicated. 3. The quantity of food and not the percentage is desirable. 4. Overfeeding is the commonest cause of nutritional disturbance, and is a clinical entity. 5. Fat in cow's milk is to be feared. 6. Fat causes constipation, proteids do not. 7. Curds in stools are not proteid, but calcium soaps, fatty acids, or fats. 8. Casein is not difficult to digest, does not cause digestive disturbance, nor undergo putrefaction in the intestine. 9. The new born infant can digest starch. 10. Dextrins and starches are valuable additions to milk feeding. 11. The volume of a child's food should depend on its weight and should never exceed 36 to 38 ounces. 12. The interval between feedings should never be less than three hours, and after the third month of life should be four hours.

3. Sanitary Milk .- Heinemann repeats that the sterilization of milk with destruction of its harmful bacteria is not sterilization in the modern bacteriological sense. The disadvantages of treating milk by heat after pasteurization, from a bacteriological point of view, are more pronounced than they are after sterilization. Pasteurized milk is not fit for consumption after twenty-four hours. Pasteurization does kill the pathogenic bacteria. Clean milk may be and has been produced, which will remain sweet for two weeks or even longer. The great trouble is that it is very expensive to produce sanitary milk, and the price must be raised if it is to become a profitable business. Model dairies must have competent, that is, educated, managers. The public at large is urged to take greater interest in this question.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE $July,\ 1908.$

I. Disease of the Primary Motor Neurones Causing the Clinical Picture of Acute Anterior Poliomyelitis: the Result of Poisoning by Potassium Cyanide.

By JOSEPH COLLINS and HARRISON S. MARILAND.

2. The Significance of Phrictopathic Sensation,

3. Tumor of the Frontal Lobes with Symptoms Simulating Paresis,

By F. X. Dercum.

1. Toxic Effects of Potassium Cyanide upon the Peripheral Motor Neurones.—Collins and Martland report such a case. The patient, an Italian, thirty - eight years old, was admitted to the City Hospital, December 3, 1906. Since coming to this country, in 1904, he had been working as a silver polisher in a hotel. The method of keeping silver bright in such establishments is to drop it into a solution of potassium cyanide and then dry it. He says that his hands and forearms were in such solution so much of the time that they took on a deep brownish red color, and he frequently complained of a distressing itching sensation in them. In addition to this, the finger nails were quite black. He does not know how strong the solution of potassium cyanide was that he used, but he says that he had to be careful to keep his hands away from his nose or his mouth, for otherwise he would get very dizzy. On the seventh of September, 1906, he was seized with diarrhœa, which soon became very severe, the passages containing large amounts of mucus, but no blood. The following day he complained of severe headache, of pain and stiffness in the back of the neck, and of feeling ill. He was then taken to a hospital, and it is said that for a few days he was mildly delirious and had such meningeal symptoms as stiffness of the neck, retraction of the head, and sensitiveness on being handled. These symptoms continued for four or five days. there developed a sensation of stiffness of both ankles and severe pain in the legs below the knees. Within forty-eight hours his legs and arms were so weak that he could scarcely move them, and from that time he was unable to stand or walk. About this time he had retention of urine and had to be catheterized for more than a week. After that he had difficulty in expelling the urine, but he got on without having a catheter passed. At this time he did not complain of pain or paræsthesia, the symptoms were entirely of the motor apparatus, nor were there any trophic symptoms apparently. His best recollection concerning the atrophy of the muscles, which was so conspicuous on his entrance into the City Hospital, was that it was first noticed about eight weeks after the onset of his disease. The trapezii were involved to a slight extent. The supraspinati and infraspinati muscles, the serratus magnus, the deltoids, the biceps to a considerable degree, and the triceps were conspicuously atrophied. The plantars and the extensors of the forearm were also very much shrunken. In the lower extremities the muscles chiefly involved were the anterior tibial group and the posterior calf muscles, the vasti and quadriceps. For about six months there seemed to be no indication of recovery. Then gradually the atrophied and paralyzed muscles began to display functional capacity. From the experimental work which

the authors have undertaken to show the effects of potassium cyanide upon the peripheral motor neurones, they are led to the belief that the entire motor neurone is affected, the neuraxone, however, more than the cell body, but the participation of the cell body in the destructive process is fairly certain, and this participation accounts for the occurrence of spinal cord symptoms in our patient. That the atrophy, however, that is, the degeneration in the muscles, is not primarily dependent upon spinal cord lesion, is best testified to by the distribution of the atrophy. It would have to be an extremely extensive process in the spinal cord, and such extensive lesion would cause symptoms that did not occur in this case. Moreover, the degree of recovery which has taken place indicates that the cell bodies of many of the peripheral motor neurones, which at first seemed to be very profoundly diseased because of the amount of atrophy, are in reality in possession of sufficient vitality to assist in the regeneration of the diseased neuraxons.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of April 27, 1908.
The President, Dr. J. Riddle Goffe, in the Chair.
(Concluded from page 140.)

The Prevention of Fœtal Infection by the Eyes, Mouth, or Umbilicus.—Dr. J. CLIFTON EDGAR read this paper. The prevention of infection by careful cleansing of the mouth immediately after the expulsion of the head was often overlooked. Cleansing of the infant's mouth at this time was especially called for after delayed or tedious labor and in instances of gonococcus elytritis in the mother. In the former case, by reason of the prolonged labor, not only did the vaginal secretions undergo changes, but an ante partum subæration of the fœtal blood, or asphyxia neonatorum, caused attempts at respiration on the part of the fœtus within the birth canal, with a consequent aspiration of maternal secretions into its mouth and pharynx. Hence the importance of mouth cleansing. It was his belief that there was no special value in chemical antiseptics for this purpose, but the aim should be to remove the foreign substances mechanically as thoroughly and at the same time as gently as pos-Roughness and carelessness in this connection only defeated the aim by causing abrasions of the delicate buccal mucous membrane, and thus predisposing to subsequent infection. Immediately upon the expulsion of the head, and even before the evelids were cleansed, the lips and nose were wiped free from mucus and foreign substances, and then the little finger, wrapped with a piece of gauze or, better, clean old linen dipped in a boric acid solution or plain water, was passed into the child's mouth, and any accumulated mucus, blood, or meconium removed by an outward sweep of the finger in each cheek

Each evelid of the infant should be carefully

cleansed by means of a piece of old linen and sterile water or boric acid solution. A separate wipe should be used for each eye, and the lids gently washed from the nose outward. Ophthalmia neonatorum produced from seven to ten per cent. of the existing blindness to-day, and only recently Mr. Simon Snell had reported that, of 333 inmates of the Sheffield School for the Blind, 136, or 42.36 per cent., had been blinded by ophthalmia neonatorum. Among the children registered in the New York State School for the Blind during the past four years, twenty-six per cent. had their blindness assigned to ophthalmia neonatorum. The midwife was largely responsible for these amazing figures. The gonococcus was found to be the cause of the infection in sixty per cent. of the cases. If at the time of birth, and before the eyes were opened, the lids were carefully and gently cleansed from within outward with gauze or absorbent cotton moistened with sterile water, and a separate wipe was used for each eye, and if subsequently, in greasing or washing the child's body, pyogenic germs were not conveyed from the body to the eyes, ophthalmia neonatorum was reduced to a very small percentage of incidence. If this was supplemented with a drop of a solution of one of the silver salts dropped on the cornea of each eye, the vitality of the gonococci that had escaped the cleansing, and found entrance between the lids, was destroyed, and the chances of the eyes escaping infection were raised to the highest point. Which silver salt to use and in what percentage were still debatable questions. During the past few years he had done much clinical experimentation with the various preparations, and he believed that much was yet to be learned concerning their use. During this time he had experimented in institution work and in private practice with seven different silver salt solutions. lieved that a solution of silver nitrate of proper strength and correct application would guard the baby's eyes from infection.

The death of infants early in their lives, without assignable cause, should always make one suspect infection through the umbilical vessels, resulting in purulent thrombi of the intraabdominal portion of the vessels. The protection of the infant from umbilical infection demanded the following conditions: That the cord be handled only with clean hands; that sterile ligatures and scissors be used in the ligation and cutting of the cord; that the raw stump be immediately covered with a piece of sterile gauze and the infant wrapped in a sterile towel, or at least in a freshly laundried one, until such time as the third stage of labor was completed and a permanent umbilical dressing could be applied; that a lubricant, and not a tub bath, be used for the first cleansing of the child and the removal of the vernix caseosa; that subsequent cleansing of the infant should be by sponging and not tubbing, until the umbilical wound had healed; that a permanent aseptic umbilical dressing be applied at birth, which should remain if possible undisturbed, until the stump of the cord should separate. As used in the tenement house service, the umbilical dressing consisted of: 1. A flannel abdominal binder thirty inches long by six inches wide, which was intended in the average

case to surround the infant's abdomen two and a half times. 2. A gauze dressing of four folds, three inches square, with the edges turned in and split from one edge to the centre. 3. Two small safety 4. Two pieces of narrow bobbin tape. 5. A small gauze wipe for the stump. 6. A pair of blunt pointed scissors. The routine was to tie the cord with as little traumatism as possible, and after the baby had been greased with sterile lanolin and the vernix caseosa removed as thoroughly as possible, the stump of the umbilical cord was placed in the split gauze dressing and the latter folded carefully over the stump; the binder was then applied and held in place with two safety pins. Unless the binder became soiled, it was left in place until the fifth day. In a series of 1,600 infants in this hospital, including 1,000 cases in the east side tenement houses and 600 in the hospital building, treated by this method, so far as was known there had not been a single case of umbilical infection. In these 1,600 cases, the average time of separation of the umbilical

stump was on the sixth day. Dr. WILLIAM S. STONE believed that the men who devoted themselves exclusively to the practice of obstetrics could be counted upon the fingers of the two hands, and probably the supply equalled the demand; there did not seem to be any demand for more. Consultation work in obstetrics was largely emergency work and was mostly limited to the latter part of labor, or to puerperal sepsis. Consultations for the consideration of conditions occurring during labor had a limited demand. Outside of the occurrence of convulsions, it was not considered necessary to ask for a consultation. He wished to call attention to one or two points. There were a number of cases constantly occurring in New York and elsewhere in which a normal woman gave birth to an eight and a half, or nine, or ten pound baby, and died after a prolonged forceps operation, and these were the cases which every one regretted, because it could not be seen how we were going to prevent them. Three, four, or five years ago he had started a study of the relative size of the fœtal head and the pelvis, and he had learned that, either by palpation or actual measurement by the so called suprapubic pressure method, he could tell with great accuracy the relative size of the fœtal head and the pelvis. This method of determining whether or not the head could go through a given pelvis, whether he spoke of it in public or in private, had been treated with indifference by his colleagues. Since then he had limited his consideration of the subject to its actual demonstration upon a few patients. This subject he believed to be worthy of more consideration; he thoroughly believed that there was no excuse for a woman's giving birth to an eight and a half, nine, or nine and a half pound child, and the child being born dead.

Dr. RALPH H. POMERGY, of Brooklyn, said (by invitation) that the Pomeroy bags must be used with great discretion, because of their great dynamic capability; used indiscriminately they might lacerate the cervix. So long as the general practitioner expected to do obstetric work, the family would expect it to be done by the general practitioner, and if there was any fault to be found with this arrange-

ment, the fault was not with the family, but with the family doctor. The general practitioner erred in not considering his own pocketbook sufficiently, and would not call for a consultation early enough to benefit the patient. The more one contemplated the fact that writers, speakers, and teachers in obstetric work were practically, as they grew older, developing into gynæcological surgeons, the more one realized what a difficult situation the teachers occupied in this matter. With regard to expressing the placenta, personally, he favored expressing it, not after half an hour of waiting, but with the first possible reasonable contraction one could get, whether the patient was under an anæsthetic or not. Detachment of the placenta occurred, if it was detachable, with uterine contraction. In every case in which he had to invade the uterine cavity to extract the placenta, the interference with its expulsion was almost always due to retraction of the contraction ring and not to any attachment of the placenta. One of the meanest hæmorrhages met with in consultation was the concealed one, in which there were a relaxed uterus and an unexpelled placenta.

Dr. George L. Brodhead emphasized the great importance of the constant observation of these patients, the regulation of the diet, and the frequent examination of the urine, as well as insisting upon the advantages of exercise up to the very day of confinement if possible. He was sure that many cases of dystocia, due to a large fœtus, especially where the pelvis was small, could have been avoided if the patient had been instructed in regard to her diet. Dr. Norris had brought out an interesting point with regard to scopolamine. The speaker had used it many times, but the results had not been encouraging; chloral and morphine gave better results in his hands. No greater advance had been made in obstetrics than by the use of the dilating bags. The bags should be used oftener than they He agreed with Dr. Cragin that the more external examinations were made, and the less frequent the internal, fewer cases of sepsis would re-With regard to the treatment of retained membranes, for the past twelve years he had not inserted the hand into the uterus to remove them. One could not be sure that he was not introducing germs when the uterus was invaded for the removal of small pieces of membrane.

Dr. JOHN O. POLAK, of Brooklyn, said (by invitation) that he believed that not sufficient attention was given by the general practitioner to the prevention of fœtal mortality, and there was probably no class of work where the life of the individual, such as the child's life, was considered of less weight than in obstetric practice, and this was probably due to two reasons: I. The woman did not come under observation early enough, and even when she did, the practitioner was careless in controlling the child's growth. 2. There was a prejudicial influence upon the practitioner's judgment as to the best procedure in the interest of the child. Tardy management was bad. It was well to recognige malpositions early, especially the occipitoposterior positions, which were so frequently overlooked, and so jeopardized the lives of the children.

With regard to the repair of lacerated cervices,

he wished to enter a protest against the repair at the time of labor in general practitioners' hands. He had never repaired a lacerated cervix immediately after delivery except in the case of hæmorrhage. With regard to the use of ergot he had gone through the period where he had used it, discarded it, and used it again; he now used it after labor, because it retracted and contracted the uterus and so tended

to prevent septic absorption.

Dr. W. GILL WYLLE believed that a good gynæcologist should be a good obstetrician; these two could not be well separated. The most important part of a woman's life was the time when she had her first baby; after the first time labor was simplified, and he hoped to read a paper on this subject shortly. Surgical principles should be applied in obstetric work, the same as after important opera-

tions, such as hysterectomy.

Dr. A. Ernest Gallant illustrated a method he had used during the past fifteen years to keep the navel aseptic. The navel should be treated as a surgical wound was treated. With the application of the dressing he presented, there should never occur any jaundice or infection. In 1900 a series of cases were subjected to experimentation; every other case was treated with the dressing applied; the others were treated in the ordinary way. In not one of the cases treated with the dressing did any jaundice or infection occur.

Dr. J. MILTON MABBOTT emphasized the importance of always warning the woman to keep her hands away from her vulva during the first few days after delivery. He reported the case of a woman who had been under his care and who said she had examined herself within twenty-four hours after delivery to learn how different she was then from before. She was attacked with pyæmia and died as the result. He said he was strongly of the opinion that massage of the breasts in mastitis was an injurious procedure. It was not indicated except to express the milk; it was no more indicated than massage of the parotid gland was in mumps.

Dr. Norris said that one was consulted in emergency work for conditions that most often called for the rapid evacuation of the uterus; these were cases of uneffaced cervix, the lower segment of the uterus unopened, the cervix elongated, the woman comatose or eclampsic or in convulsions, etc. These were the conditions met with which required the rapid emptying of the uterus. With regard to the amount of time consumed in dilating with the Pomeroy bag, it should be borne in mind that this was a slow procedure, especially in primiparæ. After dilating the cervix to about eight cm. he introduced the Pomeroy bag, and in about thirty minutes the entire birth canal was dilated so that the child could be extracted with forceps without laceration. In the ordinary cases one, two, or three hours might be consumed in this dilatation, if it was to be a safe procedure.

Dr. Cragin said he wished to call attention to the fact that he said he advised massage of the breasts when mastitis threatened. There were many cases in which the breasts were distended, the ducts not being freely opened, in which massage would empty the breast, opening the ducts so that the discharge would be free.

Metters to the Editors.

PYLORIC INSUFFICIENCY.

NEW YORK, July 10, 1908.

To the Editors:

In the *Journal* of May 30th Dr. Mark I. Knapp complains of the fact that his works on pyloric insufficiency were not mentioned in my communication in the *Journal* of May 16th.

The fact is that the said communication was such a short one that I had no intention of going extensively into the bibliography. I mentioned Serré and Ebstein, who, according to A. Mathieu, were the first to call attention to pyloric insufficiency. In my manuscript I used the word first, but for some reason, owing probably to a printer's mistake, this word was omitted from the print. As the sentence in my article reads now, Dr. Knapp has ground for complaint. Since, however, Dr. Knapp's works on the subject have been recalled to the attention of the readers of the Journal by Dr. Knapp himself, I suppose that the wrong is thereby repaired, and the matter can be considered as settled.

E. Palier.

A MONSTROSITY.

119 EAST SEVENTY-SIXTH STREET, New York, July 14, 1908.

To the Editors:

A description of this monstrosity may be of interest. The child, female, born at term, had no parietal bones. The cranium terminated in an irregular ring formed by the frontal, temporal, and occipital bones, and from this ring protruded a mass of brain substance, covered by the membranes. This mass projected beyond the edges of the bony ring like a cap. The scalp ended at the edge of the ring, where the skin was firmly attached to the irregular edges of the bone, forming a smooth cushion. The cerebral mass protruded nearly half an inch above the top of the frontal bones, and the dura was thick and tensely drawn over the mass, so that pulsating folds were distinguishable. Pulsation could be felt all over the mass, but the slightest pressure caused the child to cry. A hæmorrhagic exudate from innumerable capillary points on the dura began a few minutes after birth and persisted until the child's death, fourteen hours later. During this time the child cried, was quiet when fed, slept, and was otherwise apparently normal. After death the cerebral mass contracted somewhat, but still formed a protrusion above the ring of bone. Delivery was uneventful. The membranes ruptured twenty-four hours before labor pains began, and labor lasted altogether less than three hours. The mother had two falls during the seventh month of pregnancy. Once she slipped off a chair, sitting down heavily, and a few days later she fell upon her abdomen. She also had several bad falls before these, once falling from a low ladder upon her hip. Her first child, now seventeen months old, is healthy.

I. L. NASCHER.

New Inventions.

A RETRACTOR FOR MINOR SURGERY. By Andrew J. Gilmour, Ph. B., M. D., New York.

This minor surgery retractor consists of a ring and a rod ending in a tenaculum. The entire length is two inches. The ring is three quarters of an inch in diameter, with a breadth of three sixteenths of an inch.

The rod, which is very delicate, projects from the side of the ring at a right angle to its tangent. Its length is one inch, but at five eighths of an inch from the ring there is a slight bend of the rod upward, so that the remaining three eighths of an inch will be parallel with any flat surface upon which the



retractor may lie. At its end the rod spreads into three tenacula; these are exceedingly sharp and small, and are designed to bury themselves well into the tissues.

These tenacula are turned downward at a right angle for one eighth of an inch, and for this distance are parallel to the perpendicular diameter of the ring. The tips are then turned inward at a little less than a right angle, and form teeth which are one sixteenth of an inch in length. The ring is to be worn on the little or ring finger, which will allow one to make traction on the wound and at the same time have the thumb and forefinger free for the use of the thumb forceps or manipulations which the exigency of the case may demand. The upward bend of the rod allows it to lie flat on the surface next to the wound. The right angle arrangement of the tenacula fits better in an incision, a great advantage over the bulging of rounded tenacula. These last two facts, combined with the small size of the instrument, give an unobstructed view of the field of operation.

The object of these retractors is to avoid the necessity of an assistant in such operations as the removal of small tumors, opening of infected hands and tendon sheaths; and also to give the greatest possible view of the limited operative field. Although of very delicate construction, they are made of hand forged steel, and by tests have been shown to stand a tension of at least twenty-five pounds.

133 EAST FIFTY-SEVENTH STREET.

Book Aotices.

(We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.)

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M. D., F. R. C. P., Consulting Physician to Gry's Hospital, etc. Eighth Edition. London: J. & A. Churchill, 1908 (through P. Blakiston's Son & Co., Philadelphia). Pp. xvi-1111. (Price, \$6.40.)

The popularity of Dr. Taylor's excellent manual

is sufficiently attested by the fact that eight editions of it have been issued in as many years. The eighth edition has been thoroughly brought into accord with the present state of our knowledge, and much new matter has been added. Necessarily the book is condensed in style; that was required to keep it within the bounds consistent with comfortable handling. The condensation, however, has not been made too pronounced.

Acute rheumatism is classed among the infectious diseases, perhaps properly, but in the paragraph devoted to its ætiology we find nothing suggestive of infection. The section on paratyphoid fever is brief but very satisfactory. The subject of typhoid fever is well handled, though, in accordance with the present British custom, precedence is given to the name "enteric fever." On page 7 the author seems to extend the meaning of the term bacteriology so as to make it cover the study of all pathogenic microorganisms, whether vegetable or animal, by a sort of metonymy which appears to us to be of doubtful propriety. His remarks on tetanus antitoxine seem to us to verge on unwarrantable skep-The term equinia is used, on sufficient authority, as a name for glanders, but the reader might have been told that it also meant horse pox. We do not find the expression cardiac arrhythmia employed anywhere in the book. Uncinariasis, too, is not mentioned, but the fact that the parasite to which it is due is distinctively American may well enough account for the omission. McBurney's point is indicated as "a point about three inches from the right anterior superior spinous process, on a line drawn from this process to the umbilicus," but it is commonly spoken of as a little nearer to the iliac spine. There are eight Röntgen pictures in the book. Most of them show nothing useful, so far as we can see, but we are inclined to say the same of the great majority of the "skiagrams" with which medical publications have been adorned for some years past.

So much for the few points in the substance of the book that seem to us unsatisfactory; now for some of the verbal blemishes that we have noted. In common with almost all contemporary writers, Dr. Taylor says case when he means patient; he states that over half the "cases" of pronounced diabetes die of coma. Of course, this is simply carelessness, for he knows well enough that a case cannot die. He clings to the obsolescent word tinea, one that seems dear to the British heart; he says "Argvll-Robertson pupil," as if two men, one named Argyll and the other named Robertson had described it, in which case the use of the hyphen would be proper; and he employs the words morphia, atropia, and strychnia, which many years ago were dropped from the British Pharmacopæia, where they originated. On the other hand, we have to commend him for spelling lymphangeioma and leuchæmia correctly, although he does say "septicæmia.

The mechanical features of the book are most creditable to the publishers, and the index is excellent. The criticisms which we have made must not be interpreted as denoting that we have not a high opinion of the work; indeed, we regard it as of great value.

A Textbook of the Practice of Medicine. For Students and Practitioners. By James Magoffin French, A. M., M. D., formerly Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Third Revised Edition, Illustrated by One Hundred and Ten Engravings in the Text and Twenty-five Full Page Plates in Tints and Colors. New York: William Wood & Co., 1007. Pp. Nyil-1252. 1907. Pp. xxii-1253.

This edition has been so thoroughly revised that the book is practically a new one, and we therefore make no apology for devoting to it a considerable amount of space, especially as it is of such great excellence. Indeed, not since the late Dr. Austin Flint's treatise appeared have we met with a work on the practice of medicine, written by a single author, that has seemed to us so satisfactory as Dr. French's. We shall mention the features of particular merit that have attracted our notice, and certain others, of minor importance,

which we do not approve of.

In the first place the book is exceedingly comprehensive and the arrangement of subjects is a convenient one. The author is perfectly justified, we think, in advocating the open air treatment of pneumonia. He speaks well of placing the patient's bed in a tent, on a veranda, or on the roof, and says: "The relief experienced by the patient in a severe condition from removal to the open air is remarkable, and it undoubtedly makes recovery possible in many cases that are hopeless without it." He is justly conservative as to the use of tuberculin in the diagnosis and treatment of tuberculous disease. as we have before remarked (see the New York Medical Journal for July 11th, page 78). The refinements of its diagnostic use, such as by Calmette's ophthalmic application and by inunction, are not mentioned, but they have so recently been proposed that doubtless the sheets had gone through the press before sufficient observations had been reported to justify the author in treating of them. Dr. French's remarks on the climatic treatment of consumption are terse and in all respects judicious; in his brief mention of the compression treatment he speaks of the injection of sterilized air, oxygen, normal salt solution, and oil into the pleural cavity, but does not allude to that of nitrogen, which we think is worthy of some attention.

The article on exophthalmic goître is excellent, and it is illustrated with an unusually graphic picture (though roughly executed) of the facial expression met with in that disease. The author's description of "heart block" (page 617) is the best that we have seen. In our opinion, he correctly rates masturbation and sexual excesses as of little

importance in the ætiology of epilepsy

Most of the sections are introduced by admirably accurate and condensed paragraphs, each giving a definition and a brief synopsis of what is known concerning the history and geographical distribution of the particular disease treated of; and the final portion of the work, entitled Clinical Methods of Examination, is exceedingly instructive.

The book is disfigured by the "bobtailed" spelling, and we find some verbal errors that can hardly be accounted for by devotion to that fad—for example, "coagulæ" (page 90), "erysipelatus" as the genitive of erysipelas (page 218), and "scabei" as the genitive of scabies (page 503). These slips are offert by the correct use of perferating, instead of

"perforated" ulcer. We think that Dr. French greatly overestimates the danger of using humanized vaccine when he says that it "should never be employed except in case of emergency," and we believe that he misapprehends the reason for inserting vaccine at more than one point. It is strange to find it stated of bees, wasps, ants, and spiders that they "sometimes act as parasites." But the book so teems with meritorious features that the blemishes which we have pointed out may be lightly passed over. From the mechanical point of view, it is very creditable to the publishers.

Taschenbuch der Physiologie. Von Prof. Dr. med. H. BORUTTAU in Berlin. Helt 1 und Heft 2. Leipzig: Dr. Warner Klinkhardt, 1908. Pp. 243.

According to the publisher's announcement, this book constitutes the first of a series of students' note books designed to be used along with textbooks and lectures. The text is concise, and carries the student along merely the essentials of the various topics, the idea being for the student to fill in any additional data presented by the lecturer. For this purpose a very wide margin is provided, and also a number of blank pages. To graduates of the College of Physicians and Surgeons, the present book will appear strikingly like the bound volumes of one of the professor's lecture notes. The book is well illustrated with numerous drawings, most of which are original. The work should receive a warm welcome from the German student body.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Einführung in das Wesen der Magen-, Darm- und Stoff-wechsel-Krankheiten. Von Dr. Gaston Graul. Mit 2 Ab-bildungen im Text. Zweite, neu bearbeitete Auflage. bildungen im Text. Zweite, neu Würzburg: A. Stuber, 1908. Pp. 162.

Zeittafeln zur Geschichte der Medizin. Von Dr. J. L. Pagel. Berlin: August Hirschwald, 1908. Pp. 16. Religion and Medicine. The Moral Control of Nervous Disorders. By Elwood Worcester, D. D., Ph. D., Samuel McComb, M. A., D. D., Emanuel Church, Boston, and Isador H. Coriat, M. D. New York: Moffat, Yard & Co., 1908.

Diät-Vorschriften für Gesunde und Kranke jeder Art. Von Geheimem Medizinalrat Dr. J. Borntraeger, Regierungs- und Medizinalrat in Düsseldorf. Fünfte verbesserte und erweiterte Auflage. Würzburg: A. Stuber, 1908.

A Textbook of Human Physiology. Including a Section on Physiological Apparatus. By Albert P. Brubaker, A. M., M. D., Professor of Physiology and Hygiene in Jefferson Medical College, Philadelphia, etc. Third Edition, Revised and Enlarged. With Colored Plates and 383 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908.

Diseases of Infancy and Childhood. Their Dietetic, Hygienic, and Medical Treatment. A Textbook Designed for Practitioners and Students in Medicine. By Louis Fischer, M. D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City, etc. Second Edition. With Three Hundred and Three Illustrations, Several in Colors, and Twenty-seven Full Page Half Tone and Color Plates. Philadelphia: F. A. Davis Company, 1908. Pp. wiii. 1908. Pp. xxiii-979.

1908. Pp. xxiii-yyy.

Die Orthorontgenographie. Anleitung zum Arbeiten mit parallelen Röntgenstrahlen. Mit 32 Abbildungen. Von Dr. Franz M. Groedel, Bad-Nauheim. München: J. F. Lehmann, 1908. Pp. 76.

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lesungen für Studierende und Aerzte. Von Dr. Otto Cohn-heim, a. o. Professor der Physiologie an der Universität Heidelberg. Berlin und Wien: Urban & Schwarzenberg, 1908. Pp. 484.

Transactions of the American Association of Genitourinary Surgeons. Twenty-first Annual Meeting, held at the Shoreham Hotel, Washington, D. C., May 7 and 8, 1907, and Joint Session with the American Gynæcological Society at the George Washington University, May 9, 1907. Volume II. New York: The Grafton Press, 1908. Pp. 414. Lehrbuch klinischer Untersuchungsmethoden für Studierende und Aerzte. Von Dr. Theodor Brugsch, Assistent der II. mediz. Universitäts-Klinik in Berlin, und Dr. Al-

fred Schittenhelm, a. o. Professor der inneren Medizin in Erlangen. Mit einem Beitrage: Klinische Bakteriologie, Protozoologie und Immuno-Diagnostik von Dr. J. Citron, Berlin. Mit 341 Textabbildungen, 5 schwarzen und 5 farbigen Tafeln. Berlin und Wien: Urban & Schwarzen-

berg, 1908. Pp. 939. Borderland Studies. Borderland Studies. Miscellaneous Addresses and Essays Pertaining to Medicine and the Medical Profession, and their Relations to General Science and Thought. Volume II. By George M. Gould, M. D., Formerly Editor of the Medical Nows, etc. Philadelphia: P. Blakiston's Son

& Co., 1908. Pp. 311.

Cancer. Par P. Menétrier, Professor agrégé a la faculté de médecine de l'Hopital Tenon. Avec 114 figures intercalées dans le texte. Paris: J. B. Baillière et Fils,

1908. Pp. 662.
Medical Gynæcology. By Samuel Wyllis Bandler, M. D Fellow of the American Association of Obstetricians and Gynæcologists, etc. With Original illustrations. Philadel-phia and London: W. B. Saunders Company, 1908. Pp. (Price, \$5.)

Index Catalogue of Medical and Veterinary Zoology.

Subjects: Trematoda and Trematode Diseases. By Ch.
Wardell Stiles and Albert Hassall. Washington: Govern-

ment Printing Office, 1908. Pp. 401.

Biennial Report of the Board of Health of the City of New Orleans. 1906-1907. Pp. 126.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the weet anding July 10, 1908

| Places. | Da | te. | Cases | Deaths. |
|---------------------------------|---------|------------|-------|---------|
| California-Los Angeles | Time | 20-27 | 2 | |
| California-San Francisco | Tune | 20-27 | | |
| Washington-District of Columbia | Lun | 20-27 | | |
| Illinois-Chicago | | | | |
| Illinois-Jacksonville | Tune | 1-30 | | |
| Illinois—Springfield | June | 18-July 2 | | |
| Indiana—Fort Wayne | Tune | | | |
| Indiana—Indianapolis | Tune | 14-20 | | |
| Indiana I a Favetta | June | 21-28 | | 1 |
| Indiana-La Fayette | Tune | 30-July 6 | | |
| Indiana-South Bend | | 30-July 4 | | |
| Indiana-Terre Haute | | 20-27 | | |
| Iowa—Cedar Rapids | | I-30 | | |
| Louisiana-New Orleans | | 29-July 4 | | |
| Michigan-Sagin | Lune | 203" | 1 | |
| Minnesota-Winona | | 20-27 | I | |
| Missouri-Kansas City | June | 27-July 4 | 1 | |
| Missouri-St. Joseph' | June | 20-27 | 2 | |
| North Carolina-Charlotte | Tune | 20-27 | | |
| Ohio-Cincinnati | | 26-July 3 | | |
| Ohio-Dayton | | 27-July 4 | | |
| Ohm -Toledo | | 13-20 | | |
| Ohio-Topeka | Lune | 13.20 | | |
| Tennessee-Knoxville | Tune | 20-27 | | |
| Texas—San Antonio | Tune | | | |
| Washington-Spokane | | 20-27 | | |
| Wisconsin-La Crosse | Tumo | 13-July 4 | | |
| | | | | |
| Wisconsin-Milwaukee | - | | 0 | |
| Sallpox- | | | | |
| Philippine Islands- Vanilla | | | 20 | 21 |
| Smallpox | 1 | Cistl | | |
| Brazil-Bahia | 1120 | 1.21 | 114 | - |
| Brazil-Rio de Jane | May | 2. I.m. | .717 | 266 |
| China—Hongkong | Man | 76 33 | | 5 |
| China—Shanghai. | Man | 10-23 | 0 | |
| Fanalan Caranta | May | 24-june 14 | | 3 |
| Ecuador Guayae | 1 anc | 0-13 | | 1 |
| Egypt-Cairo | June | 3-17 | 16 | 2 |
| France—Paris | Tune | 13-20 | 2 | |
| Prance-Toulor | May | 1-31 | I | |
| Germany-General | June | 6-20 | 10 | |
| Germany-Premer. India-Bombay | May | 23 June 6 | 3 | |
| India-Bombay | May | 25-June 9 | | 45 |
| Indua-Calcutta | May | 10-23 | | 1.2 |
| India-Madras | May | 23-29 | | 1 |
| Italy-General. | | | | |
| Italy-Naples | T111111 | 6-20 | 1.2 | |

Japan—Kobe......May 31-June 6..... 4

| Japan-Osaka | 16-3) | 46 | 25 | | | |
|---|--------------|--------|-------|--|--|--|
| Mexico-Aguas Calientes June | | | 4 | | | |
| Portugal-LisbonJune | | 4 | 2 | | | |
| imported. | | | | | | |
| Russia-Batoum | | 1 | | | | |
| Russia-MoscowJune | | 17 | 1 1 | | | |
| Russia—RigaJune Russia—St. PetersburgJune | 20 27 | 1 | 1.1 | | | |
| Russia—St. PetersburgJune Russia—WarsawMay | 0-13 | 54 | 4 | | | |
| Siberia—VladivostockMay | | .1 | 4 | | | |
| Spain—ValenciaJune | | 25 | t | | | |
| Straits Settlements—SingaporeMay | 16:22 | 2 . | 1 | | | |
| Turkey-ConstantinopleJune | 7-21 | | - | | | |
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| Y More Fever I | oreign. | | | | | |
| Brazil-Mangos May | 31-June 13 | .3 | 3 | | | |
| Brazil-ParaJune | 6-30 | 5 | 5 | | | |
| Brazil-Rio de JanenoMay | 31-June 7 | 2 | 2 | | | |
| Cuba-DaiquiriJuly | 11-13 | 4 | | | | |
| Ecuador-Guayaquil)une | 6.13 | | - | | | |
| Mexico-Frontera July | 12 | I | | | | |
| Mexico-Vera CruzJuly | 12 | 2 | 1 | | | |
| Philippine Islands - Provinces - | | | | | | |
| CapizMay | 9-23 | 120 | | | | |
| Philippine Islands-Pangasinan May | 9-23 | 1 (3() | | | | |
| Cholera-For | eign. | | | | | |
| India-BombayMay | 25- June 2 | | I | | | |
| India—Calcutta May | 36-22 | | 7.1 | | | |
| India-Madras | 23-20 | | 5 | | | |
| India RangoonMay | 16-30 | | 21 | | | |
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| Plogue Fore | 1511. | | | | | |
| Brazil-Rio de Janeiro May | 24-June 14 | 1 | | | | |
| China-Hongkong May | 16-23 | 114 | 95 | | | |
| Ecuador-GuayaquilJune | 6-13 | | 5 | | | |
| Egypt-General June | 11.25 | 102 | 45 | | | |
| Egypt-AlexandriaJune Formosa GeneralMay | 11-25 | | 18. | | | |
| Formosa General | 23-June 0 | 212 | 1.360 | | | |
| India—GeneralMay | 10-30 51. | 300 | 218 | | | |
| India—BombayMay India—CalcuttaMay | 25-June 9 | | 79 | | | |
| India—Madras | 23.20 | | ,, | | | |
| India—Rangoon | 10.20 | | 82 | | | |
| Japan-Kobe | 22:20 | | 1 | | | |
| Peru—CallaoJune | 6-13 | 1 | | | | |
| Trinidadune | 22 | | τ | | | |
| Venezuela-CaracasJune | 20-21 | 4 | 2 | | | |
| June | 21-27 | 6 | 1 | | | |
| Venezuela-La Guatrajune | 16.19 | 5 | Ţ | | | |
| Straits Settlements-Singapore May | 16-23 | | I | | | |
| | | | | | | |
| Dublic Health and Marine | Hospital Sei | TVI | ce: | | | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commis-sioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 15, 1908:

ALTREE, G. H., Acting Assistant Surgeon. Excused from duty without pay for two months from June 4, 1908. ASHFORD, F. A., Assistant Surgeon. Directed to report to Passed Assistant Surgeon Foster, San Juan, Porto Rico, for examination for promotion to the grade of passed assistant surgeon.

passed assistant surgeon.

Catter, P. L., Acting Assistant Surgeon. Granted leave of absence for four days from July 6, 1908, under paragraph 210, Service Regulations.

ELDREDGE, N. B., Pharmacist. Granted leave of absence for six days from July 9, 1908, under paragraph 210, Service Psychology.

Service Regulations.

GLENNAN, A. H., Assistant Surgeon General. Granted leave of absence for twenty-eight days from July 22, 1908.

Manning, H. M., Assistant Surgeon. Directed to report to the director. Hygienic Laboratory, for temporary

Manning, H. M., Assistant Surgeon. Granted leave of absence for three days from July 12, 1908.

McKeon, F. H., Assistant Surgeon. Directed to report to

the chairman of the Board of Examiners, Manila, P. I. to determine his fitness for promotion to the grade of passed assistant surgeon.

NUTE, A. J., Acting Assistant Surgeon. Granted leave of absence for sixteen days from August 4, 1908.

PARKER, H. B., Passed Assistant Surgeon. Granted leave

of absence for one month from August 1, 1908.

Perryjohn, Jos., Assistant Surgeon. Directed to report to the chairman of the Board of Examiners, Manila, P. I., to determine his fitness for promotion to the

Rodan, J. C., Acting Assistant Surgeon. Granted leave of absence for seven days from July 14, 1908.

Salmon, T. W., Assistant Surgeon. Directed to report to the chairman of the Board of Examiners, Washington, D. C. Luke or 100 to determine his fitness for a recommendation. D. C., July 20, 1908, to determine his fitness for promotion to the grade of passed assistant surgeon.

L. T., Acting Assistant Surgeon. Granted leave SEAVEY,

of absence for twenty-one days from July 25, 1908.

SPRATT, R. D., Assistant Surgeon. Directed to report to the chairman of a Board of Examiners, Washington, D. C., July 20, 1908, to determine his fitness for promotion to the grade of passed assistant surgeon.

Sponn, A. E., Acting Assistant Surgeon. Granted leave of absence for thirty days from August 1, 1908, and excused without pay from August 31 to October 31, 1908

SWEET, E. A., Assistant Surgeon. Directed to report to the chairman of a Board of Examiners at San Francisco, Cal., July 20, 1908, to determine his fitness for

promotion to the grade of passed assistant surgeon. TAPPAN, J. W., Acting Assistant Surgeon. Granted leave

of absence for twenty days from July 8, 1908.

Trask, J. W., Passed Assistant Surgeon. Granted leave of absence for twenty-seven days from August 3, 1908. WALKER, T. D., Acting Assistant Surgeon. Granted leave

of absence for eight days from June 25, 1908.

RD, W. K., Passed Assistant Surgeon. Granted leave

WARD, W. K., Passed Assistant Surgeon. Granted leave of absence for seven days from July 14, 1908, under paragraph 191, Service Regulations.

WICKES, H. W., Passed Assistant Surgeon. Directed to proceed to Brunswick Quarantine Station, Georgia, for special temporary duty, upon completion of which to rejoin station.

Boards Convened.

A board of medical officers was convened to meet at Seattle, Wash., for the purpose of examining certain alien immigrants. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W.

Chapin, recorder.

The board of medical officers convened to meet in San Francisco, Cal., on July 6, 1908, to examine assistant surgeons for promotion to the grade of passed assistant surgeon, was reconvened to meet on July 20, 1908. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon Rupert Blue; Passed Assistant Surgeon W. W. King, recorder.

A board of medical officers was convened to meet in A board of medical others was convened to meet in Manila, P. I., to examine assistant surgeons for promotion to the grade of passed assistant surgeon. Detail for the board: Passed Assistant Surgeon V. G. Heiser, chairman; Passed Assistant Surgeon T. B. McClintic; Passed Assistant Surgeon A. J. McLaughlin, recorder.
A board of medical officers was convened to meet in Washington, D. C., July 20, 1908, to examine assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for promotion to the grade of passed assistant surgeons for passed assistant surgeon.

geons for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon General geon. Detail for the board: Assistant Surgeon A. M. W. J. Pettus, chairman; Passed Assistant Surgeon A. M. Stimson; Passed Assistant Surgeon J. W. Trask, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending July 18, 1908:

BAILY, H. H., Captain. Ordered to Fort Wayne, Mich.,

for temporary duty, and return.

Bosley, J. R., Captain. Ordered to duty with First Infantry, en route to and at camp at American Lake. Wash. CARTER, E. C., Lieutenant. Relieved from duty at Fort Leavenworth, Kan., and ordered to duty at the expira-tion of his present leave of absence, at Fort Sheri-

dan, Ill. HARRIS, H. S. T., Major. Ordered to duty at the expiration of his present leave of absence at Fort Leaven-

worth, Kan

HUNTINGTON, P. W., Captain. Left Fort Rosecrans, Cal., on leave of absence for three months

on leave of absence for three months.

LAGADE, L. A., First Licutenant. Returned to Chief Surgeon's office, Denver. Col., from leave of absence.

MUNSON, E. L., Major. When relieved at Fort Sheridan, Ill., ordered to duty as instructor in the care of troops at the Army Staff College, Fort Leavenworth, Kan.

RAYMOND, T. U. Major. Left Fort Logan, Col., with Twenty-first Infantry for camp near Fort D. A. Russell Woo.

sell, Wyo. Woodbury, F. T., Captain. Arrived at San Francisco, Cal., from Philippine Service, and granted leave of absence for two months

The following officers of the medical corps have been

promoted to the rank of major, from April 23, 1908: Captains Henry Page, J. B. Clayton, I. A. Shimer, C. J. Manly, B. K. Ashford, W. P. Chamberlain, F. M. Hartsock, H. A. Webber, E. R. Schreiner, D. F. Duval, and David Baker.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending July 18, 1908:

ALEXANDER, C. E., Pharmacist. Appointed pharmacist from July 10, 1908; ordered to the Relief.
BIELLO, J. A., Assistant Surgeon. Detached from the Solace and ordered to the Pacific torpedo fleet. EYTINGE, E. O. J., Assistant Surgeon. Detached from the Concord and ordered to the Ranger.

HARMON, G. E. H., Medical Director. Detached from the Naval Academy and ordered to temporary duty in command of the Naval Medical School Hospital, Washington, D. C.

Washington, D. C.
KERR, W. M., Acting Assistant Surgeon. Detached from
the Naval Hospital, New York, N. Y., and ordered to
the Naval Hospital, Norfolk, Va.
LEE, A. E., Assistant Surgeon. Detached from the Naval
Hospital, Canacao, P. I., and ordered to the Concord.
McLarty, C., Pharmacist. Placed on the retired list from July 10, 1908, in accordance with section 1453, Revised

Assistant Surgeon. Detached from the RANDALL, R. C., second torpedo flotilla and ordered to the Solace SNYDER, J. J., Surgeon. Detached from the New Hamp-shire and ordered to the Franklin.

Births, Marriages, and Deaths.

Married.

COPELAND-SPALDING.-In Dexter, Michigan, on Wednes-

COPELAND—SPALDING.—In Dexter, Michigan, on Wednesday, July 15th, Dr. Royal S. Copeland, of Ann Arbor, and Miss Frances Spalding, of Ann Arbor.
CROCKETT—PRESTON.—In Chattanooga, Tennessee, on Friday, July 10th, Dr. H. S. Crockett, of Americus, Georgia, and Mrs. Mattie F. Preston.
FRACKELTON—HAMILTON.—In Milwaukee, on Wednesday, July 8th, Dr. Albert Frackelton and Miss Grace Lansing Hamilton

HOWLAND-LINDENKOHL.-In Washington, D. Wednesday, July 8th, Dr. Charles Abel Howland, of Black-

wednesday, July on, Dr. Charles Ade Howard, Distriction, Massachusetts, and Miss Elsa Lindenkohl.

Power—Redmond.—In London, England, on Saturday,
July 18th, Dr. Wiliam Power, of New York, and Miss Essie Redmond.

WICKES—APPEL—In Cheyenne, Wyoming, on Wednesday, July 8th, Dr. George Lewis Wickes, United States Navy, and Miss Marjorie Appel.

Belknap.-In Niles, Michigan, on Tuesday, July 14th, Dr. Simonion Belknap, aged seventy-one years.

Buchanan.—In Eads, Tennessee, on Wednesday, July

BUCHANAN,—In Eads, Tennessee, on Wednesday, July 8th. Dr. John Buchanan.
BUNCE.—In Hastings, Nebraska, on Saturday, July 11th, Dr. Charles Bunce, aged seventy years.
ELMBE.—In Atlantic City, N. J., on Saturday, July 18th, Dr. William Elmer, of Trenton, aged sixty-eight years.
FLIEDNER.—In New York, on Sunday, July 12th, Dr. Friedrich Fliedner, aged sixty-five years.
GLYNN.—In Milwaukee, on Wednesday, July 8th, Dr. Lohn C. Glynn, aged thirty-one years.

John C. Glynn, aged thirty-one years. HALL—In St. Louis, on Tuesday, July 7th, Dr. George

W. Hall, aged seventy-seven years.

Montgomery.—In White Lake, Michigan, on Wednesday,
July 15th, Dr. Frank Montgomery, of Chicago.

NICHOLS.-In Brooklyn, on Monday, July 13th, Dr. Tru-

man Nichols. aged eighty-one years. Roehrig.—In Pasadena, California, on Thursday, July 17th, Dr. Frederic Louis Otto Roehrig, aged eighty-nine years.

SCHOPPENHORST.—In Louisville, Kentucky, on Friday, July 10th, Dr. Frederick William Schoppenhorst, aged twenty-six years.
SWAN.—In Calais, Me., on Monday, July 13th, Dr. Charles Edward Swan, aged eighty-six years.

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Vol. LXXXVIII, No. 5.

NEW YORK, AUGUST 1, 1908.

WHOLE NO. 1548.

Original Communications.

TREATMENT OF LARYNGEAL STENOSIS, IN-CLUDING INTUBATION BY THE DORSAL METHOD*

> By Louis Fischer, M. D., New York,

Attending Physician to the Willard Parker and Riverside Hospitals.

It is unnecessary to burden you with statistics proving the virtues of antitoxine. Besides, all of you have no doubt, at some time in your practice, Because this pathogenic bacterium possesses marked virulence which may persist months after the disappearance of the disease in a given patient. Pathogenic bacteria may be harbored for a long time in the crypts and follicles of diseased tonsils, or they may be found in the throats of children with masses of fungoid granulations, such as adenoids.

Coughing, frequently sneezing will spread pathogenic bacteria, and if the Klebs-Loeffler bacillus has been dormant in the nose or throat it can be disseminated by the sneeze or by the cough.

In many children the Klebs-Loeffler bacillus is harmless. It is in the weak, in the subnormal, in

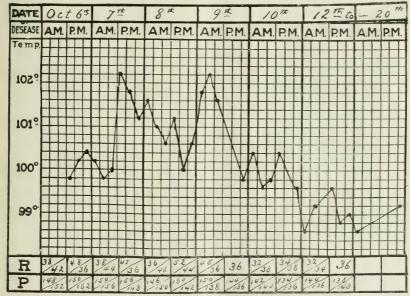


CHART 1.—F. W.; age seven months; ill two days. Received 0,000 units antitoxine on admission to Willard Parker Hospital. Was restless and croupy; showed slight retraction. No exudate in throat. No nasal discharge. Three cultures taken during first three days after admission were negative for Kichs-Loeffler bacilli. Patient improved until discharges. October 20th.

had occasion to verify the specific nature of antitoxine when used in sufficient quantity as a healing serum, or when injected to confer immunity as a prophylactic.

The Klebs-Loeffler bacillus is by no means extinct. This can be verified by walking through the wards of any hospital devoted to contagious diseases in this country or abroad. Why is this so?

*Read before the Harley, Wedical Society, January 8, 1008

the tuberculous, and in the strumous child that it will migrate from the surface into the body which does not contain sufficient antibodies to destroy the germ, and so the disease develops.

The presence of false membranes in the pharynx or tonsils does not necessarily mean an obstruction to respiration. If the larynx is not involved it is rare for the tonsils and pharynx to be so thickly covered with diphtheritic deposits as to mechan-

ically obstruct the entrance of air into the larynx. But, when in a narrow tube like the larynx there is an inflammatory thickening and infiltration, plus the deposit of psuedomembranes, then the narrow lumen is easily obstructed, preventing the entrance of oxygen and giving rise to that train of symptoms which is termed laryngeal stenosis.

Some children are more prone and more susceptible to laryngeal stenosis, first, by reason of their anatomical weakness, that is, structural weakness

vital organs, so also it is possible for a streptococcus or a Klebs-Loeffler bacillus, or an influenza bacillus to give rise to an infection in which the clinical manifestations are alike, giving rise to a laryngeal stenosis. Laryngeal stenosis is a condition not to be trifled with. The delay of several hours, until a culture shows that we are dealing with a dipheritic stenosis or a streptococcus stenosis or an influenza stenosis, may prove fatal for the patient.

Acute laryngeal stenosis is never found in syphilis.

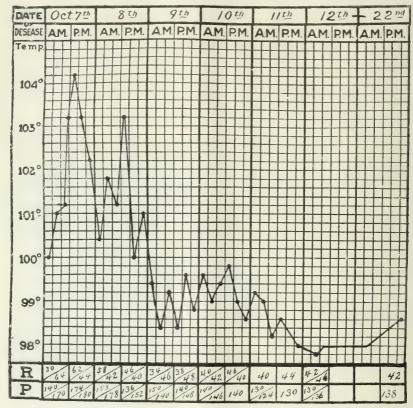


CHART 2 B. H.; twenty-two months old; ill two days; admitted to Willard Parker Hospital, October 7th. On admission had croup retraction. Throat congested. Slight exhibite the on left tonsil. Nasal discharge. Primary culture showed presence of Klebs Loeffler bacili. Received 10,000 units antitoxine and Dover's powder, gr. 2. October 5th. Compt. Condition poor. Received 10,000 units antitoxine. Strychnine gr. 1/120, caffeine gr. 2, q. 3 h. Deser's powder gr. 2. October 1th Condition unproved, less croup. Condition slowly improved under stimulation.

found usually in rachitic, syphilitic, and those children of the strumous, scrofulous, or tuberculous type, or those having the so called "status lymphaticus."

The bacteriological diagnosis of laryngeal stenosis is not always easy to determine, first, because the location of the larynx prohibits in a measure the proper taking of a culture, therefore the diagnosis must be made by the clinical symptoms. We also know that just as several varieties of pathogenic bacteria may cause inflammatory symptoms in other

When this condition is met with, the history and the congenital manifestations are so different that one cannot be misled into the belief that he is dealing with an acute process.

At all events, disregarding the bacteriological data the treatment is identical. With a fractured bone, no matter what caused the fracture, the treatment is always the same. So also must the treatment of a laryngeal stenosis be the treatment of the effect rather than the cause of the disease.

A Diagnostic Point. If a child appears in good

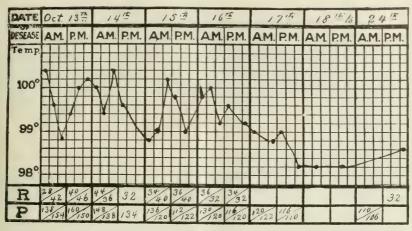


CHART 3.—R. F.; two and a half years old; ill two days; admitted to Willard Parker Hospital, October 13th. On damission was croupy, with moderate retraction. Pulse of good force. No cyanosis. Received 10,000 units antitoxine and Dover's powder, 2 gr.. Croup lasted three days. Primary culture negative for Klebs-Loeffer bacilli. Secondary cultures showed one positive for Klebs-Loeffer bacilli on October 20th. No exudate in throat or nose. Fauces congested. Discharged cured on October 24th.

health and awakens suddenly at night without having given evidence of disease the day before, such croup is *usually* of the catarrhal type and is not to be classed with that serious form of laryngeal

stenosis due to diphtheritic pseudomembranes. Diphtheritic laryngeal stenosis usually appears slowly. It comes on gradually. A child with diphtheria usually shows malaise during the period of

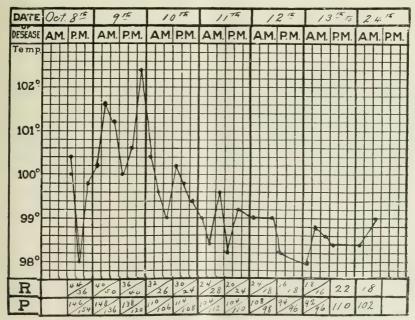


CHART 4.—L. G.; four years old; admitted to Willard Parker Hospital, October 8th, Had croup and retraction on admission. Throat congested, tousils enlarged, no exudate, slight nasal discharge. Examination of heart negative. Examination of lungs showed sufficient air posteriorly. Primary culture showed presence of Klebs-Loeffller bacilli. Initial dose of 10,000 units antitoxine was repeated with 5,000 units on the following day. Croup cleared rapidly after second injection. Small trachesi cast coughed up a few hours after admission. Patient discharged October 24th.

incubation for a few days, and anorexia. The glands of the neck (cervical glands) are swollen, the temperature is rarely high, the pulse is rapid. A laryngeal cough of a hoarse or barking character appears, and the croupous character is more and more intensified, until we notice labored breathing, then we note the accessory muscles of respiration coming into play, and the thorax shows the great struggle that is necessary to properly oxygenate the lungs. Cyanosis may also appear. The child in its struggle for oxygen cannot lie on its back, but must sit up. Each effort at inspiration is a struggle.

The worst symptom encountered next to the

immediate intubation. (See cases from hospital.)

It a child lives at a considerable distance from the physician, and suffers with laryngeal stenosis, it is far better to introduce a tube and relieve such stenosis, rather than to run the risk of suffocation.

When such conditions are noted, the pulse should be our guide as to the urgency of intubation. A very rapid pulse, or one becoming thready, or an intermittent pulse are danger symptoms which demand relief. Procrastination means death, hence it is wise not to resort to emetics and thus delay the chances of recovery.

In the treatment of larvngeal stenosis three im-

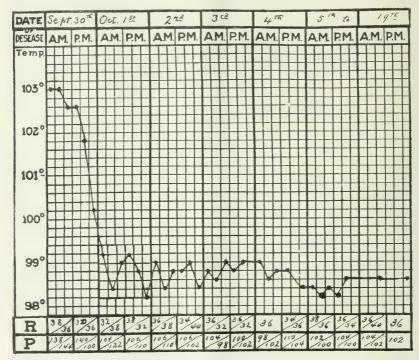


CHART 5.—M. S.; fourteen years old; ill seven days; admitted to Willard Parker Hospital, September 30th. Had croup and retraction on admission. Received 10,000 units of antitoxine and 2 drachms of whiskey; 10,000 units antitoxine repeated the following day. Croup lasted about three and one half days, with gradual improvement. No exudate in throat, but nasal discharge present. Culture of nose and throat showed the presence of Klebs Loeffler bacilli. Examination of heart and lungs negative, save for a few mucous rales at bases posteriorly. Discharged October 19th.

respiratory difficulty is the effect on the heart. The pulse is usually very feeble and markedly accelerated. Death may occur if relief is not given promptly. Therefore the pulse should be carefully studied in determining the urgency of the intubation.

Intubation. There is a vast difference between intubation in private practice and as practised in the hospital wherein experts at intubation are continuously on duty. Laryngeal stenosis with constant supervision in a hospital will frequently be treated by giving large doses of antitoxine sufficient to overcome to a majority and sufficient to stimulate glandular activity in the body, and without reserting to

portant points should be remembered: They are, first, to relieve the stenosis by intubation and thereby prevent asphyxia; second, to inject sufficient antitoxine to neutralize the toxemia present; and third, to restore inactive functions by nutrition and by hygienic means, also giving the required amount of stimulation to strengthen the heart and stimulate all the emunctories to activity.

It is well to be reminded that we must not pin our faith to the absolute curing of each and every case of laryngeal stenosis after a large dose of antitoxine has been injected, and perhaps intubation performed for the relief of the stenosis. Unless sufficient at-



1.-The mummy bandage showing child in proper position to the dorsal method

tention is given to restore the body to its previous good health we must not be surprised to find that the stenosis will recur and require the continual use of an intubation tube.

Dorsal Method. The upright method, which is the older method and the one advocated by O'Dwyer, is still in use by the older intubators. The modern method, and the one in use at the Willard Parker Hospital and also at the Riverside Hospital is the dorsal method. The dorsal method is easier because in an emergency the physician can intubate without many assistants.

To intubate properly, one must be prepared. No details should be neglected. Obturator, introducer, and tube should be inspected so that no time is lost when once the introduction of the tube is attempted. The great exhaustion of the strength of the patient, due to deficiency of oxygen, and from the forcible attempts at respiration are very perceptible. There is usually cyanosis present.

Force should never be used during intubation, excepting when we deal with that very rare condition known as subglottic œdema. The introducer should always be held lightly between the thumb and forefinger. Force is entirely unnecessary. The

finger should be kept in contact with the distal extremity of the tube directing it a little obliquely towards the right side of the larvnx. It is necessary to get inside the left aryepiglottic fold, especially in very young children.
False Passage. Repeated

forcible attempts at intubation will lacerate the tissues. It is not infrequent to enter the ventricles of the larynx producing a false passage by such forcible attempts at in-

tubation.

If a false passage has been produced and we are unsuccessful in our attempts at intubation then it is much wiser to resort to tracheotomy, rather than risk the danger incident to exhaustion from both the deficient oxygenation and the heart strain in the struggling child. This advice is in line with the teachings of O'Dwyer.

Many cases of larvngeal

stenosis recover without resorting to intubation. It is necessary to begin with very active treatment. First and foremost, sufficient antitoxine must be injected to overpower the toxemia which may result fatally. We must not expect to find a specific effect too soon. Nature's effort to restore normal conditions is evidenced by the exfoliation or the shedding of the pseudomembranes. While this loosening of the

false membranes may occur within twenty-four to forty-eight hours, some cases may show retarded exfoliation owing to a lowered vitality from this infection, and herein lies the great danger. This danger consists in blocking of the narrow laryngeal tube, thus causing an impediment to proper respiration. Great good can be accomplished by introducing a proper sized tube. Harm can be done by introducing a tube that does not fit, and it is chiefly to improper fitting tubes, and also to unskilled manipulation of good and proper fitting tubes, that most cases of retained tube are due.

Some children with slight croup may improve after several days and not require intubation. On the other hand, croup may be suddenly increased and demand immediate intubation to prevent fatal

asphyxia.

The weakness of the system during an attack of diphtheria can best be appreciated by studying the relative proportion of the red and white blood cells. It has been found that the toxine of diphtheria not only destroys the red blood cells and gives rise to a marked leucocytosis, but it also produces a decided atony of the muscular structures of the body. To restore normal conditions no drug equals strvch-



Fig. 2 .- Intubation. First step in the operation. The handle of the introducer parallel to the body axis; the tip of the tube just entering larynx.

nine. This should be very liberally prescribed from the beginning of the illness. It is especially indicated during convalescence. The system will tolerate far greater doses after passing through an acute infection, and I frequently find that a child several years old can take 1/50 grain three times a day and oftener to advantage. I believe that the toxæmia of a diphtheritic infection creates a tolerance of large doses of strychnine without harm and with apparent benefit.

Recurring Laryngeal Stenosis after Intubation. This is usually caused by forcibly pushing the tube into an edematous or infiltrated mucous membrane. O'Dwyer says that it is caused by using a tube that is too large for the lumen of the larynx, usually in the hands of inexperienced operators. Metallic

tubes that have been worn for a long time contain large calcareous deposits; the latter are a deposit of lime salts, contained in the diphtheritic membrane. When removing such a tube during extubation the mucous membrane is easily lacerated, and thus ulceration is caused thereby.

"The cause of persistent stenosis following intubation in laryngeal diphtheria, can be summed up in the single word 'traumatism.' Paralysis of the vocal cords may possibly furnish an occasional exception to this rule."

Thus an injury to the larynx can be done by a



Fig. 3.—Intubation. Second step in the operation. Handle of the introducer elevated; the tube sinking into the larynx as the handle of the introducer is elevated.

tube that does not fit; it may result from an imperfectly constructed tube, or from a perfect tube that is too large for the lumen of the larynx, although proper for the age, or from a tube that is perfect in fit and make, if not cleaned at proper intervals. O'Dwyer states that the seat of the lesion that keeps up the stenosis is just below the vocal cords in the subglottic division of the larynx, or that portion of the organ bounded by the cricoid cartilage. Exceptions to this rule result from injury produced by the head of the tube on either side of the base of the epiglottis, just above the

ventricular bands. The reasons given by O'Dwyer for the existence of the stenosis at this particular portion can best be explained by the following:

Anatomically normally there exists a constriction in the cricoid region, when the mucous membrane infiltrates or gets ædematous, it swells to such an extent and only towards the centre, as the outside is surrounded by cricoid cartilage, and while swelling towards the centre, mechanically impedes respiration and thus calls for mechanical relief, i. e., intubation. O'Dwyer states that if a tube is forced in a larvnx in a case of this kind, ulceration and sloughing of the tissues is inevitable, and in some instances necrosis of the cricoid cartilage can result from interference with the circulation. Our only



1. 3 Let let e. Let be on the operation. The estractor is guided along the left index every note the beak enters the lunes of the tube.

safeguard in preventing too much mechanical injury, as in the condition above cited, is to introduce 'a tube of small calibre." In the early stage of this class of cases the dyspnœa returns slowly; sometimes several days or in some instances only a few hours may pass before the former condition of laryngeal stenosis is recognized, and the necessity for the introduction of a proper tube is demanded. When the dyspnœa returns slowly it means that the lining membrane of the larynx cannot swell while the tube is in position, because it is compressed between the tube and the cartilage; it requires some time for the reappearance of the cedematous tissue, which drops into the chink of the glottis, and obstructs the respiration, the latter condition being mechanically prevented as long as the tube is

in situ. Exceptional cases have been reported where granulation tissue springs up from the anterolateral aspects of the larynx just above the ventricular bands. O'Dwver states that the origin of this growth is a slight ulceration or erosion of the mucous membrane at the points corresponding to the greatest transverse diameter of the shoulder of the tube from the pressure exerted during the act of swallowing.

Paralysis of the vocal cords, although known to exist, is very hard to diagnosticate without a proper laryngoscopic examination. Like other forms of paralysis, it comes very late in the course of the disease, and if, after wearing an intubation tube a short time, laryngeal stenosis recurs, it is safe to assume that paralysis of the vocal cords is not the cause of the immediate recurring stenosis

How can we prevent recurring laryngeal stenosis in ordinary membranous diphtheria? Every tube must be introduced in the gentlest manner possible. The slightest force exerted will lacerate the tissues. It is a wise rule to remove the tube every five days. If a tube must be introduced more than twice, the writer has adopted the plan mentioned by O'Dwyer, and which is not mentioned even in recent textbooks. It consists in taking a rubber tube, immersing it in a solution of hot gelatin containing twenty-five per cent. of powdered alum, and thus introducing the tube with this covering of alum gelatin. The writer has also had quite some experience with the beneficial results of a twenty per cent. solution of ichthyol gelatin, as a covering for the rubber tube. In the same manner a film consisting of hot paraffin and iodoform or europhen (diisobutylcresol iodide), 3 per cent., was applied in another case with very good results. This intralaryngeal medication, by applying the drug to the affected ulcer on the inside of the larynx by means of the intubation tube, has proved of some value in a few cases seen by the writer.

Let me sound a note of warning against haphazard intubation. The operation in itself requires some little skill, but chiefly a thorough knowledge of the details of the special anatomy of this region.

If an unskilled operator must intubate, then a hypodermatic injection of 1/100 grain strychnine or 1/2 grain tablet caffeine sodium benzoate may be given prior to the operation. It is also wise to have a mustard foot bath ready to stimulate the circulation in case of collapse. If the circulation does not improve after the mustard foot bath given at a tem-



Fig. 5.—Extubation. Second step in the operation. The beak of the extractor holding the tube firmly. The operator withdraws the tube.

perature of 100° F., then a hot saline colon flushing at a temperature of 115° to 120° F. may be given.

It is self understood that such remedies are to be used as emergency in case of collapse and not otherwise. Fresh air must not be forgotten, hence the windows should be open top and bottom. This will give all oxygen necessary.

In the treatment of extubation with recurring laryngeal stenosis, especially in a very nervous and fretful child, I order some antispasmodic treatment twenty-four hours before extubation. From five to ten grains sodium bromide, depending on the age, may be given in water or in milk, every three hours. Codeine, one tenth to one fourth grain, depending on the age, may be given during the evening before extubation, to insure rest and quiet to the nervous system.

65 East Ninetheth Street.

A METHOD FOR PREVENTING INFECTION FROM THE SKIN DURING SURGICAL OPERATIONS.

By J. Shelton Horsley, M. D., Richmond, Va.,

Professor of the Principles of Surgery and Chineal Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital.

The great danger of infecting a wound from the skin has been recognized since the beginning of aseptic surgery, but the significance of such an infection from the deep layers of the incised skin has



Fig. 7. TI - mersion in the cardboard which represents the skirl A towel has been tricked over the edge of our half of the incision and fastened in position.

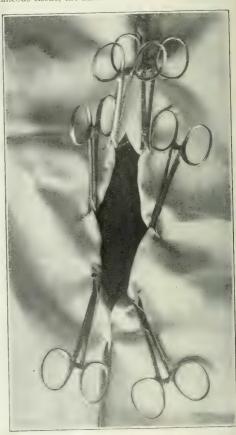
been emphasized chiefly within the past few years. Some German bacteriologists assert that a large portion of infected wounds in previously clean cases are due to this source. The surface layers of the epithelium are generally rendered sterile by the usual methods. The desirability of not causing injury to the skin by stiff brushes, by prolonged soaking with wet dressings, or by the use of too strong chemical solutions, is generally recognized at present. Such measures tend to weaken the resistance of the skin, and, at the same time, cannot reach the germs in the sweat glands, in the sebaceous glands, or in the hair follicles. If the skin is not injured, or is not to be incised, the germs in these deep structures will rarely reach the surface within the their period of time required in an ordinary opera-

tion. But when the skin is incised, the sweat glands, sebaceous glands, and the hair follicles are necessarily laid open, and bacteria, being no longer restricted by the ducts of these glands, have free access to the wound. It is the practice of many surgeons to use one knife for incising the skin, and then lay this knife aside and complete the operation with other instruments. It must be recognized, however, that if the knife is infected the edges of the incised skin are also infected, and the further manipulations necessary to the performance of the operation will tend to carry bacteria from the incised skin deep into the wound.

In order to obviate this defect in technique, I

have adopted the following procedure:

After making the incision in the skin and subcutaneous tissue, the knife that has been used for this



1) - Bath, ode of the incroon are here shown protected by towels. At each end of the incroon the towels are held together is that the towels.

purpose is laid aside and not used further. Then a towel, folded in the middle so as to give a double thickness, is tucked around the edge of the skin and fastened in this position by small tenacula, usually three tenacula on each side are sufficient. It is

important to fold the towel well over the edge of the skin. Small safety pins may be used instead of the tenacula. A short distance from the angle of each wound the two towels are clamped together with a hæmostatic forceps, as shown in the second photograph. By this method not only is all of the skin surface covered, as in cases where adhesive rubber dam is used, but the cut edges of the skin, where the glands and hair follicles have been exposed, are fully covered by the towels—a feature that is not accomplished by any other method with which I am acquainted.

Fig. I shows an incision in cardboard, which represents the skin. The towel is being folded over the cut edges with two of the tenacula in place. In Fig. 2 the towels have been fixed in place on both sides of the incision, and the hæmostatic clamps have

heen applied.

This method of protection from skin infection may be used in operations in any part of the body, but it is particularly suitable for abdominal operations.

303 WEST GRACE STREET.

SARCOMA OF THE TONSIL.*

Report of a Case, Operation, Pathological Findings.

By John Edwin Rhodes, M. D.,

Chicago.

S. W. F., a traveling salesman, was referred to me December 6, 1907, for operation upon a tumor of the left tonsil. He was a man thirty-five years of age, married, the father of a healthy child, and apparently a man of robust health except for the condition of the throat. He gave me

the following history:

In July he was first conscious of any trouble in the throat. He noticed at that time some fulness and at first a considerable amount of pain, which persisted for a short time only. There was occasional pain now, but not of a severe character. There was none from external pressure at the angle of the jaw. The pain was of a dull, aching character and not constant. He had been losing in weight for some time and was about fifteen pounds below his normal weight of one hundred and eighty-eight pounds. His appetite was good and his digestion normal, but the present size of the growth somewhat interfered with deglutition. His strength was as good as usual, and he had followed his avocation up to that time. He had had local treatment by his physician since August, but the growth had continued to increase slowly in size, although the discomfort had been somewhat ameliorated by the applications. Recently, however, he had complained of an increasing difficulty in breathing, interfering with his rest-at night, which was broken by many choking sensations, and he had been obliged very recently to sleep in a half reclining position to get any rest at all. His greatest fear was that he would choke to death in one of the spasms of dyspinca. He had been a little hoarse at times, but the functions of the larynx seemed not to be affected. There had never been any external swelling. He had never had any severe illness, and there was no history of lues. He had had an occasional sore throat.

He recalled a local application made to his tonsil six years ago by a physician, who used a piece of wire and injured the tonsil in swabbing it, and it did not heal for some time afterwards. He never used alcoholics to excess, but had been a confirmed tobacco user. He had a small mass of fine cut tobacco in his left cheek almost continuously from the time he arose in the morning until he retired at night, often swallowing the saliva. He chewed five cents worth of fine cut tobacco every two days, and smoked a pipe or a half a dozen cigars daily in addition. This had been his habit for many years. His

father died at sixty-two, of diabetes; his mother was living, sixty-two years of age, and well. He had four brothers living, aged, respectively, thirty-three, thirty-one, twenty-seven, and sixteen. Two sisters were living, aged twenty-three and twenty-one. Two sisters died, one in infancy and the other aged thirty-three, of typhopneumonia and spinal meningitis. One of his sisters was treated for goirre

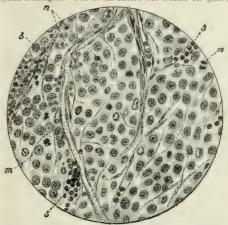
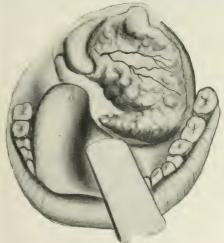


Fig. 1.—Alveolar sarcoma of the tonsil. The drawing shows a typical field, illustrating the alveolar structure, with strands of stroma running between the individual cells. Composite draining from sections, strained with hamotoxylin and cosin, Mallory's and Van Gesteller Composite tissue stains. (The artist has somewhat Van Gesteller) in Mallory's many content of conjourners of conjourners of the figures; a cellular stroma; b, capillary; n, typical of rest of tunor cells.

a year ago, and cured, and one brother was being treated for the same affection. The patient was of a very nervous temperament. He had had some bleeding from the throat every morning but of small amount. His temperature was 99° F., and his pulse 96, and regular. The tongue was clean and its motility normal. There was no headache or dizziness.

On examination I found no enlargement of the glands externally about the angle of the jaw or neck. The nasal cavities were free. On depressing the tongue a tumor of the left tonsil was shown, situated within and extending



F16. 2.-Showing sarcoma of the tonsil

^{*}Read at the thirtieth annual congress of the American Laryngoogical Association at Montreal, Canada, May 11, 1908

from the tonsillar space outwards two thirds across the fauces, attached only within the tonsillar triangle. The lower part of the growth hung over the base of the tongue as far as and impinging slightly on the epiglottis. This tumor was irregular in outline, smooth on its surface, but somewhat lobulated, pinkish in color, rather easily penetrated by a smooth, flat, blunt probe, and bleeding quite easily. Bloodvessels indistinctly showed over the surface of the tumor. The patient gave a history of an obstinate hamorrhage in childhood from a wound in the foot, several days after the injury, but there was no reason to think he had a hæmorrhagic diathesis. I decided it would be much safer to provide a bloodless field for operation, tipossible, having in mind the tendency of similar growths in the throat to bleed, sometimes alarmingly, at the time of operation, and recalling the statement of Chevaliet Jackson last year that external carotid ligation may be of use not only to forestall hæmorrhage, but to inhibit growth I determined upon the preliminary ligation. Inasmuch however, as collateral circulation is quickly established, I cannot see that there is much to be hoped for in the inhibition of growth in these tumors, although from the fact he emphasized that sarcoma spreads by the vessels such. An operation was desired by the patient at once to religent the contraction because the contraction of the patient at once to religent the difficulties of the children the

An operation was desired by the patient at once to relieve the difficulty of breathing. On the eighth of December I sent him to the hospital for operation. Because of the great difficulty in breathing I decided to operate entirely under local anæsthesia. The patient was tractable and brave. The first step in the operation was to ligate the external carotid, which was done by Dr. Freer.

My friend Dr. J. Gordon Wilson, at the University of Chicago, has made some painstaking investigations regarding the blood supply of the tonsil, and he tells me that the blood supply in every case he has ever examined, has been so definite that there can be no doubt, in his opinion, as to what it normally is. The main blood vessels, the tonsillar, come from the facial, either directly, or from the ascending pharyngeal ramus. This artery, or the tonsillar, arises from the facial soon after its origin from the external carotid. The tonsillar artery passes through the pterygopharyngeal space towards the deep surface of the tonsil. In the fibrous tissue which surrounds the gland, it divides into two parts, one branch ascending to its upper pole, the As these arother downwards to the lower one. teries pass outwards from the middle point of the tonsil, that is into the tonsillar tissue, they divide into a great number of small branches, each lying in a considerable amount of fibrous tissue, derived from the fibrous investment of the tonsil. A number of English and American textbooks state that the blood supply also comes from the lingual and This is the case in some of the lower the palatine. animals, but it is not so in man. The lingual sends a branch to the anterior pillar, the ascending palatine to the posterior pillar, the descending palatine branches go to both. Obviously, therefore, the ligation of the external carotid should afford a practically bloodless field for operation, unless there should be an anomalous distribution of the blood vessels. After the ligation of the external carotid artery, bearing in mind that the ligature must be nearer the trunk of the common carotid than two centimetres, to include the facial, which sometimes arises by a common trunk with the lingual, there are two possibilities of hæmorrhage, notwithstanding the ligation, first from one of the arteries in the pillars and second, an abnormal tonsillar branch. as cases have been recorded of the origin of the tonsillar artery from the external carotid directly. A hæmorrhage might take place from the latter if

the external carotid were ligated above the origin of the tonsillar. Care should be taken to ligate close to the origin of the vessel, therefore. In order to facilitate this procedure it is customary to have the patient's head strongly thrown backward while he occupies a position on his back with his face turned slightly away from the operator. This lifts the artery towards the surface, and raises the jaw and submaxillary glands up out of the way, thus giving a wide operative field.

In this patient the ligature of the artery was made extremely difficult because he had to keep his head flexed and chin lowered, in order to breathe. This brought down the submaxillary gland in front of the trunk of the external carotid artery and made it necessary to hunt for the vessel in the lowest part of a deep pocket created by the larynx, sternomastoid muscle, and the lower jaw.

The incision was made along the anterior border of the sternomastoid muscle, beginning above the angle of the jaw and extending to the cricoid ring, after injecting freely of a two per cent. cocain solution. After division of the platysma fibres the first object seen was the submaxillary gland, which covered the arterial trunk and had to be dissected out of its bed and retracted upward in order to render the vessel accessible. The next important structure to appear was the facial vein, which was liberated and pulled downward out of the way.

Some small glands were then dissected out and by working upward the digastric tendon was at last brought to view with the hypoglossal nerve following its lower border. Even then the artery was not visible and its pulsation had to be felt for in order to expose it.

In ligating the external carotid artery it is important to avoid including the ramus descendens of the hypoglossus nerve in the knot and to tie the arterial trunk below the origin of its second branch, the ascending pharyngeal. The ligature may be between the stems of the superior thyreoid and ascending pharyngeal arteries. The retractors used in holding open the wound should draw the facial and superior thyreoid veins downward, and the internal carotid muscle, hypoglossal nerve, and submaxillary gland are pulled upward, out of the

A common impression prevails that ligature of the external carotid artery is an easy matter. This is not always the case although the operation is sufficiently easy so that any laryngologist can acquire the technique by a number of operations on the cadaver. The operative field is circumscribed by the submaxillary gland, facial vein, digastric muscle, hypoglossal nerve and larynx, so that there is little room, and no matter how long the skin incision be made the work must still be done in the deep, small area confined by the structures mentioned and filled with important nerves and yessels.

Palpation is a great aid in finding the vessel, if the pulse is strong enough to make its pulsations evident. The operation, except in children, may always be done under cocaine anæsthesia.

The technique proposed by Dr. Jackson is to expose the common carotid first, then follow up to the bifurcation, and ligate between the superior thyreoid and the lingual, bearing in mind the anomalous distribution that sometimes obtains, the giving off of these arteries from the common carotid, and the danger of ligating the common carotid. In this case the difficulty of breathing from the presence of the large tumor made it necessary to follow the plan I have indicated in my report.

I am of Dr. Jackson's opinion that external caro-

tid ligation is something to which laryngologists should resort more frequently in the removal of growths such as this, and hereafter I shall not feel quite safe in doing these operations without it.

After the ligation had been completed, injections of adrenalin (1 to 1000) and a two per cent. solution of cocaine, equal parts, were freely made into the base of the tumor through the outward part of the anterior pillar. I first freed the growth as thoroughly as possible from the anterior pillar, with a right angle knife, bent on the flat, with sharp cutting edges and point. As there was no bleeding, I did this boldly, both anteriorly and posteriorly, and then loosened it above as thoroughly as possible, so that I had the growth very well enucleated above before beginnad the growth very well enucleated above before beginning to excise the tumor. As the growth interfered a good deal with the patient's breathing, and he retched so constantly, it was not possible to remove it in one piece, so I dissected it out in fragments. In the upper zone there was no hæmorrhage, and I succeeded in almost completely removing the growth from the lower without much bleeding In clearing up this, however, I was anxious to remove every suspicious looking mass, and this was done by seizing it with notched forceps, drawing it outward, and excising only the part thus seized. A small fragment was thus removed at the central and posterior part of the lower zone of the space and a very severe hæmorrhage took place immediately. Compression was resorted to at once, and I saturated a piece of gauze with the adrenalin and this was held firmly into the bleeding point. The patient fainted very speedily, becoming very pale, and almost pulseless, when, to our relief, the bleeding ceased. He was immediately put to bed in a sitting posture and strict quiet enjoined. In about two hours he wanted to lie down, and in so doing another hæmornhage took place, but it did not recur afterward. He rallied well, and was soon able to sit up. A ligature abscess was the only complication of the external wound, and the site of the tumor soon cicatrized over nicely. I found, however, that the interrupted operation had left a mass of the growth in the upper angle. removed this at the office on December 26th, cutting deep down to muscular tissue and leaving no suspicious looking

I then felt that the operation was satisfactorily radical. It created very little pain, except once, when I found it necessary to cut through and remove part of the posterior pillar, and then the pain was very severe, but only as the excision was being made. He left the hospital on December 29th for his home in excellent condition, with the wound well and firmly cicatrized, and pulse and temperature normal. I placed the excised tissue in the hands of Pro-fessor H. Gideon Wells, of the University of Chicago laboratories, and he furnished me an excellent microscopi-cal study. He reports:

No traces of normal tonsillar tissue can be detected in any of the sections cut from various parts of the growth, which is of uniform structure in all parts examined. It consists essentially of a solid mass of cells, which are everywhere much alike, forming a solid cellular growth in which there is a slight but very imperfect tendency to alveolar arrangement. The stroma is not abundant, con-sisting of narrow bands of mature fibrous tissue about the larger vessels, from which slender anastomosing processes pass out at irregular intervals, tending to subdivide the tumor into imperfect alveoli. By special connective tissue stains (Mallory's aniline blue and Van Giesen's stain) fine fibrils may be seen occasionally within these atypical alve-oli, among the tumor cells, but they do not form a distinct oil, among the tumor ceils, but they do not form a distinct reticular structure as in a typical lymphosarcoma. In the larger connective tissue bands are numerous small, deeply staining nuclei, "lymphoid cells"; also, very rarely, an occasional eosinophile cell. The bloodvessels are not conspicuously abundant, but all the connective tissue bands with a characteristic structure of cerell worsels which exist as the supportive structure of small vessels, which always have a distinct endothelial lining and a connective tissue adventitia; no vessels can be found within the alve-oli, and there is no free blood and no blood pigment. The larger vessels have a distinct media. It is apparent that this vascular arrangement is adequate for the nourishment of the tumor, since nowhere can there be found the slightest evidence of necrosis, or even of less severe retrogressive changes. There is also a total lack of evidence of include, thate, either old or recent, and there is no inflammatory There is also a total lack of evidence of hæmorreaction whatever, no leucocytes at all being found, either free or in clumps

The free surface of the tumor is in part covered by the stratified epithelium with occasional short processes running down into the deeper tissues, characteristic of the surface of the normal tonsil. This epithelial layer rests upon a layer of loose connective tissue in which occasional isolated tumor cells are seen, but they do not penetrate the epithelium, except in a few places where an island of tumor cells occurs free in the epithelial coat. Much of the free surface is, however, devoid of epithelium, which seems to have been destroyed by a gradual pressure atrophy rather than by necrosis and ulceration, which is shown by the gradual thinning of the epithelial cells and the absence of inflammatory reaction. The denuded surface of the tumor is remarkable in the absence of evidences of infection and inflammation; it is covered by a very thin layer of hyalin fibrin mingled with a small amount of necrotic cells and stroma, and enclosing a small number of leucocytes; the total thickness of this surface layer of degeneration is, however, not much greater than that of the normal epithelial covering. Just beneath the surface of the tumor tissue shows a relatively large proportion of stroma, and some of the small vessels are thrombosed.

The cells of which the tumor growth itself is composed are of very uniform nature throughout the tumor. They are cells of very uniform nature throughout the tumor. They are cells of medium size, having a nucleus about twice the diameter of the small lymphoid nucleus, and a considerable amount of cytoplasm, which in this poorly hardened tissue is quite granular. The shape of the cells is entirely dependent upon the pressure of the surrounding cells, therefore they are polyhedral. The nuclei are of circular outline when not modified by pressure, and of a rather vesicular type in the mature cells, having a distinct nuclear wall, one to three deeply staining spherules, and a very small amount of chromatin as granules or threads. Vounger cells are of chromatin as granules or threads. Younger cells are more rich in chromatin. Rarely a cell is found with two nuclei, but there is no formation of multinuclear giant cells, or of cells with a single giant nucleus. Karyokinetic figures are very abundant, frequently half a dozen being seen in a single field (1/12th immersion lens); most of the figures are regular, but occasionally heterotype mitoses (characteristic of malignant tumors) may be seen. There are a very few cells showing disintegrated and fragmented nuclei, often associated with a hyaline transformation of the cytoplasm. Eosiniphile and plasma cells are not present among the tumor cells, although they are very occasionally found in the stroma.

The diagnosis is round cell sarcoma, of alveolar type The vesicular nuclei, the considerable cytoplasm, and the alveolar arrangement, suggest carcinoma; however, against this diagnosis are: (I) the intimate relation of the cells to the stroma, which almost forms a reticular network within the imperfect alveoli; (2) the homogeneity of the structure; (3) the small proportion of mature stroma; (4) the absence of any attempt at formation of tubules or ducts; (5) the total absence of necrosis and inflammatory reaction, which indicates a close relation between the tumor cells and the blood vessels. On account of the abundance of mitotic figures it is evident that this tumor is exceptionally

After I had received this report of the pathologist, on January 29th, thirty-four days after the last operation, the patient presented himself again for examination, and I found a confirmation of the exceptionally malignant character of the growth, clinically, in a tumor in a new site upon the left lateral wall of the pharynx, behind the posterior pillar, about five centimetres in length, two and one half centimetres in width, and a centimetre in thickness, extending upward behind the soft palate and downward to the vestibule of the larynx. As there were no symptoms of the vestibule of the larynx. As there were no symptoms of obstruction to breathing at this time, or to be apprehended in the immediate future, I refused to operate, promising the patient to do so if there should be danger of his choking to death hereafter. I then advised him to return home to his city and submit himself to treatment by the x ray, and, if possible, to take the Coley toxines. I have not seen the patient since that time, but his physician informs me that he has been having the x ray treatments, with apparent benefit, and is in good health at the present time. In view of the laboratory findings and the clinical history of the case, however, I am not optimistic as to the eventual cure of the disease.
100 STATE STREET.

SYPHILIS COMMUNICATED IN ASSAULT AND BATTERY.

By Harry G. Watson, M. A., M. D., New York.

There is no doubt that the occurrence of syphilis in the innocent added to the confusion as to its ori-

gin for several hundred years.

The history of syphilis antedates the discovery of America, but, by many, the beginning of it is associated with this great event. It is probable that the nature of the disease was not recognized until this time, as most authors give the year 1494 as the correct date of its discovery. There is sufficient interest in studying its history to trace the etymology of the word syphilis, and learn that this direful discase was embodied in a myth by a Veronese physician of the fifteenth century.

He relates in a poem that a herdsman, Syphilus by name, was afflicted with this malady by Apollo in punishment for paying divine homage to the king. How different it is in the twentieth century! It is a prosaic fact that most cases of syphilis to-day are imposed upon man by Venus for worshipping at

the shrine of a "queen."

During the sixteenth century a sudden prevalence of this infectious disease could not be accounted for by the populace nor explained by the physicians. Many believed its origin to be venereal, but this source alone seemed insufficient to account for the rapid spread of this affliction. The stars of the firmament were blamed by some of the people, and by others, since nuns and monks as well as those high in the Church were affected, the air was considered the medium of contagion; while others

thought it to be an offspring of leprosy. The infectious nature of the disease soon attracted attention to the different avenues of contagion, and it was ascertained that a sore or ulcer on the penis was concomitant with the disease, and a forerunner of many varied outbreakings on the skin. The sore was usually venereal; but experiments by inoculation showed a more important fact, and that was that it made little difference upon what part of the integument this sore occurred, whether on the head of the penis or the head of the person, the results from the infection were practically the same. This was the step that cleared away the mystery and superstitution in regard to the cause of syphilis, and classified it into genital and extragenital. This also proved it to be an infectious and contagious disease.

As it took several hundred years to learn that syphilis is a venereal disease, it will probably take many more years before the public will associate it with the contagious diseases, and recognize it as

such.

Although it appears from statistics that only ten per cent, of all cases of syphilis are of nonvenercal origin, I am sure that the number would be much larger if all cases were recognized and reported. The great majority of cases of extragenital syphilis occur through infection from the mouth by the original characteristics of the lips. So, while genital syphilis is due to impure sexual contact, most cases of extractil plant are musted by kissing, or, as in the tractice begins to panted, by assault and battery.

This method of producing syphilis by assault and battery develops a new field of interest, both from a medical and legal point of view. It is of special interest to the general practitioner, who may be called upon to treat wounds received in a fight. He should bear in mind that such wounds are avenues of infection from syphilis, and at the time he should inquire about the general condition and appearance of the other party.

Several years ago, at the New York Hospital, there occurred a very unusual case bearing on this

point.

A young man, thirty-three years of age, printer by trade, had a fight with another man three weeks previous. He came for treatment of a greatly inflamed ear. The sore ear had been irritated by different applications, and when first seen the entire left auricle was greatly inflamed and there was a crusted exudation around a large ulcerated surface. Diagnosis of dermatitis was made.

Some weeks later the diagnosis was changed to chancre of ear, as the patient had mucous patches and other definite

syphilitic signs.

It was learned that the man with whom he had fought had early syphilis, and his mouth was sore from mucous patches. Thus it was evident that syphilis was communicated by biting in assault and battery, and that the infection came from the mucous patches in the mouth of the other party.

The two cases following came under my observation and continued with treatment until apparently cured—taking a regular three year scientific course leading to the degree A. C.—apparently cured; no diploma, however, was given:

Case I.—The first was a policeman on the force in this city, who unfortunately got into a fight with a bum and, in protecting himself, struck his antagonist in the mouth, a very unwise thing for any one to do. An infected wound on the back of the hand resulted; the wound did not heal as it should have done, and later on the usual signs of syphilis began to appear. The point of interest to note is that the sore on the back of the hand was not characteristic of a chancre at all, but the epitrochear glands of the elbow of that arm were very much enlarged, one being of the size of a marble, and remained so until vigorous treatment for syphilis was begun.

Enlargement of the lymphatic glands in the region of the primary infection is one of the most constant as well as important of all symptoms of syphilitic infection. Fournier found this enlargement absent in only three cases out of 265 men, and three out of 233 women. Hutchinson has twice seen chancres in policemen who have become wounded in scuffles with infected men.

At the museum of the Hôpital St.-Louis there is a model of a hand with chancre. 'Lesage's monograph, Chancre par morsure, refers to a case of chancre of a finger of a policeman from a bite.

Case II.—The second case was still more unusual and more interesting, as this was a case of chancre of the scalp.

aThis occurred in a man thirty-five years of age and a statement came to me with a scalp wound received in a fight, being bitten by his antagonist two months previous. He had treated the wound in his scalp, but it did not heal. When he consulted me he had this wound in the scalp and a papular eruption of syphilis. The sore in his scalp was in the parietal region, right side, irregular in outline, about one inch in diameter, and covered by a scab. When the scal was removed pus oozed out, and the wound bled easily. Hair had fallen out around the wound area, size of half and the The unrigular glauds on both sides were much enlarged. On the right side especially there were also three enlarged cervical glands, on the size of a cherry.

There was no other sign of entry of injection, and he had no illist intercours. A diagnosis of chance of the

scalp and a papular crupton of syphilis was made. He responded promptly to antisyphilitic treatment, the wound healed and his hair returned.

Both of these cases were infected from nuccus patches, being bitten by their antagonists in assault and battery. So, you see, it is not safe to hit a man in the mouth nor to be bitten by a two legged animal.

Rollet states that on several occasions he has known syphilis to be purposely communicated through biting, the person actuated by malice and desiring to give syphilis to the other.

From a legal point of view, these cases are of great interest. That a person may be legally held liable for communicating syphilis, either wilfully or



Case II. Clouder of the scale

carelessly, is shown by cases occurring in the literature of foreign countries. Such cases have also been decided in this country, both in the Court of Appeals in Kentucky and the Supreme Court of North Carolina.

Bulkley states that one of his patients received \$5,000 from a man who infected her with syphilis, although the case didn't come to court, it was settled through legal counsel. There is also reported that most remarkable case of cases:

A midwife with chancre of the finger infected four-teen women during their confinement. Eight husbands of these women became infected through intercourse, and the fine figure for field model. Here we have a total of thirty-one persons innocently infected through the criminal negligence of a midwife with chancre of the finger.

This woman knew she had a chancre of the finger and was being treated for it. She was tried and convicted of communicating syphilis; she was fined and also sentenced to two years' imprisonment.

So these two interesting cases of mine here reported, these two cases of syphilis communicated in assault and battery, are of interest both from a medical and from a legal point of view.

224 EAST FIFTEENTH STREET.

DIES CANICLIARES

"Dog Days": "The Physitians Vacation."

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A., Etc.,

(Concluded from page 162.)

I have already referred to the testimonies of ancient classic writers, prose and poetical, to the—very evidently—general practice of increased imbibition at this particular season. As the sagely philosophic Latin poet advised his readers:

Dum sentis latrare canem, rugire leonem Te medicus curet Bacchus, et umbra tegat.

And the very fact of the continuous presence of an elevated atmospheric temperature—the highest of the annual cycle—and the thirst (however innocent) which necessarily accompanied the same, would argue pretty convincingly, even to the nonprofessional mind, against the artificial withdrawal of fluids from the human economy by the exhibition of hydragogue cathartics, or the practice of venesection, or the making of issues on the cutaneous surface

Sir Thomas Browne then proceeded to examine, with judiciously critical care, the other various aspects in which the noted aphorism of Hippocrates may be viewed, and the possible sources of its original inspiration and subsequent development:

The second testimony is taken out of the last peece of his Age, and after the experience (as some thinke) of no lesse than an hundred years, and that is his booke of Aphorismes, or short and definitive determinations in Physicke; the Aphorisme alleadged is this, sub Cane & anticane, can substitute the Aphorisme alleadged is this, sub Cane & Anticane, say some, including both the Dogstarres, but that cannot consist with the Greek ἐπὸ κυνὰ καὶ πρὸ κυνός, nor had that Criticisme been ever omitted by Galen; now how true this sentence was in the mouth of Hippocrates, and with what restraint it must be understood, will readily appeare from the difference between us in circumstantiall relations.

And first concerning his time and Chronologic, he lived in the reigne of Artaxerxes Longimanus about the 82. Olympiade, 450, yeares before Christ, and from our times above two thousand. Now since that time (as wee have already declared) the Starres have varied their longitudes, and having made large progresions from West to East, the time of the Dogstars ascent must also very much alter; for it ariseth later now in the yeare, then it formerly did in the same latitude, and far later unto us who have a greater elevation; for in the dayes of Hippocrates this Starre ascended in Cancer which now ariseth in Leo, and will in progression of time arise in Virgo; and therefore in regard of the time wherein he lived, the Aphorisme was more considerable in his dayes then it is to us, or unto his country in

The place of his nativity was Coos, an Island in the Myrtoan Sea, not far from Rhodes, described in Mappes by the name of Lango, and called by the Turks who are masters thereof Stancora, according unto Ptolomie of Northern latitude 36, degrees; that he lived and writ in these parts, is not improbably collected from the Epistles that passed betwirk him and Artaxerxes, as also between the Citizens of Abdera, and Coos, in the behalfe of Democritus; which place being seated from our latitude of 52, 16 degrees Southward, there will arise a different consideration, and we may much deceive our selves if we conforme the ascent of Starres in one place unto another, or conceive

they arise the same day of the moneth in Coos and in England; for as Petavius computes in the first Julian yeare, at Alexandria of latitude 31. the Starre arose cosmically in the twelfth degree of Cancer, Heliacally the 26. by the compute of Geminus about this time at Rhodes of latitude 37. it ascended cosmically the 16 of Cancer, Heliacally the first of Leo; and about that time at Rome of latitude 42. cosmically the 22. of Cancer and Heliacally the first of Leo, for unto places of greater latitude it ariseth ever later, so that in some latitudes the cosmicall ascent happeneth not before the twentieth degree of Virgo, ten dayes before the Autumnall Æquinox, and if they compute Heliacally after it in Livis

Againe, should we allow all, and only compute unto the latitude of Coos, yet would it not impose a totall omission of Physicke; for if in the hottest season of that clime, all Physicke were to be declined, then surely in many other, none were to be used at any time whatsoever; for unto many parts, not only in the Spring and Autumne, but also in the Winter the Sun is nearer, then unto the clime of

Coos in the Summer.

Having thus dealt with the chronological and astronomical aspects of the association of the dog star with an annual temporary subsidence of medical and surgical activity—in a tone and manner distinctly demonstrative of the extreme care and attention which he had bestowed on the subject, and the broad mental capacity and high intellectual attainments which he had brought to bear on the matter so chosen for critical discussion—our author proceeds to the consideration of its purely therapeutic relations:

The third consideration concerneth purging medicines, which are at present far different from those implyed in this Aphorisme, and such as were commonly used by Hippocrates; for three degrees wee make of purgative medicines: the first thereof is very benigne, nor far removed from the nature of Aliment, into which upon defect of working, it is oft times converted, and in this forme do we account Manna, Cassia, Tamarindes and many more, whereof we finde no mention in Hippocrates: the second is also gentle, having a familiarity with some humor, into which it is but converted if it faile of its operation; of this sort are Aloe, Rhabarbe, Senna, &c. whereof also few or none were knowne unto Hippocrates; The third is of a violent and venemous quality, which frustrate of its action, assumes as it were the nature of poyson, such as are Scammoneum, Colocynthis, Elaterium, Euphorbium, Tithy-mallus, Laureola, Peplum, &c. of this sort it is manifest Hippocrates made use, even in Fevers, Pleurisies and Quinsies; and that composition is very remarkable which is ascribed unto Diogenes in Ætius, that is of Pepper, Sal Armoniac, Euphorbium, of each an ounce; the Dosis whereof foure scruples and an half, which whosoever should take, would finde in his bowells more then a canicular heat though in the depth of winter; many of the like nature may be observed in Ætius Tetrab. 1. Serm. 3. or in the book De Dinamidiis, ascribed unto Galen, which is the same verbatim with the other.

Now in regard of the second, and especially the first depree of Purgatives, the Aphorisme is not of force, but we may safely use them, they being benigne and of innoxious qualities; and therefore Lucas Gauricus, who hath endeavored with many testimonies to advance this consideration, at length concedeth that lentitive Physicke may bee used, especially when the Moone is well affected in Cancer or in the watery signes; but in regard of the third degree the Aphorisme is considerable; purgations may be dangerous, and a memorable example there is in the medicall Epistles of Crucius, of a Roman Prince that dyed upon an cunce of Diaphænicon, taken in this season; from the use whereof we refraine not only it hot seasons, but warily exhibit it at all times in hot diseases, which when necessity requires we can performe more safely then the Ancients, as having better wayes of preparation and correction; that is, not only by addition of other bodyes, but separation of

noxious parts from their own,

This information regarding the methods and means of purgation which were employed in the classic ages, by the most cultured and artistic people in the world, and which found favor in the eyes of the great "father of medicine" himself, offers some consolatory evidence of our improvement, in some directions at least, on the violent—and often, it must be feared, destructive—clinical therapeutics of that philosophic (and so ofter supersubtle) nation, in the brightest period of its extraordinary introspective wisdom. If we have, in breathing the corrupt atmosphere of a grossly materialistic age, so far sinned as to come short in an immeasurable degree of the glory of this luminous quality of the Grecian sages, we have made some crude compensation in the direction of medical chemistry and the sympathetic treatment of the victims of injury and disease.

The great physician of the metropolitan mother of "parchment" gave a meteorological explanation

of the influence of the canicular period:

And although Astrologie may here put in, and plead the secret influence of this Starre; yet Galen I perceive in his Comment, makes no such consideration, confirming the truth of this Aphorisme from the heat of the yeare, and the operation of Medicines exhibited, in regard to that bodies being heated by the Summer, cannot so well endure the acrimony of purging Medicines, and because upon purgations contrary motions ensue, the heat of 'the Ayre attracting the humours outward, and the action of the Medicine retracting the same inward: but these are readily salved in the distinctions before alleadged, and particularly in the constitution of our climate and divers others, wherein the Ayre makes no such exhaustion of spirits; and in the benignity of our Medicines, whereof some in their owne natures, others well prepared, agitate not the humours, or make a sensible perturbation.

And this very sensible (and very philosophic, and very learned) physician proceeds to a judicial summary of the tangible knowledge at which his researches had led him to arrive in this inquiry. And a very remarkable disquisition the whole is—for an author at the age of forty-one, who had been busily engaged in practice during the previous twenty years:

Nor do we hereby reject or condemne a sober and regulated Astrology; we hold there is more truth therein then in Astrologers, in some more then many allow, yet in none so much as some pretend; we deny not the influence of the Stars, but often suspect the due application thereof; for though we should affirme that all things were in all things, that heaven were but earth celestified, and earth but heaven terrestrified, or that each part above had an influence upon its devided affinity below; yet how to single out these relations, and duely to apply their actions is a worke oft times to be effected by some revelation, and Cabala from aboue. rather then any Philosophy, or speculation here below; what power soeuer they haue upon our bodies, it is not requisite they should destroy our reasons, that is, to make us rely on the strength of Nature, when she is least able to relieve us, and when we conceive the heaven against us, to refuse the assistance of the earth created for us; this were to suffer, from the mouth of the Dog above, what others do from the teeth of Dogs below; that is, to be afraid of their proper remedy, and refuse to approach any water, though that hath often proved a cure unto their disease. There is in wise men a power beyond the Stars; and Ptolomy encourageth us, that by fore-knowledge, wee may evade their actions; for, being but universall causes, they are determined by particular agents, which being inclined not constrained, containe within themselves the casting act, and a power to command the conclusion.

In his vast storehouse of the facts and opinions of the inextricable science and superstition of those classic ages which we are wont to call ancient, we find the elder Pliny ever returning, again and again, to the subject of dogs and their ways—and their madness; also to the dog star and its associations and its influences, and to human hydrophobia and the ways and means available for its prevention and its cure. The topic was evidently one which was evermore in receipt of perennial attention. In one of those very numerous allusions we learn that:

The biting of mad dogs are most dangerous to a man, as we haue said before, especially during the dog-daies, while the dog-star Syrius is so hot, for they that are so bitten, lightly are afraid of water, which is a deadly signe. To preuent therefore that dogs fall not mad, it is good for thirtie or fortie daies space to mingle hens or pullins dung specially with their meat: againe, of they be growing into that rage, or tainted already, to give them Ellebor with their meat:

The catalogue of his remedies for human hydrophobia is a very comprehensive one, indeed; and the efficacy of many of the therapeutic items found listed therein makes the reader sometimes wonder how it was that any cases were allowed to end fatally—as many were very readily obtainable in almost any locality. One of the first to be commended in this connection is the great Italian panacea:

Garlicke, it is singular good . is of power to dull and kill the force of the venomous herb Aconitum . yea, it conquereth the soporiferous & dedly quality of Henbane: the bitings also of a mad dog it healeth, if it be applied you the hurt or wounded place with him. As for the sting of serpents verily, Garlick is exceeding effective.

And this fertile generator of malodorous gastropulmonary effluvia retained the same—with very many another—item of therapeutic reputation down into the eighteenth century (if not later); for we find William Salmon, of unsurpassed herbal attainments, assuring his readers that it "helps the biting of all Venomous beasts, inwardly taken, and outwardly applied."

The next antihydrophobic agent that I have noted on Pliny's list is:

Colewort . . . Epicharmus is of opinion, That for the biting of a mad dog, a man need doe no more but lay to the sore a cataplasme of this herbe alone: but surer it were saith he and more effectual, if Laser and strong sharp vinigre were ioyned thereto. He addeth moreouer and saith, that if it be giuen to dogs with some piece of flesh it will kill them.

Some other herbal remedies are recommended which do not appear to have secured a niche in the temple of therapeutic fame:

The Plants called Bulbs, being applied in form of a liniment . . with honey it cureth the biting of mad dogs: howbeit Eratosthenes taketh pitch in stead of honey

for the said purpose.

Alisanders, which the Greeks terme Hipposelinum is a good counterpoison against the biting of Scorpions.

Taken in drinke, or applied as a liniment, it healeth the biting of a mad dog.

The reputation of *rue* displays the tenacity of its existence on the page of William Salmon, who avers that "it excels all manner of poison, helps the biting of mad dogs, stinging of Serpents, and wounds made by other Venomous beasts." Of this famous *simple*, Pliny informs us:

Rue is an herb as medicinable as the best. . . . It is singular good against the stinging of Serpents: for the very Weasels when they prepare themselues to combat with them, vse to eat this hearbe before-hand for to be secure from their Venome. Auailable it is also against the pricks of Scorpions and Hardi-shrewes, against the stings of Bees, hornets, and wasps, against the poison of the Cantharides and Salamanders, yea and the biting of a mad dogge; if it be vesed in this wise, namely to take a saucer full or acctable of the juice and so drink it with wine: also to stamp or champ in the mouth the leaues thereof, and so lay them ypon the grieued place with honey and salt; or else to seeth them with vinegre and pitch. Folke say moreouer, that whosoeuer is wel rubbed with the juice of Rue, or otherwise but cary it about him, shal be sure ynough

for being either pricked, stung, or bitten with any of those hurtfull and venomous creatures abouenamed: . . .

And he quotes Castor in favor of the efficacy of horehound:

Also a liniment (saith hee) made of Horehound stamped together with old swines grease, cureth all wounds occasioned by the biting of mad dogs.

And of a certain flower which still continues to exercise the attention of the herald at arms and symbolist, if not of the practical therapeutist, we learn that:

As touching the Flower-de-lis, the red is thought to be better than the white. . . The weight of two drams eaten with bread or drunk with water, resisteth the poison of scorpions. Being made into a liniment with oile, and so applied, it cureth the bitings of mad dogs, and healeth the parts mortified with extreame cold.

The next Plinian remedy for hydrophobia retained its reputation into the eighteenth century:

Touching Baulm, which the Greeks call Melitis or Melissophyllon: . . The juice taken in drinke bringeth women to their ordinary monethly courses: it discusseth ventosities, and healeth vlcers: it allaieth the paines of any gouts, and cureth the biting of mad dogs: . . .

And we are assured by the redoubtable William Salmon that:

It comforts the Stomach, removes Melancholy, cheats [sic] the Heart, causes pleasant Dreams, expels poyson, cures the Plague, Feavers, the biting of Mad Dogs, and all other venemous Creatures; eases the Tormina, helps Palsies, Apoplexies, Epilepsies,

In the sunny climes of the South and East, the fig was always a prominent member of the vegetable kingdom—botanically, dietetically, and therapeutically. So that we are not (or should not be) surprised on learning that:

The tender tops & twigs of fig-tree branches are singular to cure the biting of mad dogs, if they be applied to the skin where it is broken. . . Fig-tree leaues stamped with vineger, do restrain the venom, occasioned by the biting of mad dogs: . . .

As many vertues as the mild fig-tree hath, yet the wild is much more effectuall in operation: howsoeuer she yeeldeth lesse milke or white juice than the other doth. For a branch onely of it, is as good as rennet or rindles to make milk turn and run to a cheese curd. Howbeit, that milky liquor which it hath, if it be gathered and kept vntill it be dry and wax hard, serueth to season our flesh meats, and giue them a good tast. . . . Applied in a liniment with the floure of Feni-greeke, it easeth the pains of the gout: t clenseth the leprosie, and foul wild scab: it killeth ring; worms and fell tettars: it scoureth away freckles and such flecks as disfauor the face: likewise it cureth the parts stung with venomous serpents, or bitten with mad dogs.

The green figs of this wild fig-tree brought into a lini-

The green figs of this wild fig-tree brought into a liniment, do mollifie and discusse the kings cuil, and all other tumors and apostemes. And in some measure the leaues also haue the same operation: Chuse the softest and tenderest of them, let them be stamped and mixed with vineger, they will cure running sailes and sores, ease bloudy fals and chilblanes, yea, and scoure away filthy scurfe or dandruffe. The said green figs, together with the leaues, incorporat with hony, doe cure the wens or exulcerat bunches, which yeeld matter out of them resembling hony: likewise they heal the biting of mad dogs.

The natural powers of Amygdala amara enabled it in the days of Salmon to "help the Strangury, and cleanse the Lungs, cure the Cough, and shortness of breath, and the bitings of mad Dogs." And we learn from Pliny that:

The bitter Almonds . . . cure the angry night-foes, called chilblanes and bloudy-falls: applied with cold wine, they cure vlcers which grow to putrifaction; and with hony, the biting of mad dogs:

The omnipotent antidote of Mithridates necessarily embraced the virus of rabies within the sphere of its powers. So we read that:

After that Mithridates (that most mighty and puissant

king) was vanquished. Cueuus Pompeius found in his secret closet or cabinet, among other precious jewels, the receit of a certain antidote or preservatiue against poison, set down vider the hand of the sayd prince, in a private note-book of remembrances, in this maner following: Take 2 dry walnut kernels, as many figs, of rue, 20 leaues: stamp al these together into one masse, with a graine or corn of salt among. Vider which receit, was thus much subscribed, VVhosoeuer vse to eat of this confection in a morning next his heart, there shall no poison hurt him that day. It is said moreouer, that the kernels of walnuts chewed by a man or woman fasting, doe cure the biting of a mad dog, so that the place be annointed and dressed therewith.

The next couple of items in the antirabic series of simples have permitted their therapeutic interest to evaporate pretty completely, although it must have been copious and inspiring in classic times:

The herb Alysson . . . took that name Alysson, because those that be bitten with a mad dog, if they drink it with vineger, or weare it tied fast about them, shall not likewise run mad. But it is verie strange which is said moreouer of this herb, that the very sight thereof is enough to dry vp and consume that venomous matter or humour infused by the touch of the said dog, and which is the cause of madnesse.

The herb Ampeloprasos growth in vineyards, bearing leaves resembling Porret: but it causeth them to belch soure that eat thereof. Howbeit, of great power it is against the sting of serpents. It prouoketh vrine & women's monthly terms. And yet whether it be drunke or applied outwardly, it is passing good for them that pisse bloud, & represseth the issue & eruption thereof. Our midwives vse to give it vnto women newly delivered and brought to bed: likewise it is found to availe much vnto them that be bitten with mad dogs.

Then our great pagan moralist (as well as natural historian) alights upon an item of supernatural revelation and embraces the opportunity of treating his readers to a very well timed and most appropriate professional homily:

But the most dishonest and shamefull cause why so few simples in comparison be knowne, is the naughtie nature and peevish disposition of those persons who will not teach others their skill, as if themselves should lose for euer that which they imparted vnto their neighbor. Ouer and besides, there is no certain meanes or way to direct vs to the inuention and knowledge of hearbes and their vertues: for if we looke vnto those hearbs which are found already we are for some of them beholden to mere chance & fortrune; and for others (to say a truth)) to the immediat reuelation from God. For proofe hereof, mark but this one instance which I will relate to you. For many a yeare vntille now of late daies, the biting of a mad dog was counted incureable: and looke who were so bitten, they fell into a certain dread & feare of water: neither could they abide to drink, or to heare talk thereof, and then were they thought to be in a desperat case: it fortuned of late that a souldier, one of the gard about the Pretorium was bitten with a mad dog, and his mother saw a vision in her sleep, giuing (as it were) direction vuto her for to send the root vnto her sonne for to drink, of an Eglantine or wild rose (called Cymorrhodon) which the day before she had espied growing in an hortyard, where she took pleasure to behold it. This occurrent fel out in Lacetania, the nearest dier beforesaid vpon his hurt received by the dog, was ready to fall into that symptome of Hydrophobie, and began to feare water: there came a letter from his mother, adueruising him to obey the wil of God and to do according to that which was renealed vnto her by the vision. Whereupon he dranke the root of the said sweet brier or Eglan tine, and not only recoursed himselfe beyond all mens expectation: but also afterward as many as in that case tooke the like receit, found the same remedy.

Between the time, the writer in Physick knew of no medicinable vertue in the Eglantine, but only of the sponge or little ball, growing amid the pricky branches thereof, which being burnt and reduced into ashes, and incorporate with honey into a liniment, maketh haire to come again.

He subsequently returns to this heaven sent rem

edy, and refreshes the mind and memory of the reader:

Moreouer, a mad dog letteth in a dangerous poison by the wound that his tooth maketh, against which there is not a better thing than dog-rose of the Eglantine called Cynorrhodon, as I have before declared.

Then we are treated to a couple of vegetable remedies, whose therapeutic properties were of merely terrestrial invention:

Betonie is likewise good therefore if it be drunk in old wine. Veruain, which the Greeks call Peristerees, is an herb bearing one main stalk of a good heigth, furnished well with leaues, spreading forth toward the head into other branches, nuch sought to by doues and pigeons, whereupon it took the foresaid name Peristereos. They say, whosoeuer carry this herb about them, there dare not a dog bark at them.

Stinking Horehound, which some Greeks call Ballote, others Melamprasion, i. Black Horehound, is an herbe tufted full of branches: the stems be black and cornered; the leaues wherewith they be clad and garnished, are somewhat hairy, resembling those of sweet or white Horehound, but that they be bigger, blacker, and of a stinking sauor: but the leaues stamped and applied with salt, be very effectual against the biting of a mad dog:

The next antirabic item of Pliny's armamentarium suggests some accidental intercrossing of the remotely ancestral germs of homwopathy and of Christian Science:

The haire of yong boy-children which is first clipped off, is held to be a singular remedy for to assuage the painful fits of the gout, if the same be tied fast about the foot that is grieued: & generally their haire, so long as they be vnder I4 yeres of age, easeth the said anguish, if it be applied vnto the place. Likewise, the hair of a mans head cureth the biting of a mad dog, if it be laid to the place with vineger: it healeth also the wounds in the head, applied with oile or wine.

And this next again in order is surely a primordial blend of animal therapeutics with antiseptic surgery:

But surely, euery mans own water (if I may for reuerence of manhood so say) is simply best; and namely, if the Patient that is bitten with a dog, do straightways bath the place therewith; or in case there be any prick of vrchin, hedghog, or such like spill sticking in the flesh, to apply the same thereto in spunges or wooll, and so let it lie on. But say it was a mad dog that bit the Patient, or that he be stung with a Serpent, it is good to temper it with ashes and lay it vnto the sore.

Now, although William Salmon attributes to the excretory fluid derived from the living human kidney a long series of therapeutic virtues, and gives careful directions for the preparation therefrom of an Essentia, a Magisterium, an Oleum, a Spiritus, and also a Sal Urina volatile, he does not prescribe any of these in cases of hydrophobia!

Then we have a couple of genuine specimens of the classic practice of "Animal Therapeutics."

As for the Hyæna. . . . The flesh of this beast eaten, is very effectuall against the biting of a mad dog; and yet the liner is of greater efficacy in this case.

Salmon also assures his readers, under this head, that "The Liver eaten, is good against the biting of a Mad Dog." And, again, Pliny that:

If a man be wounded by the biting of a mad dog, some there be who cut round about the place to the very quicklaying thereto the raw flesh of a calfe, and then gine the patient to drink the broth of the said flesh boiled, or elshogs grease stamped with quick-line. Others highly praise the liner of a buck Goat, affirming that if it be once applied he shall not fall into that symptome of hydrophobie or fearing water, incident to those that be bitten with a mad dog. They commend also a liniment made of goats dung and wine or hony tempered together: like as the decoction of a grey or budget, of a cuckedward as wallow, taken in

And, as we continue to delve in the Plinian mine of Materia Medica, we next strike a very crude example of the prescientific utilization of the healing

properties of lanoline:

The fattie wooll of a sheep being either applied, or put vp in maner of a pessarie, drawes down the dead infant out of the mother's belly: and yet the same otherwise re-presseth the immoderat flux of womens fleurs. If it be couched hard & close within the wound occasioned by the biting of a mad dog, it serueth to great purpose; but with this charge That it be kept bound thereto & not remoued vntill the seuenth day be past: . [Howbeit, note this, that the wooll growing vpon the sheeps neck is euer best and most medicinable: and if we regard the country from whence it coms, that of Galatia, Tarentum, Attica, and Miletum, is alwaies reputed better than any other.]

Our next quotation presents a somewhat complex (and perplexed) blend of animal therapeutics with cure by homoepathic remedy and prevention by amulet precaution-with a specially aromatic spice of

homeopathic prophylaxis:

For the biting of a mad dog take the ashes of a dogs head burnt, and apply it to the sore, it wil saue the Patient from the symptome of being afraid of water; which is incident to such as be so bitten. [And now by occasion of speech know thus much once for all, That all things which are to be calcined require one and the same manner of burning, that is to say, within a new earthen pot neuer occupied before, well luted ouer with strong cley, and so set into an ouen or furnace vntill such time as the contents be calcined.] The said ashes made of a Dogs head is singular good likewise to be drunke in the same case: wherefore some haue giuen counsell to eat also a dogs head. seeke after the wormes that breed in the carkasse of a dead dog, and hang the same fast about the necke or arme of the party that is bitten: or els they lap within a cloath some of the menstrual bloud of a woman, and put it vnder the cup or pots bottome out of which the patient drinketh. And there be some againe who burn the haires of the same mad dogs taile, and conueigh the ashes handsomely in some tent of lint into the wound. Moreouer it is commonly said, That as many as haue a Dogges head about them, no other Doggs will come neere to do them any harme. In like manner, if a man carry a dogs tongue in his Shooe vnder his great toe, there will no Dogges bay or bark at him. If hee haue about him a weazils taile, which hath beene let goe againe after it was cut away. There is to be found under the tongue of a mad dog, a certaine slimy and grosse spittle, which being given in drinks to those that are bitten, keep them from the feare of water; which symptome the Greeks call Hydrophobia: but the best and most soveraigne remedy of all other, is the liver of the same dog that in his madnesse bit any body, eaten raw, if possibly it may be; if not, yet sodden or boiled any way; or else to cause the Patient for to sup the broth that is made of the same dogs flesh. There is a certaine little worme in dogs tongues, called by a Greeke name Lytta, which if it be taken out when they be young whelps, they will never after proue mad, nor lose their appetite to meat. The same worme giuen to such as are bitten with a mad dog, prescrueth them from being mad; but with this charge, that before they take the same, it must be carried three times about the fire. Also the braines of a Cocke, Capon, or Hen is singular good against the biting of a mad dog: but if one haue eaten the same, the vertue thereof indureth but for that yeare onely, and no longer. It is commonly said that the crest or combe of a Cocke well bruised and stamped, and so laid in manner of a cataplasme to the place bitten, is very effectuall to cure it: as also the grease of a goose incorporate with Furthermore, some there be who vse to sait the honey. Furthermore, some there be who vie to salt the flesh of dogs which haue bin mad, and so keepe it to giue in meat vinto those who chance to be bitten by others. There be who take some young whelpes, male or female according to the sex of dog or bitch that hath bitten any one, and presently drowne them in water causing the Patient to eat their liuers raw. The yellow or reddish dong of a cock or a hen, dissolued in vineger, and applied to the sore, is singular good. The ashes also of an hardy-shrewes that the provided alwaise that the shrew were let greatly an area of the sore in the shrew were let greatly and the shrew were let greatly an taile; provided alwaies, that the shrew were let go aliue, so soone as she was cart-tailed. Moreouer, a piece of clay taken from a swallows nest, made into a liniment with vineger: or the ashes of young swallows newly hatched

and burnt: the old skin also or slough which a snake vseth to cast off in the spring time, stamped with a male crabfish, and with wine brought into a Cataplasme, be all especiall remedies for the biting of a mad dog. As for the skinne or spoile of a snake, if it be put alone in a chist, presse, or wardrobe, among cloaths, it will kil the moth. But to come again vnto a mad dog; his poison is so strong. that whose uer do but tread vpon his vrine, especially if they have any sore or vlcer about them, they shall sensibly feele hurt thereby. Now what remedy is there for such? None better than the dung of a caple, well wet and tem-pered with vineger, and the same laid very hot within a fig to the foresaid sore.

Some valuable antirabic preparations were elaborated (cooked) from the tissues of certain deni-

zens of the ocean depths and borders:

The other sauce, Alex, is come to be made of Oisters, sea Vrchins, sea Nettles, Crabfishes, Lobstars, and the liners of sea Barbles. The grosse liquor or sauce Alex, healeth the scab in sheep, if the skin be scarified or skiced, and the same Alex poured therupon. Also it is singular against the biting of a mad dog, or the prick of As for Garum, it healeth any sea dragon: fresh burne, if a man drop it vpon the place, without naming it, or saying that it is Garum: good it is besides for the biting of mad dogs, but especially for the Crocodiles

Animal, vegetable, and mineral products were sometimes combined in the preparation of a single remedial application; as in the following example:

A liniment made of nitre and fullers earth, of each a like weight, incorporat with vineger, taketh away the foule morphew, if the skin be annointed therwith: mixed with rosin, or with raisons of white grapes stamped stones and all, it draweth uncoms and fellons to an head, and breaks them: reduced into an ointment with swines grease, it preserueth the genitoirs from inflammation, & cureth them: good likewise for the measils and small pocks which break out in all parts of the body: put rosin thereto, and incorporat them both in a liniment with vineger, it healeth the biting of a mad dog, so it be taken betimes at the beginning; and in this manner it cureth also the sores occasioned by the sting of serpents,

Some comparatively simple "preps." were also derivable from the bodies of the denizens of the waters:

Sprots salted haue a special propertie to heal the biting of the beetle or venomous fly. Prester: also in case a man be bitten with a mad dog, it is very good to lay salt fish vnto the sore; yea although the wound were not cauterised with a red hot iron, nor the patients body emptied by a clystre, this cataplasm alone of salt fish is thought sufficient to cure it: the same soked in vineger serues also to be laid vnto the place that is hurt with a sea dragon. Of the same operation and effect is a square piece or canton of the fish Tuny salted and condited.

Limpins also, as well as Burrets. . . . As touching the flesh that they haue, it serueth in a cataplasm to be laid vnto the biting of mad dogs.

And the last remedy which I have found in the long antirabic series of that wonderful classic compiler is more nearly related to modern practice than most of those items:

An actuall cauterie of yron red hot, cureth many diseases, and especially the biting of a mad dog: in which case it is so effectuall, that if the poison inflicted by that wound, haue preuailed so far, that the patient be fallen into an Hydrophobie thereby, and cannot abide drinke or water, let the sore be seared therewith, the party shall find help presently.

And so let this subject, formerly so direful, now pass-not, however, without a parting blessing on the memory of Pasteur, and a momentary thanks offering to our beloved (still, happily, surviving) octogenarian Lister; followed by a copious apology to the reader, whose patience I must have seemed to him to have set myself deliberately to exhaust. But

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the dog day heat must form my excuse; and every returned physician will, I trust, find himself as a giant refreshed by his term of holiday repose-after perfect enjoyment of the full period of the "vacation" prescribed for him by his great exemplar, the inspired "father of medicine" himself. And thus the seasons come and go, the dog star fulfills its annual engagement of visibility on the celestial stage; the creative sun functions as the divine agent in the furnishing of illuminating light and refreshing heat, as in associated promotion of life and growth and reproduction-vegetable and animal. The spheres still revolve-apparently-as they did in the days of old, with, of course, all respectful deference to the necessities of precession and nutation. And Apollo, as solar deity, is still found to wield the guiding wand of the celestial orchestra; while the nine inspired and inspiring Muses are his appointed agents in the continuous mathematical regulation and musical attunement of the concerted movements of revolution, each of her own sphere, and the maintenance of the uninterrupted harmony of the resultant auditory-ethereal-undulations which are sensible only to angelic ears. The supreme master hand still guides and governs and harmonizes all; while man's loftiest aim and sublimest ambition is to be one day rewarded by election to permanent membership of that spiritual audience which is privileged eternally to enjoy the ineffable bliss produced by the music of the celestial spheres. So thought the devout Pythagorean of old, and Professor Kennedy Duncan has somewhere introduced this notion in characteristically happy illustration of latter day "radiant" science, and with a lucidity of view and familiar lightness of touch which prove that the most advanced and illuminating mastery of the "new knowledge" is by no means incompatible with an inspiring appreciation of the esoteric conceptions of the old philosophy. And still, in presence of x rays and n rays-and even the colossal innovation of the Assouan damthe Nile pours forth its annual tribute of irrigating water and fertilizing mud over the land of Egypt; a phenomenon which inspired the divine dictation of Moses and of Isaiah, as well as suggesting some of the weirdly mystical conceptions of the Sibylline oracles, and the profound symbolism of the "golden verses" of Pythagoras. But the concepts of the "New Knowledge" have necessarily broken up the poetical fabric of the old; and after successful plowing up of the spheres, and splintering of the atoms, we are now plunged in the mire of the "electron theory"! Still, we exist in the hope that even its muddy atmosphere will in process of time become clarified—by autoillumination of its own radiations (?). Anyway, our planet has long ago been displaced from the position of central rest accorded to it by the soporific influence of mediæval doctrine, and whirled into a course of active duty on its definite annual pilgrimage through the realms of space. Eppur si muove!-and sometimes as the evening star appears above the brim of the broad Atlantic, and emits its twinkling reflections from the calm surface of its darkening briny azure mirror, we catch ourselves muttering, half unconsciously, the vaguely unsatisfied (and dreamily hankering) query, "Does it really?"

THE SOLVENT ACTION OF THE SULPHOCY-ANATES UPON THE LIME AND MAGNESIUM DEPOSITS IN THE SYSTEM.

BY WILLIAM BENTLEY, M. D., Athens, O., Professor of Chemistry, Ohio University, Athens, O., AND BERNARD R. LEROY, M. D., Athens, O.

The interesting fact, brought to light by my study of the saliva (1), that there is always a precipitation of the calcium and magnesium, held in solution in normal saliva, by the increased content of ammonia and a simultaneous decrease or entire absence of the sulphocyanates caused me to make a study of these substances, which I hope will be of interest.

First was noticed that when the saliva was normal the basic salt was one of potassium, ammonium, and the sulphocyanates in small and about equal quantities, the lime and magnesium present held in perfect solution, but that in all cases of departure from the line of health was noticed deposits of more or less of the lime salts in and around the teeth, this condition could, in a measure, be remedied by the administered medicinal dose of sodium sulphocyanate (which is of all the sulphocyanates the least poisonous to man), this fact led me to use it in cases of arteriosclerosis in small doses, giving prompt and rapid relief to the patient, and in time producing an improved condition which I attributed to the direct action of the sulphocyanate upon the deposited salts of lime. Again did this lead to experiments in the laboratory, which again led to the further study of this interesting subject by Dr. Bentley, who is making an exhaustive study of the question of the solvency of lime and magnesium calculi.

The doctor kindly granted me permission to make use of part of his findings, to better elucidate that which is but very little understood at the present day, the action of the "ion" in extreme dilution.

It is now some years since I first made use of the sulphocyanates in arteriosclerosis, and in fact in all cases where I had found a high blood pressure, in all these cases this remedy, a sodium sulphocyanate, acted as by a miracle, so rapid and prompt was it in its action and relief of the sufferer, and it was not until I had about finished a course in the laboratory of hygiene of the University of Pennsylvania did I learn that this drug had been experimented with in this disease by a German scientist, Dr. Pauli (2), who published the results of his experiments, so to him must go the honor of the introduction of one of the best and safest agents that can possibly be used in these conditions.

The drug is given in dilution, and Pauli says that he has given as much as one gramme daily, but I have never found occasion to give more than one grain at a dose, and more often never more than a fraction of a grain well diluted, and this dose given as the symptoms may demand.

From arteriosclerosis to renal calculi is not a far jump, especially in this section of the country, where the potable water comes from a lime magnesium deposit with a free deposit of salt underlying the surface, causing the water to contain much lime, magnesium, and a large content of the chlorides. As would be reasonable to conjecture, the inhabitants

of this section suffer very much indeed from calcarious deposits, and renal calculi are common.

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In analyzing a renal calculus obtained from one of my patients I was surprised to learn that it was composed of calcium carbonate, 60 per cent.; cestimated); calcium phosphate, 25 per cent.; and magnesium phosphate, 15 per cent.; and free from any other contamination. The calculi were of a light colored stratum overlaying one of dark or nearly black color, porous, hard, and very rough edged, as if broken from a larger piece; it is with a part of this stone that Dr. Bentley commenced his study of the solvent power of the sulphocyanates.

It will be noticed further that calculi of this composition have been considered quite rare, the authors on urinanalysis devoting but a few lines to the consideration of this form of calculi, and that from our experiments with the sulphocyanates in arteriosclerosis and the experiments of Dr Bentley, it is safe to say that in this drug we have a remedy which will not only slowly dissolve the already formed stone, but will prevent the formation of the calculi, or other deposit in the system when the sulphocyanides are present in sufficient quantities. It is well worthy of further study.

I will now give in part the results of Dr. Bentley's study of the solvent power of the sulphocyanates on the calculus spoken of before; it will be noticed that the power to dissolve the calculus increases with the dilution up to a certain point, well within physiological limits; and should the sulphocyanates be absent or present in reduced quantities in the system, the administered amount of the sodium salt would not be required to exceed the minimum dose, thereby rendering it much more safe to give for a prolonged length of time.

One word of caution to those who wish to try this remedy. Do not give the sulphocyanates for any length of time, nor in large doses without carefully watching the patient and making repeated measurements of the blood pressure with the sphygmomanometer, and keep an accurate record of the case; in this you will learn that large doses of the drug will not be called for, nor will you give them when you will have learned with what ease small doses will do the work.

Laboratory Experiments.—The purpose of the experiments here recorded was to ascertain the loss experienced by two small renal calculi when digested with dilute solutions of potassium sulphocyanate. The calculi were composed largely of calcium carbonate, but contained also phosphates and salts of magnesium. The potassium sulphocyanate used was chemically pure crystallized salt of the market, and was dissolved in distilled water which had been previously boiled to remove any carbon dioxide which it might otherwise have contained.

The calculi were prepared by washing thoroughly and drying for one half hour in a steam oven. In the first experiment they were digested at ordinary temperature with 50 c.c. boiled distilled water seventy-three and one half hours, after which time they were dried as before and weighed, but no loss was found. Weight of calculi before treatment, 0.0203 gramme; weight of calculi after treatment, 0.0204 gramme.

They were then digested at ordinary temperature with 150 c.c. of a 1 in 30,000 potassium sulphocy-

anate solution ninety-five and one half hours, which produced a slight loss of weight. Weight of calculi after treatment with potassium sulphocyanate solution, 0.0202 gramme.

The experiment was repeated, using a fresh solution of potassium sulphocyanate 150 c.c. as before. but the digestion was made at 37° C. and lasted sixty-six and one half hours. After washing and drying, as before, the calculi showed a decided loss of weight: Weight of calculi before digestion, as above, 0.0202 gramme; weight of calculi after digestion, 0.0196 gramme. Loss 0.0006 gramme, or 2.97 per cent.

Thinking that the loss might be due to the solvent action of water at the higher temperature, the calculi were again digested with water at 37° C. for sixty-six and one half hours, but showed no loss. Weight of calculi before treatment, as above, 0.0196 gramme; weight of calculi after treatment, 0.0196 gramme.

The digestion was repeated exactly as before, except that a I in 6,667 solution of potassium sulphocyanate replaced the I in 30,000 solution and a longer time was employed. Weight of calculi before treatment, as above, 0.0196 gramme; after treatment, 0.0190 gramme; loss, 0.0006 gramme, or

3.06 per cent.

The effect of a I in I,000 solution was next tested, and an attempt was made to determine the time necessary to accomplish the limit of solution. The same amount of solution and same temperature were employed as before, and twenty-four hours were used in the first test. The result was no loss of weight. Weight of calculi before treatment, as above, 0.0190 gramme; after treatment, 0.0190.

The treatment was repeated exactly for another twenty-four hour period with the apparent loss of 0.0001 gramme. Weight before treatment, as above, 0.0190 gramme; after treatment, 0.0189 gramme.

The same solution was used again, but the treatment was extended to sixty-six hours, when there was found a loss of 0.0003 gramme. Weight before treatment, as above, 0.0180 gramme; after treatment, 0.0186 gramme. Entire loss in I in 1,000

solution, 0.0004, or 2.10 per cent.

Very little was learned as to the time factor, but these experiments seem to show that the effect of the stronger solution, I in 1,000, is decidedly less than that of the weaker ones, I in 30,000 or I in 6,667. It seemed possible that the soluble constituent had been removed by previous treatment, and this would explain the apparent smaller efficiency of the stronger solution. Accordingly a fresh I in 30,000 solution was made and the calculi treated in 150 c.c. of it four times. The duration of the first treatment was twenty-four hours, the second twenty-four hours, the third twenty-four and one half hours, and the fourth forty-eight hours. Weight before treatment, as above, 0.0186 gramme; after twenty-four hours' treatment, 0.0183 gramme; loss, 0.0003 gramme; after second twenty-four hours, forty-eight hours in all, 0.0182 gramme; loss. 0.0001 gramme; after twenty-four and one half hours, seventy-two and one half hours in all, 0.0180 gramme; loss, 0.0002 gramme; after forty-eight hours, 120 $\frac{1}{2}$ hours in all, 0.0180 gramme; loss. 0.0000 gramme. Total loss, 0.0006 gramme, or 3.23 per cent.

Thus the absolute loss was the same as before in the same strength of solution. On account of loss of weight in the calculi, the percentage loss was greater, but the absolute and not the percentage loss is significant in this connection, because the amount of solvent is limited, while the amount of substance to be dissolved is in great excess. Regarding the period necessary for complete action we learn that anything over seventy-two and one half hours is unnecessary, but we must have over forty-eight hours' treatment. In the first experiment the same loss was noted in sixty-six and one half hours, and therefore that is sufficient for maximum effect. The period of treatment is therefore between forty-eight and sixty-six and one half hours for maximum loss.

Finally, a solution I in 40,000 was employed, temperature of digestion and volume of solvent same as before, and the time was through inadvertence four days (ninety-nine and one quarter hours). The loss was greater than any time before: Weight before treatment, as above, 0.0180 gramme; after treatment, 0.0173; loss, 0.0007 gramme, or 3.89 per cent.

This dilution was so great that it was thought hardly worth while to carry on experiments with

higher dilutions.

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IMPETIGO CONTAGIOSA.

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Impetigo contagiosa is an acute, infectious, inflammatory disease of the skin, characterized by the occurrence of superficial vesicles, which quickly dry up and form thin, flat, yellowish crusts. It is one of the commonest of cutaneous affections.

The regions most frequently attacked are the face, hands, and scalp. Commencing as a tiny blister on a very slightly inflamed base, the individual lesion early manifests a tendency to central depression and peripheral extension. Neighboring vesicles frequently coalesce and form irregular patches or circinate groups.

If the rather fragile overlying membrane is broken and the serous or seropurulent fluid allowed to escape, a raw, bright red, moisture exuding surface is exposed. The duration of a lesion is short,

from four to ten days.

The thin, loosely adherent, golden crusts curl up at the margins, and, although itching is slight, seem to possess an almost irresistible attraction for the finger nails of the patient. After a few days they drop off, leaving hyperæmic spots to mark their former sites for a considerable time. The disease is most often seen in young children, especially the unclean and poorly sheltered and fed. In grown persons it frequently results from the infection of slight abrasions, such as those following cold sores, razor scratches, and the self inflicted excoriations in parasitic and other pruritic affections. It is par-

ticularly obstinate and troublesome when it occurs on the faces of men who have a thick stubble of heavy beard. The ætiological cocci, while much nearer the surface than in sycosis, penetrate into the skin crevices a sufficient depth to render their dislodgment and destruction exceedingly difficult at times.

The affection is both inoculable and autoinoculable, and is directly due to the action, single or conjoint, of the Staphylococcus pyogenes aureus and albus, or occasionally, the Streptococcus pyogenes. Infection takes place in the outer layers of the skin, the resulting inflammation usually being confined to the epidermis, seldom extending to the papillary stratum. Because of this superficial involvement there is no scarring.

It is to be distinguished from pustular eczema, varicella, ecthyma, sycosis, the ulcerating syphilide,

and pemphigus.

In pustular eczema we have a preexisting dermatitis with its characteristic symptoms—intense itching, with thickening of the skin and the involvement of a considerable area surrounding the individual pustules.

The lesions of chickenpox are widely disseminated and are much smaller and more uniform than those seen in impetigo. Patches are seldom formed, while the large, thin, flat, flaky crusts are absent. There is usually some associated constitutional disturbance, and the disease pursues a regular, definite course.

The pustules of ecthyma are surrounded by well marked inflammatory areolæ and have thick, tough crusts, which cover more or less ulcerated bases. The disease occurs more frequently in grown persons than in children, and the covered parts, especially the legs, are attacked oftener than the face and hands.

Sycosis seldom gives rise to a mistake. The deep seated nodules, pierced by pus distended hair follicles, from which the shafts can be readily extracted, together with the very considerable amount of inflammation commonly present, render distinction comparatively easy.

The ulcerating syphilide is distinguished by its

slow progress and invariable scarring.

True pemphigus is rare. The vesicles develop suddenly on uninjured surfaces, there is slight if any surrounding inflammation, and the lesions are large (seemingly full grown) from the very first. The contents of the bullæ are more often clear and sterile than mucopurulent in character, and, owing to the noninfectious nature of the disease, only one person in the family is affected.

Few skin diseases yield more readily to proper treatment than impetigo contagiosa. In order to secure the best and quickest results, the crusts must first be removed, otherwise they serve to protect and aid the infecting bacteria by shutting off the sunlight and retaining the moisture, two measures favorable to the continued growth and multiplica-

tion of the organisms.

One of the most effective of all therapeutic agents in this disease is, as every medical man knows, animoniated increary. The mistake most frequently made, however, is in the use of too strong a preparation of this drug. The official ointment funguentum

hydrargyri ammoniati, U. S. P.) consists of ten parts of white precipitate in ninety parts of benzoinated lard. The most satisfactory application is an

oily mixture, of one tenth this strength.

I commenced the use of a milder preparation by the advice of Norman Walker, of Edinburgh, who employs a one per cent. mercury petrolatum combination, but, probably owing to the greater value of olive oil as a skin penetrant, as well as its soothing effect on the inflamed epidermis, I have since found the following much superior:

each day.

The mixture is nonirritating, extremely efficient, and not unpleasant to use. If necessary, compresses soaked with the solution can be fixed, by means of bandages or adhesive plaster, directly over the affected areas. In addition to the curative action, the prophylactic effect is most excellent, further progress of the infection being immediately checked. Its value can be best appreciated in a severe case involving the bearded region of an adult male. A continuous application extending over a period of twenty-four hours will loosen all crusts and scales, the face is then carefully shaved, not too closely, and the oily dressing renewed. In this way a case which ordinarily requires from a fortnight to a month of treatment by the old methods can often be completely healed in a week.

It is difficult to explain why the mild preparation is so much more efficient than those containing considerable quantities of ammoniated mercury. I believe it is due to the fact that the stronger ones give rise to more or less irritation, with consequent exudation of serum. This combines with the mercury, forming the insoluble albuminate which not only possesses slight, if any, antiseptic power, but also serves to block the mouths of the infected channels and hinder the penetration of the active mercurial.

The general health must, of course, receive attention. Tonics, such as strychnine, arsenic, and iron, alone or together, are usully needed, with plentiful amounts of simple, nourishing food and daily exercise in the open air.

276 RIDGE BUILDING.

Accidental Infection with Glanders .-- An unusual accident occurred recently in the public institute for the examination of food at Czernowitz. Dr. Luksch, the chief bacteriologist, while making some investigations on the Bacillus mallei put a large quantity of the bacilli, obtained from an animal from the slaughter house, into a centrifuge. The tube containing the glanders bacillus burst and the contents were scattered over the laboratory. The fragments of glass were picked up by some of the persons working in the room, and, as it was believed that the bacilli were dead or inert, no great precautions were taken to prevent infection. In the course of a few days all those who were in the room at the time of the accident, developed symptoms of glanders, especially of the tracheal and pulmonary type, and two of the victims died within forty-eight hours of the onset of the disease. Dr. Luksch also fell ill .- Journal of the American Medical Association.

Our Benders' Discussions.

A SERIES OF PRIZE ESSAYS.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVI.—How do you treat acute articular rheumatism?

(Closed July 15, 1908.)

LXXVII.—How do you treat varicose ulcer? (Answers due not later than August 15, 1908.)

LXXVIII.—How do you treat acute coryza? (Answers due not later than September 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred woords. words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal.

The prize of \$25 for the best essay submitted in answer to question LXXV has been awarded to Dr. P. A. Smithe, of Enid, Oklahoma, whose article appeared on page 166.

PRIZE QUESTION LXXV.

THE TREATMENT OF CHOLERA INFANTUM. (Continued from page 170.)

Dr. Joseph Baum, of New York, observes:

It is exceedingly important in the treatment of this condition to have the intelligent cooperation of the mother; it is therefore advisable at the very beginning to explain to her in easily understandable language, what the disease is, and what your plan of treatment will be; inform her that more important than any drug, is the temporary starvation of the baby, with plenty of cool water, internally and externally; plenty of fresh air; and the regulation of the baby's diet and method of feeding. She must promise to follow your orders implicitly; she must be ready to temporarily neglect her other household cares: and last, but not least, she must not follow the well intentioned, but fallacious advice of a neighbor, but always, if in doubt, wait until she can see or hear from you. Written directions to a perplexed and nervous mother are of great service.

It is of prime importance that all feeding, especially milk, should be stopped for at least twentyfour hours; substitute barley water or rice water or albumin water at two hour intervals; explain this seeming radical step to the mother by stating that the digestive organs need a rest, and that barley and white of egg contain plenty of nourishment dur-

ing this brief starvation period

Start at once with a calomel series (the sheet anchor in all diseases of children); give doses of at least one sixth to one quarter grain repeated every fifteen minutes, until at least ten or twelve doses are given, and you get the typical, green calomel stools. Castor oil, if it can be retained, is of splendid service, on account of its soothing effect and constipating after effect; but it generally increases the infant's gastric distress, and sufficient is seldom retained to properly purge the baby. Instruct the mother to save some of the napkins, especially those containing blood or mucus, for your

inspection; always remember that diarrhoa is a conservative process of great value in cholera infantum.

The baby should be out in the air as much as possible; if circumstances permit the child to be taken to the country or preferably the sea shore, for a long or a short stay, the prognosis is almost invariably good; the tonic, enriching sea air has a wonderful effect on these cases; where removal from the city is impossible, advise the mother to go on the daily sea trips of the charitable organizations, or remain all day at the river's edge, on the docks or recreation piers; if for some reason she can not leave her home then erect some temporary shack on the roof of the tenement and have the baby kept on the roof, night and day, bringing its nourishment, medicine, etc., from the apartment below. If the baby's temperature is over 102° F. order a tub bath with the water at 100° F. and gradually reduce to 85° F. by adding cold water or lumps of ice; if tub baths are impossible, give sponge baths of alcohol and water; this bath or sponge bath is to be repeated before the baby is put to sleep at night, and if necessary every three hours during the day, if the temperature remains at 102° F. or over. If the physician would take the trouble to show the mother how a sponge bath should be given, it would be heartily appreciated by her, and be decidedly beneficial to the child. The strict injunction as to fresh air at all hours is very necessary, for the fear "catching cold" is still very prevalent in this enlightened age; sponge baths can be given with impunity in the open air, and the air seems to have a quieting soporific effect on the little unfortunate, and a fretful, irritable baby in the house generally falls into a long restful sleep as soon as it is placed in the open air.

Always watch the stools closely, for they are the index as to when feeding can be recommenced; when the mucus or blood disappears; when no more undigested particles of food are present, then is the time to start in with milk; still adhering to barley water as a basis, feed the baby every two, better every three hours, with a mixture of seven ounces barley water and one ounce boiled (and cooled) milk. This is not the place to go into the milk question, but obtain the milk at one of the various charitable milk depots in the city (and if in the country from the same cow every day); boil every morning sufficient for the day's supply, and then put it on the ice to be used when required; in the same way every morning, enough barley water should be made for the entire day's use; but each bottle should be warmed and mixed at each feeding time.

Mothers who nurse their babies are generally exempt from cholera infantum in their nurslings; babies should not be weaned in summer, and the longer a child is breast fed the less likely is it to get diarrhœa; if a nursling does get cholera infantum the same rules as to starvation, the temporary use of barley water, and all other treatment, as herein written, should be followed.

If improvement in all symptoms—vomiting, diarrhoa, fever, insomnia, etc.—continues, add every day an ounce of milk and diminish an ounce of barley water; if vomiting or diarrhoa recur, omit one feeding; if it continues, stop all milk and go back to plain barley water for a few feedings until

conditions are improved, and then gradually add the milk again. Sometimes cow's milk will not be well borne, even after patient effort; some of the various artificial foods should be tried and given a fair trial, until finally one is found which agrees with the baby; very often liquid peptonoids will carry you over a couple of bad days, until the stomach again is able to retain milk.

Avoid if possible the use of whiskey or other heart stimulant; if necessary use good brandy in very weak dilution; absolutely avoid the usual intestinal mixtures of chalk, pepsin, and paregoric; if the bowels seem uncontrollable use intestinal irrigations of a saturated solution of boracic acid, using a small size rectal tube or a soft rubber catheter attached to the irrigation tube.

If some intestinal astringent must be used, it is better to use it alone without admixture with other drugs; infants stand bismuth (suspended in mucilage) in large doses very well; as an opiate when every feeding is immediately followed by a painful rectal discharge of the entire feeding, use the deodorized tincture of opium, in small doses, given in plain water after each feeding; and this opiate must be given carefully and stopped as soon as the desired effect is accomplished.

Fifteen years' experience with tenement house babies has taught me that the main cause of cholera infantum is the overfeeding and too frequent feeding of improper food by careless mothers; it is also certain that careless medical advice, consisting usually of prescriptions of all kinds of mixtures containing opium in some form, is the main cause of the high percentage of mortality; the druggist who has no conscience, but who has a ten cent panacea for every disease, is also a very serious menace in the poorer districts of the city.

To sum up, if a physician at the outset will clearly explain to the mother every detail of his plan of treatment, insisting on absolute compliance with all his instructions, and emphasizing the fact that babies often die from overfeeding; that starvation for a short time, with plenty of water internally and externally; that keeping the baby in the fresh air as much as possible day and night, with proper regulation of feeding; that all these are the essentials, and that without her intelligent assistance the baby cannot improve, he will surely strike the tenderest chord of her maternal instincts, and she will prove to be a willing and self sacrificing ally. Then with a preliminary intestinal clearing out with calomel or castor oil; with watching the stools for the first sign that regular feeding can be recommenced; with watchful care over the heart, and giving drugs only when indicated, most cases will soon return to normal health.

This treatment covers the usual type of "summer diarrhoea," the acute intestinal indigestion, the cholera infantum we usually see in the heated term.

There is a type of cholera infantum which is of a most serious import from the very outset; although pathological studies have not absolutely isolated the causative bacterial factor, the cases seem septic from the first; it is a fulminating type of the disease, with every symptom of the simple type greatly intensified, and accompanied by rapid emaciation, almost incessant emesis and purging.

and with symptoms of cerebral complications, and generally ends in a stuporous, comatose condition and death. The most active treatment is indicated; baths, gastric lavage, intestinal irrigation, opiates, and cardiac stimulants, and of course removal to the sea shore if possible; but the prognosis is usually bad, and in spite of the most heroic treatment the child dies as if overcome by sepsis.

Dr. W. F. Clary, Jr., of Memphis, Tenn., states:

This disease is most common in the summer season, affecting chiefly infants in their first year of

life and especially the bottle fed.

Little is accomplished by treatment of an infant who is already overpowered by toxic materials, producing a train of symptoms known as cholera infantum. The child that a few hours ago was fat, possibly puffy, but apparently big and strong, is now melting away before the ravages of this poisoning as snow before a summer's sun. Prostration is very profound, and unfortunately this disease is so frequently rapidly fatal that little opportunity is allowed for treatment.

However, much can be done in the prevention of this malady. The issue of paramount importance is prophylaxis. Promptly and skilfully treat all mild intestinal disorders, as these so frequently pre-

cede an attack of cholera infantum.

Hygienic and dietetic measures must be rigidly enforced. By so doing intestinal disorders are reduced to a minimum. However, when an attack is present, it is necessary to counteract the shock to the nervous and circulatory systems, and the surest remedy is a hypodermic injection of morphine, 1/100 gr.; and atropine, 1/600 gr., for a child about one year old, to be repeated every hour until restlessness, vomiting, and purging are greatly diminished.

The next indication in the treatment is frequent irrigations of the large bowel with normal salt solutions through long, soft rubber catheter, with pelvis elevated. It is well to use a half gallon of this solution at a time, allowing it to run in and out freely. If the temperature is high these injections should be cold.

Control the temperature by frequent tepid baths, gradually lowering the temperature of the water, continuing baths for twenty or thirty minutes at a time. Ice bag or cold cloths should be applied to

the head.

There has been a great loss of fluid from the vomiting and the serous diarrhoea. Refund this loss by hypodermoclysis, which is the most prompt and sure remedy for this deficiency. One half to one pint of a normal salt solution should be injected into the cellular tissue in the course of twelve hours, or even more, according to the case.

As soon as the morphine and atropine injections have quieted the stomach to a moderate degree, give calomel, 1/10 gr.; pulv. ipecac, 1/20; and pulv. cap-

sic., 1/20 gr., every hour.

Beyond this nothing should be taken on the stomach, except water and crushed ice with brandy or champagne. When stimulants cannot be retained on the stomach and are necessary, hypodermic injections of brandy, ether, or camphor must be resorted to. Hot mustard baths, a mustard poultice

to abdomen, and hot water bottles should be placed about the patient. If the patient has reached a relaxed stage and is becoming drowsy, the stimulation must be used freely. It is now too late for the use of morphine. When the sphincter relaxes and the child sinks into a coma, your treatment is all in vain. If your patient has escaped this condition and soon shows signs of improvement, then the question of nourishment looms up before you. Every article of diet is fraught with more or less danger to the infant. You are greatly concerned as to what is best to use. Of all the various articles the ones which have yielded the best results are egg albumen; rice, barley, or oatmeal waters, or water in which toasted bread has been soaked. It is only by extreme care now that future trouble is to be avoided. If possible remove the child from the city to the country or to the sea shore for the remainder of the summer. Keep a watchful eye on the child, and never relent until every vestige of intestinal disorder has disappeared.

There is great danger in returning to a milk diet, and it should be deferred as long as possible. During convalescence it is well to keep the bowels regulated with aromatic syrup of rhubarb and castor oil, equal parts. Put forth every effort to prevent a

recurrence, but never over treat the case.

Dr. Samuel A. Loewenberg, of Philadelphia, says:

Cholera infantum as such is at present a comparatively rare disease, thanks to the better hygiene and education among the poor. Very often a simple case of diarrhœa in a child during the summer months is termed "summer complaint," the common name for this disease.

Cholera infantum is a very grave and rapidly terminating disease, second only to its sister, Asiatic The duration is from eight to twelve hours, terminating either in improvement or death.

The very severity of this affection calls therefore for immediate and heroic action. In fact, it should

be treated as an emergency case.

The treatment of this affection is divided into three classes: I, Prophylaxis; 2, treatment of the attack proper; and, 3, treatment of convalescence.

1. Prophylaxis.—Cholera infantum occurs, 1, al-

ways during the hot summer months; 2, usually in bottle fed children; and, 3, most often among those living in congested districts. The combination of the three is the rule, since they tend to lower the babies' vitality. We therefore must direct our attention to improving that vitality, by correcting as far as possible any condition which will most likely predispose the patient to this disease.

If the parents are able the child, usually weakly, should be sent to the country or sea shore. unfortunately the parents are usually poor, and cannot afford to go anywhere. We must therefore ob-

tan fresh air in the best possible way.

I have the child kept out doors as much as possible, at the same time avoiding the hot sun rays. The sleeping room should not contain any unnecessary hangings, and the windows are to be kept open, avoiding strong draughts.

I also instruct the mother to get three or four half hoops, and fasten them to the baby's crib, viz., one at the foot and one at the head of the crib, the remaining one or two to be placed at an equal distance from one another. This forms a perfect framework, upon which a very light cheese cloth is stretched, forming a tent, with sufficient space for rapid interchange of air. The object of this tent is to keep out flies, mosquitoes, bedbugs, and other insects which irritate the child.

The bedding is to be changed twice daily, or oftener if required; rigid cleanliness about the child and clothing is to be observed most religiously. The child should receive one and in very warm days two

lukewarm baths daily.

If the child is artificially fed, too great stress cannot be laid upon the most scrupulous cleanliness of the bottle and nipples. I usually have preference to a percentage milk, suitable for the individual case, the fat, proteids, and alkalinity being changed according to the child's condition, viz., bowels, thriving, and restfulness. In cases where the parents are not of sufficient intelligence to prepare the milk, I either have recourse to one of the malted foods or prepared milk. Diarrhæa, no matter how slight, requires immediate attention, for very often that is the starting point of this grave and serious disease. Constipation, like diarrhæa, requires attention, because both are expressions of a disturbed digestion.

2. Treatment of the attack proper.—Cholera infantum is ushered in as a rule suddenly, with marked prostration, which is progressive, with high temperature, and incessant vomiting, and an uncontrollable serous diarrhea. The treatment should therefore be to (a) assist Nature in relieving the irritated mucosa of the gastrointestinal tract; (b) supportive; (c) reduction of temperature; and (d)

feeding.

The vomiting and diarrhoa are Nature's method of assisting to aid the angry mucosa. We must therefore assist her in elimination. If the vomiting is incessant, and the child is rapidly losing strength, I introduce a small, soft, baby stomach tube, and wash out that organ with one or two pints of a warm, normal saline solution. After that I introduce six to eight ounces of a one half per cent. boric acid solution. Usually that stops the vomiting; should it, however, continue, two or three hours after the first washing, I again wash out that organ, with a normal saline solution; then I introduce a six to eight ounces of a one half per cent. tannic acid solution. An hour later the patient is to receive 1/10 gr. of calomel, 15 gr. of soda, every half hour, until two grains of calomel are taken. I also give one or two drops of I in I,000 solution of adrenalin chloride in a teaspoonful of water every hour until the pulse is of better tension and the vomiting controlled. (I have had good results in those really exhausted children with the adrenalin

a. Bowels.—I give personally a high rectal enema (colonic irrigation) with a warm normal saline solution, one quart. This is followed after ten minutes by a cold, normal saline, as a low enema, that is given to control the temperature. Three hours after the high enema, if symptoms still persist, I give another high enema, using one pint of a normal saline solution at 85° F., and follow immediately with another pint of one half to one per cent, of argyrol solution in water. In grave cases, where the vomiting and diarrhoea are uncontrollable, and

the child is wasting rapidly, I give a hypodermic injection of 1/100 gr. of morphine sulphate, with 1/800 gr. of atropine sulphate; the same is repeated within three or four hours if occasion demands it. If, in addition, the kidneys are inactive, six to eight ounces of a normal saline solution is given subcu-

taneously, usually in the buttocks.

b. Supportive.—Whiskey seems to have the best stimulating effect in these cases; as much as a drachm can be given diluted to a child of one year at a dose; if the stomach does not tolerate it then it may be given hypodermically. In extreme cases I/100 gr. of strychnine sulphate should be given hypodermically to a child, one year old, every three or four hours. If the heart beats very rapidly and pulse is weak, I/800 gr. of atropine is added. The exact dose depends largely upon the child's condition.

c. Temperature.—The temperature is controlled by the tepid and gradually cooled bath, which may be given every three hours if required. The colonic irrigations and low cold water enema also help in the reduction of the fever. If the temperature still remains high I have a cold compress applied to the abdomen, that to be changed as soon as it gets hot, allowing, though, an intermission of two hours. That is, the compresses are to be applied steadily for two hours, then stopped for two hours, then recommenced if necessary. The ice cap to the head, and if the feet are cold a hot water bottle should be applied to them. Should the temperature fall suddenly below normal and the heart be weak, high stimulation should at once be given and the body surrounded with hot water bottles.

d. Feeding.—All food should be withdrawn for the first eight hours, or until the violence of the attack has somewhat subsided. The thirst is usually great; while food is not allowed, I do give about one half ounce of sulphuric acid lemonade every half hour. After the acute symptoms have somewhat abated, I give first one drachm of albumen water every ten or fifteen minutes, that is, being gradually increased. Then I allow a little barley or rice water. The next food may be fluid peptonoids, 30 drops in water every two hours. As the patient progresses, we gradually increase his food to

whey, peptonized milk, etc.

3. Convalescence.—This stage must be as carefully treated in its way as the preceding stage, because recurrence is not uncommon. The patient should still get fresh air, "salt water" air if possible. Food should be gradually increased, all cleanliness as rigidly observed as before, and the movements of the bowels controlled, which at this time are not altogether well.

Summary. Prophylaxis: Clearliness, appropriate

ood, and fresh air.

Treatment of attack.—Clean out the stomach and bowel, support the patient, overcome shock, reduce temperature, etc., supply body juices. Meet any indication necessary, do it quickly, intelligently, and rationally.

During convalescence, guide the patient to his recovery, remembering the gravity of the previous disease.

If this summary is kept in mind, no one can go astray.

(To be concluded.)

Correspondence.

LETTER FROM LONDON

4 Sleeping Stekness Commission.—Sir David Bruce and Malta Fever.—Women Barred from the Royal College of Surgeons by Vote, but It May Be Oversuled by the Council.—The Sheffield Meeting of the British Medical

LONDON, July 14, 1908.

A new commission will shortly proceed to East Africa to investigate sleeping sickness. The first commission went out in 1902 and did a considerable amount of valuable work until 1905, when it was temporarily suspended owing to the death of one of the members of the expedition, Lieutenant Tulloch, who contracted sleeping sickness in Uganda. The new expedition, which is organized by the Royal Society, will be in charge of Sir David Bruce, and he will be accompanied by Captain Hamerton and Captain Bakeman, R. A. M. C. They will leave England on September 25th and travel by way of Mombasa to Lake Victoria, where the Uganda Proectorate is preparing a laboratory for their use. The commission will investigate the natural history of Glossina palpalis and also Dr. Koch's theory that crocodiles provide food for the fly.

Dr. Bruce has just received a knighthood for his researches in connection with Malta fever, and he has also been awarded the Stewart Prize by the Science Committee of the British Medical Association for this work. The story of the discovery of the mode of infection in this disease, by goat's milk, forms an extremely interesting example of the value of experiments on animals to medicine. The great value of the discovery is shown by the fact that, whereas formerly Malta was considered one of the most unwholesome spots by Englishmen, and was dreaded by the officers and men of the army and navy, it is now one of the healthiest of garrisons. Thus, in 1905, before the discovery that goat's milk was the source of infection, there were 643 cases of Malta fever on the island. In 1907, when the cause had been found and preventive measures taken, the number of cases dropped to seven, truly a remarkable result.

The result of the poll of the members of the Royal College of Surgeons, as regards the admission of women to the membership and fellowship, has now been declared. Out of a possible 1,373. 1,053 fellows, and out of about 13.800 members available, 8,543 recorded their votes. The result was surprising. It shows a majority of 415 votes against the admission of women to the membership and a majority of 1,182 against their admission to the fellowship. It was expected that the voting would be in favor of the admission of women as members, but not as fellows. As a matter of fact the fellows of the college by themselves were in favor of the innovation, but their votes were outnumbered by those of the members. Of course, the council are not bound to act according to the voting, and it is very probable that women will be admitted in spite of the adverse vote, but the council has not yet come to a final decision. The members of the college have a grievance, as they are not allowed to have a seat on the council. But, as the

Roya! College of Surgeons is a purely scientific body and does not deal with medicopolitical matters, it can scarcely represent the interests of the general practitioners, though most of the members belong to that class, and it is perhaps an advantage that the council should be limited to those fellows who by strenuous and distinguished devotion to surgery have entitled themselves to that distinction. Apart from that, ample provision for dealing with matters affecting general practitioners is made by other tribunals, and there is no reason for the council to occupy themselves with such matters.

Arrangements are now complete for the annual meeting of the British Medical Association, to be held in Sheffield early next week. The president elect is Mr. Simeon Snell, F. R. C. S., ophthalmic surgeon to the Royal Infirmary, Sheffield, who will succeed Dr. Henry Davy, of the Royal Devon and Exeter Hospital. An interesting programme has been arranged by the local secretaries, and members of the association will have the opportunity of visiting several of the historic mansions situated in the country near Sheffield. The list of the papers to be read has been published, and several of them promise to be extremely interesting.

Therapeutical Hotes.

For Night Sweats in Phthisis.-For the suppression of excessive perspiration, the following prescriptions are suggested by Courtois-Suffit and Tremolières, previously cited:

| | I. |
|--------------|---|
| \mathbf{R} | Pulverized white agaric,gr. vi |
| | Calcium phosphate,gr. ix |
| | Pulverized opium,gr. 13 |
| M. | ft. cachet i. Sig.: One cachet once or twice daily. |
| | II |
| \mathbf{R} | Ergotine,gr. 13 |
| | Lactic acid |
| | Boiling distilled water,q. s. ad xv |
| M. | |
| | III |
| \mathbf{R} | Sage leaves, |
| | Distilled water, |
| M | et sig. Make an infusion and take at one time after |

it has cooled. IV. fore the sweating comes on.

Sig.: One pill at night. (Four pills is the maximum

If the state of the digestion militates against the use of pills the following may be given hypoder-

Sig.: Ten to twenty drops to be injected hypodermically.

To Control Hæmorrhage in Phthisis.--In hæmoptysis absolute rest and quiet must be ordered, and the patient kept exposed to pure air not overheated. The cause should be searched for and overcome, if possible (exposure to the sun, digestive disturbances, etc.). Hot foot baths and sinapisms should be used. Dry cupping, turpentine compresses, or chloroform may be used as indicated, but do not blister or apply the cautery. If the bleeding is very copious, tie a bandage tightly around the arms and legs close to the trunk,

The internal treatment consists of the administration of ergot, either as ergotine in fiteen to thirty grain doses administered hypodermically during the day, or as freshly pulverized ergot of rye combined with quinine, as in the following prescription:

| B I | reshly | pulveria | zed er | got, | | | | | gr. | iii |
|-------|-----------|----------|---------|------|-----|--------|-------|------|--------|-----|
| | Quinine | sulphate | e, | | | | | | gr. | iss |
| | t ft. cac | | | | | | | | | |
| Sir . | One | anchet . | 0370437 | half | hou | 197 17 | us+i1 | 0.42 | offect | - 1 |

Sig.: One cachet every half hour until an effect is produced.

In grave hæmorrhage injections of gelatin serum should be employed, the gelatin used having been previously sterilized in an autoclave to avoid the danger of tetanic infection. The following formula for gelatin serum is proposed:

| \mathbf{R} | Gelatin | (carefully | st | e | ril | liz | ze | d | а | t. | 24 | 18 | 0 |] | F. |) | , | | | | | 3s | S |
|--------------|-----------|------------|----|---|-----|-----|----|---|---|----|----|----|---|---|----|---|---|---|---|--|----|----|---|
| | Distilled | water, | | | | | | | | | | | | | | | | | ۰ | | | Oi | ì |
| | Sodium | chloride, | | | | | | | ٠ | | | | | | | | | ٠ | | | gı | | C |
| M. | | | | | | | | | | | | | | | | | | | | | | | |

Inject five to six drachms of the solution and repeat two or three times a day for two or three days in succession.

(The article from which we have quoted concludes with advice and prescriptions for the treatment of other conditions usually associated with pulmonary troubles, and such as are deemed of value and interest will be reproduced in later issues.)

Application in Chronic Pharyngitis.—The following is applied as a paint by Heindl (cited in Journal de médecine de Paris, May 23, 1908) in the treatment of chronic pharyngitis:

| | Trichloracetic | | | |
|-----|---|-----|------|--------------|
| | Ferric iodide, Potassium iod | id. | | gr. ii ; |
| | Glycerin, | | | |
| 7.4 | 01,111111111111111111111111111111111111 | | | |

The Expulsion of Tapeworms.—Schilling (Therapeutische Monatshefte, April, 1908) advises the administration of a large dose of oleoresin of aspidium combined with pulverized jalap to be given in two portions within a period of thirty minutes. The following is the prescription:

The evening before the administration of the anthelmintic the patient should be fed with soap, and a quarter of an hour before the medicine is taken he should be given some black coffee with sugar, or make a light breakfast of bread and coffee. The worm is expelled as a rule in three or four hours. During this time the patient must fast. If the worm does not come away quickly a rectal injection of warm water (one or two pints) should be given.

Liquid Soap for Surgeons' Use.—To replace the ordinary white soap used for washing the hands of surgeons, M. Richaud (Précis de thérapie et de pharmacologie; Répertoire de pharmacie, June 10, trost advises the use of a liquid soap made accord-

ing to the following formula, which, he says, produces a saponaceous fluid which is very frothy and penetrable:

| P_k | White | soap | | | | | | | | | | | | | | 1000 | part-; |
|-------|---------|--------|------|----|------|-------|---|------|---|----|---|------|--|--|---|-------|--------|
| | Soft so | oap, . | | ٠, | | ٠ | ٠ | | | ٠. | ٠ | | | | | 1000 | parts; |
| | Poppy | oil, | | | | | | | | | | | | | , | . 500 | parts; |
| | Water, | | | | | | | | ٠ | | | | | | | 3000 | parts. |

The white soap is scraped, mixed with the other ingredients, and the whole heated to form a paste, to which is added:

| Glycerin,50 | parts; |
|-----------------------------|--------|
| Betanaphthol,50 | parts; |
| Alcohol (90 per cent.),500 | parts; |
| Oil of lemon,50 | parts; |
| Water,enough to make 15,000 | parts. |

Enema for Relieving the Bowels in Intestinal Colic.—At the House of Relief of the New York Hospital the following enema is given for the relief of intestinal colic:

| P_{i} | Oil of turpentine, | |
|---------|------------------------|---|
| | Oil of cotton seed, | |
| | Water, enough to make. | |
| | water, chough to make, | ٠ |

To the mixture formed by the first three ingredients add one pint of hot water, to be followed by sufficient additional cold water to make the whole measure two pints. The best results are obtained by using a bulb syringe and soft rubber rectal tube, inserting the tube high up.

Sodium Metavanadate for Anorexia.—According to an extract from La Pratique thérapeutique in La Clinique, sodium metavanadate is useful as an appetizer in the anorexia that accompanies pulmonary tuberculosis. It is prescribed thus:

| | | metavanadate, | | |
|-----|-----------|---------------|------|--|
| 7.4 | Distilled | water, | | |

Sig.: One tablespoonful to be taken half an hour before each meal.

It is not advisable to prolong the use of the sodium metavanadate solution beyond five or six days.

To Overcome Dysphagia in Pulmonary Tuberculosis.—The difficulty in swallowing experienced by phthisical patients is overcome to some extent by the application as a paint to the larynx by means of cotton wound around the point of a probang of the following:

| \mathbf{R} | Cocaine hydrochloride,gr. ivs | s; |
|--------------|---------------------------------------|-----|
| | Morphine hydrochloride,gr. 3 | |
| | Distilled water, 吸 lxx Glycerin, 透 | |
| 3./ | Glycerin, | 55. |

Insufflations of powders containing cocaine, morphine, orthoform, anæsthesine or similar substances through a suitable tube into the larynx are also recommended, the following being typical prescriptions:

| | I. |
|----|-----------------------------------|
| 14 | Cocaine hydrochloride,gr. 1/7; |
| | Morphine hydrochloride,gr. 1/12; |
| | Pulverized sugar of milk,gr. iss. |
| M. | Ft. pulv. No. 1. |
| | II. |
| 11 | Orthoform, |
| | Pulverized sugar of milk, |

M. Ft. pulv. No. 1.

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NEW YORK, SATURDAY, AUGUST 1, 1908.

STATE EXAMINATIONS.

In our last issue, in an article entitled Obstacles in the Way of the Practitioner (page 172), we made certain remarks concerning the futility of some State examinations as tests of a candidate's fitness to enter upon the practice of medicine. Since that article was prepared we have received the July number of the Albany Medical Annals, in which there is published a brief but important paper by Dr. Willis G. Tucker, professor of chemistry in the Albany Medical College, "prepared by request for the Fourth Annual Conference of the Council on Medical Education of the American Medical Association, held in Chicago, April 13, 1908." Dr. Tucker is a veteran teacher of chemistry in its relations to medicine and an educator of ripe experience. We have before had occasion to cite his views, which are always expressive of sound judgment and stated with all possible fairness and courtesy. We are now particularly gratified to meet with this latest communication of his, because it amply justifies what we said last week. Dr. Tucker quotes the following chemistry paper, "set at a recent examination in a great State":

- I. What is valency?
- 2. What characteristic reaction would ozone or hydrogen dioxide have on potassium iodide?
- 3. Complete this formula (sic): Na,SO₄ + 2C + CaCO₈ =.
- 4. What is formed by treating hydrochloric acid with manganese dioxide?
 - 5 Complete this formula (sic): K,O+2C=

Dr. Tucker comments as follows:

I have been engaged in teaching chemistry in a medical school and elsewhere for over thirty years, and have no hesitation in saying that this paper is entirely inadequate and absolutely worthless as a test of a man's knowledge of chemistry as related to medicine and in determining his competency to practise medicine. Only two of the questions, the second and fourth, have any bearing upon medicine, and, while the fourth is simple enough, it is comparatively unimportant for the reason that chlorine is not ordinarily generated on a large scale in the manner specified. The first question might be retained if the number of topics had been greater, but to give so much weight to a matter like valency in a medical examination is entirely unjustifiable. The third question has to do with the chemical changes taking place in the manufacture of soda ash by the old process, and, while proper enough in its place, is of no more interest or importance to the student or practitioner of medicine than the canals of Mars. The last question assumes the existence of an oxide of potassium that I never heard of and which has, I believe, no existence. The examiner had in mind the reaction taking place in the manufacture of metallic potassium, which I conceive to be a procedure as far removed from everything medical as the manufacture of furniture polish or shoe blacking. This paper may be objected to on the lawyer's grounds-that three fifths of the questions are incompetent, immaterial, and irrelevant. The possession of such information proves nothing as to medical competency, and the lack of it should be allowed to debar no man from securing his license. I doubt whether one member in ten on our State boards, save perhaps the examiners in chemistry, could get forty per cent. on such a paper as this.

We agree entirely with Dr. Tucker in his strictures, and we are also of his opinion when he says that no medical school could fit a man to pass such examinations, unless, indeed, it wasted time that ought to be devoted to really medical instruction. Dr. Tucker thinks that many State examining boards are improperly constituted, that unfit persons are selected as their members, and he would have them made up of those who have had experience in medical teaching. We would add, in medical practice also. Evidently the average State examination is no trustworthy criterion of a candidate's title to the license to practise.

THE ATTEMPTED SUPPRESSION OF DIN.

New York is a noisy town, far noisier than is at all necessary or easily supportable. For many of its noises there is no pretense even of apparent necessity; on the contrary, those who cause these noises do so in a spirit of bravado and with the set purpose of tormenting their fellows. The man who has a load or an article of merchandise to deliver on the sidewalk takes pains to drop it as noisily as he can, sleep is murdered by the nocturnal trucking of steel beams without any padding, the bodies of two-wheeled carts are made to proclaim the

horse movement loudly, chauffeurs "honk" almost incessantly their insolent "get out of my way," the hawkers bark their raucous cries most maddeningly, the scissors grinders bray their mockeries of bugle calls, and at midnight Jennie Leatherlungs joins her din to the atrocious staccato "virtuosity" of the professional piano thumper and the calls of coachmen waiting in line in a block in which an evening entertainment happens to be going on.

Of course we must submit to necessary noises, of which there will always be a plenty, but we hope that the Police Department's movement for the suppression of the unnecessary ones will suffer no abatement. Only the "old clo" men seem to oppose it seriously, and their trade is hardly important enough to entitle it to exemption. It is on the sick, of course, that the multifarious street noises work their worst, and one would think that the Health Department might be justified in taking a hand in their suppression. As it is, no one city department seems to have made the effort purely of its own volition; several years ago Dr. John H. Girdner tried to rouse a popular demand for the extinction of unnecessary and indefensible clang, and more recently Mrs. Rice has labored valiantly in the same direction. Perhaps their efforts are now bearing fruit in the execution of General Bingham's edict. The New York Herald, which may fairly be said to have carried on a crusade of its own against street din, is also entitled to much credit.

Sweet church bells have been almost silenced in this community, in order that the Sunday morning naps of the lazy might not be curtailed, and the really useful bell fire alarm system was long ago discontinued, though perhaps not for fear of disturbing anybody. Why, then, should not the cry of the sick and the overworked be heeded when it comes to a question of din that is hideous and perfectly avoidable? It is the duty of all good citizens, and particularly of the medical profession, to do everything in their power to strengthen the hands of those who have at last made an authoritative attempt to save us from "the blows of sound."

CLEANLINESS AN ELEMENT OF PURITY IN FOODS.

The active crusade against filthy lunch rooms and restaurants which was recently inaugurated by the efficient health officer of the District of Columbia suggests a direction for the activity of city health officials generally which will surely be productive of good. In every large city there are hundreds of small restaurants and lunch rooms which are conducted in such an unsanitary manner as to make them breeding places of disease.

It may be objected that such conditions necessarily accompany any effort to reduce the cost of food to the low level demanded by the patrons of restaurants of this class, but such assertions have been abundantly disproved by the experiments made by the leaders in what is generally termed "social economics." The success of certain establishments has demonstrated that cleanliness and cheapness may go hand in hand, and quite recently a young woman has established a kitchen where meals are supplied at an exceedingly low cost, a full meal being furnished for about eight cents.

POLIOMYELITIS.

The search for the ætiological factor in anterior poliomyelitis has thus far been fruitless. Bacterial cultures have, for the most part, been negative, and the statements of those who have professed to have obtained positive results have been, thus far, unsupported. The recent New York epidemic of this disease placed a large amount of material under survey, the results of some of which are before us in an excellent study by Dr. Martha Wollstein, entitled A Biological Study of the Cerebrospinal Fluid in Anterior Poliomyelitis (Journal of Experimental Medicine, July).

The author's idea was that, if the disease was due to an undiscovered microorganism which could not be detected microscopically, it might still be possible to find evidence of its presence by demonstrating its specific antigen (in the sense of the Bordet, Wassermann, and Bruck reactions). Since the disease is localized in the spinal cord and brain, she considered it not improbable that the antigen might find its way into the cerebrospinal fluid. Early cases then might show the antigen in the cerebrospinal fluid and late cases might, assuming an infectious antigen producing organism as a cause, show the presence of antibodies discoverable in the blood serum or in the spinal fluid itself.

Cerebrospinal fluid was obtained by lumbar puncture in some twenty cases, at times varying from the second day to the eighth week of the disease. In every instance the fluid was clear and colorless, save when occasionally mixed with blood. Continual experiments showed it to be sterile in fifteen cases; in five, growths occurred; one was that of a white staphylococcus, a second was that of a Gram positive bacillus, and three were those of a large Gram positive coccus apparently similar to the organism described by Giersvold as having been found in twelve cases of the Norwegian epidemic and by Harbitz and Scheel in three.

The study of the serum reactions, in one case that came to autopsy, showed that no two interacting substances, presumably antigen and antibody, capable of uniting and anchoring complements, were demonstrable in the blood serum, cerebrospinal fluids, and organ extracts studied. Therefore, the diagnosis of poliomyelitis by means of a serum reaction was apparently not possible, and no light could be thrown on the ætiology of the disease by this reaction.

MALARIA IN CYPRUS.

A Cyprian weekly newspaper entitled Σάλπις presents in its issue for June 12th a leading editorial on malaria (ἐλωνωσία) in Cyprus, taking as its text Dr. Achilles Rose's article on Malaria in Greece, published in the New York Medical Journal for April 11th. It depicts the ravages of malarial disease in Cyprus, and calls on the Greek government to rouse itself to energetic measures for draining the marshes and exterminating mosquitoes, even going so far as to suggest that the British government, the Liverpool School of Tropical Medicine, and Sir Ronald Ross be called upon to aid in the undertaking.

PLASTER OF PARIS IN THE TREATMENT OF SMALLPOX.

Few of us have had a large experience in the treatment of smallpox, and so, unconsciously taking it for granted that the same deficiency of actual observation holds good in the case of others, we are apt to put too much confidence in published accounts emanating from those whose opportunities have been limited. But surely we may ascribe importance to the views of a practitioner who speaks on the strength of an experience of more than 450 cases occurring partly in hospital and partly in private practice. Such a man, as we learn from the Semaine médicale for July 15th, is Dr. I. Zdanovitch, a Russian physician. It is true that he speaks only of the palliative, or local, treatment, but that is very important in smallpox.

Zdanovitch finds that dry plaster of Paris is by all odds the best application for diminishing the suppuration and mitigating the subsequent pitting, as well as for allaying the intense itching and overcoming the loathsome odor of the disease. Its good effects are, of course, most noticeable in severe cases of confluent smallpox, those that are prone to terminate in deep cicatrices and actual deformity of the face. The use of plaster has the advantages, by no means inconsiderable, of being simple and of coming within the means even of the poorest families.

The patient is put to bed entirely nude, as is done in cases of extensive burns, and the skin is covered with a thick layer of drv plaster of Paris, which, of course, must be freshly ground. If at any time pus is seen to have oozed through the plaster, the powder is renewed at the oozing points. The patient is covered with light bedclothes, nothing but a sheet if the weather is warm. Under the influence of this application the repulsive odor soon disappears, because the plaster, by virtue of its affinity for water, absorbs the pus and thus hinders its decomposition. and this is particularly needful in situations where there are deep folds of the skin. The alleviation of itching is said to be very decided. Under this treatment the secondary fever, or fever of suppuration, often does not occur at all, for the pus is so thoroughly imbibed by the plaster that it has but little chance of being absorbed into the system. The dressing does not prove irritating, though there may be a slight sensation of smarting in case there is an exposed granulating surface.

THE "ÆSTHETIC" TREATMENT OF FRACTURE OF THE CLAVICLE.

All methods of treating fracture of the collar bone are conducted, so far as we know, with prominent attention to the object of obviating unsightliness of the injured part when the broken bone has undergone repair, but in a recent Paris thesis, as we learn from the *Presse médicale* for June 13th, in an article signed "J. D.," M. Hérard applies the term "æsthetic" par excellence to a procedure recommended by M. Couteaud about a year ago, at a meeting of the Paris Surgical Society held on June 12, 1007.

The patient is to lie at the extreme edge of a hard bed, with the arm of the injured side hanging down clear of the bed, not resting on anything. The weight of the arm is intended to drag upon the outer fragment of the broken clavicle and thus maintain coaptation. After two or three days, when spasmodic action of the muscles has been overcome, the irksomeness of the position may be mitigated by placing a cushion under the forearm flexed upon the arm. This attitude is to be maintained until union of the fragments has taken place. Out of eleven cases treated on this plan, nine, it is reported, resulted in union with perfect position; in the two others the method seems not to have been adhered to rigidly.

It is said that the patient soon grows accustomed to the enforced quiescence, though it is admitted that the tingling in the arm is at first very hard to bear. Œdema, as we can quite well understand, may be prevented by bandaging the arm. It seems to us that this sort of treatment must be little short of torture. To lie motionless on the back for days together, as patients are sometimes instructed to do after laparotomy has been performed upon them, is more than most flesh and blood can endure, and we believe that the injunction to do so is rarely obeyed. When to this is added the maintenance of strict abstention from moving an arm, the patient's condition must be really pitiable. Perhaps there are some young women whose great desire to preserve a faultless outline may serve to enable them to submit to the treatment, but we doubt if any ordinary man would consent to keep it up for the requisite length of time, two or three weeks.

Dbituary.

HORACE YOUNG EVANS, M. A., M. D., of Philadelphia.

Dr. Evans died in Breakwater, Maine, near Rockland, on Thursday, July 2d. He was born in Ches-·ter County, Pa., on October 14, 1834. He received the degree of bachelor of arts from Princeton in 1855, and subsequently took the master's degree. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1858. He then took postgraduate work in Edinburgh, London, and Paris. In 1860 he entered the United States army as surgeon to the Philadelphia City Troop, and remained in the army until the fall of Richmond.

Dr. Evans was president of the Philadelphia County Medical Society in 1882. He was a fellow of the College of Physicians of Philadelphia and was one of the censors of the college. He was also a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, and the American Medical Association.

WILLIAM ELMER, M. D., of Trenton, N. J.

Dr. Elmer, who was born in Bridgeton, N. J., in 1840, died at Atlantic City, N. J., on Sat-urday, July 18th. He came of a long line of physi-cians, being the third William Elmer in three successive generations of medical men. The physicians in this family run back two generations beyond the first Dr. William Elmer. In 1869 Dr. Elmer moved to Trenton, N. J., where he had resided since. He was a former president of the Medical Society of the State of New Jersey, and at the time of his death was the director of the Mercer Hospital in

Dr. Elmer's personality endeared him to his many friends in the medical profession in Trenton and other places. He was in his sixty-eighth year.

Rews Atems.

The Regents of the University of Utah announce that hereafter no student, teacher, or employee infected with tuberculosis will be admitted to the class rooms, or to the

Typhoid Fever Epidemic at Hastings, Pa.—Hastings is a town in Cambria County, of about 1,600 population. Twenty-one cases of typhoid fever were reported from there during the week ending July 16th.

The Rhode Island Medicolegal Society met in annual Section recently and elected the following officers for the

session recently and elected the following officers for the ensuing year: President, Dr. A. H. Longfellow; vice president, Dr. George H. Huddy, Jr.; secretary and treasurer, Dr. C. R. Dotem.

Personal.—Dr. F. Raymond, of the University of Paris, has received from Oxford University the degree of

doctor of science.

Dr. O. J. Hager, of Moorehead, Minn., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine

The British Columbia Medical Association will hold its annual meeting at Vancouver on August 20th and 21st. Among those who will present papers at this meeting are Dr. Joseph Price, of Philadelphia, and Dr. Bingham, of Toronto. Dr. J. M. Pearson, of Vancouver, president of the society, will preside.

the society, will preside.

Contagious Diseases in Chicago.—During the week ending July 18, 1908, 240 cases of communicable diseases were reported to the Department of Health. Of these 58 were of measles, 55 of scarlet fever, 41 of diphtheria, 31 of whooping cough, 31 of tuberculosis, 17 of typhoid fever, 4 of chickenpox, 1 of smallpox, and 2 of diseases of minor inventures. importance

The New York Eye and Ear Infirmary.—Plans have been filed for the enlarging of this institution, which is situated in Thirteenth Street, near Second Avenue. A third story is to be added, which will be fitted up as an isolation ward, to afford enlarged space for the general hospital service of the infirmary. The improvements will cost about \$5,000.

cost about \$5,000.

Richmond, Va., Academy of Medicine and Surgery.—

A meeting of this academy was held on the evening of Tuesday, July 28th. The programme included a paper on Indications for Surgical Treatment of Diseases of the Brain, by Dr. J. Shelton Horsley, and a paper on the Results of Gastric Surgery, by Dr. J. W. Henson. The gental disease is a factor program of the Results of Gastric Surgery, by Dr. J. W. Henson. The gental disease is a factor program of the Results of Gastric Surgery. eral discussion of these papers was opened by Dr. Stewart McGuire

The Alvarenga Prize of the College of Physicians of Philadelphia was awarded to Dr. William T. Shoemaker, of Philadelphia, for the essay entitled Retinitis Pigmentosa, with an analysis of seventeen cases occurring Pigmentosa, with an analysis of seventeen cases occurring in deaf mutes; including laboratory examinations of the blood and urine in eleven cases. The laboratory examinations were made by Dr. John M. Swan, of Philadelphia. Charitable Bequests.—By the will of the late Rev. Hugh P. Smyth, St. Elizabeth's Hospital, Boston, receives

\$5,000.

By the will of A. J. Macky, the town of Boulder, Col., receives the sum of \$50,000 to maintain a hospital and home for indigent widows and orphans.

By the will of Mary Burt, the Pennsylvania Industrial Home for Blind Women of Philadelphia receives \$2,000

Change of Date of the Meeting of the American Hospital Association .- Announcement is made by the local Committee of Arrangements that, owing to the impossibility of securing adequate hotel accommodations in Toronto during the week of September 22d, or earlier, the date of the tenth annual meeting of the American Hospital Association has been changed. The conference will be held at the King Edward Hotel, Toronto, on September 20th and with and October 1st and 20th and Suggistal Association between the conference will be a conference with the con

The Chattahoochee Valley Medical and Surgical As-

The Chattahoochee Valley Medical and Surgical Association held its fourth annual meeting in Auburn, Ala., on July 15th, and elected the following officers for the ensuing year: Dr. J. H. McDuffie, of Columbus, Ga., president; Dr. J. G. Palmer, of Opelika, Ala., first vice president; Dr. J. Love, of Opelika, Ala., second vice president; Dr. W. J. Love, of Opelika, Ala., secretary; Dr. A. J. Coley, of Alexander City, Ala., treasurer. The meeting was a president; the rest interest. ing was largely attended, and was one of the most interest-ing and instructive ever held by the association.

Floyd County, Ga., Medical Society.—The regular monthly meeting of this society was held in Rome on Saturday, July 25th, at 10:30 a. m. The general subject for discussion was Obstetries. Dr. Robert H. Wicker read a paper on the Hygiene of Pregnancy. Dr. A. C. Shamblin read a paper on Abortion. Dr. James E. Ivey, Dr. W. J. Shaw, and Dr. Turner presented reports of interesting cases. The general discussion was onened by Dr. James C. The general discussion was opened by Dr. James C Watts.

The Franklin District, Mass., Medical Society held a meeting on Tuesday, July 14th, in Greenfield. The programme included a paper on Pneumonia by Dr. F. E. Johnson, of Erving, and the report of a case of carcinoma of the pancreas by Dr. J. A. Mather, of Colrain. The next meeting will be held on September 8th. Papers will be read by Dr. Charles L. Upton, of Shelburne Falls, Dr. John E. Urquhart, of Ashfield, and Dr. Francis E. Johnson, of Erving. The officers of the society are: President, Dr. J. W. Cram, of Colrain; vice president, Dr. C. L. Upton, of Shelburne Falls; secretary and treasurer, Dr. Clara M. Craescowich of Graesfield.

Greenough, of Greenfield.

A Crusade to Reduce the Infant Mortality of Chicago .- A systematic effort is being made in Chicago to reduce the death rate among babies in the tenement district. The city council has transferred \$10,000 from the contagious disease fund to a special fund to be devoted to the care of children during the hot weather, and seventyfive physicians have been engaged to carry on the work of educating mothers in how to feed and care for babies. A thorough sanitary inspection is being made of all milk depots and stores handling milk, and cards are being distributed in this district warning parents to take care that

no unclean milk is fed to the babies.

Assistant Surgeon Wanted for Freedmen's Hospital. -The United States Civil Service Commission announces that an examination will be held on September 2 and 3, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of first assistant surgeon (male) at Freedmen's Hospital, at \$1,500 a year, and vacancies requiring similar qualifications as they may occur at the hospital. Freedmen's Hospital is an institution for the treatment of colored patients, and it is understood to be the practice of the department to appoint only colored persons to positions therein. Applicants must be citizens of the United States and twenty years old or over on the date of the examination. Applicants should apply at once to the United States Civil Service Commission, Washington, D. C., for application Form 1312.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July

| | - July | / IS | ui | y 25 |
|--------------------------|--------|---------|--------|--------|
| | | Deaths. | Cases. | Death- |
| Tuberculosis pulmonalis | | 173 | 400 | 173 |
| Diphtheria | 203 | 2.2 | 175 | 2.2 |
| Measles | | 13 | 219 | 7 |
| Scarkt fever | | 1.4 | 131 | r) |
| Smallpox | | | | |
| Varicella | 35 | | 9 | |
| Typhoid fever | | ` ` | 7.1 | 15 |
| Whooping cough | 2 - | | 3.1 | |
| Cerebrospinal meningitis | 7 | 7 | 12 | 7 |
| | | | | |
| 'Catala | | | | |

The Mortality of Chicago.—During the week ending July 18, 1908, there were reported to the Department of Health of the City of Chicago 526 deaths from all causes, as compared with 510 for the preceding week and 500 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.66. Of the total number of deaths 151 were of children under one year of age, and 36 deaths 151 were of children under one year of age, and 30 of children between one and five years. The principal causes of death were: Apoplexy, 8; Bright's disease, 33; bronchitis, 3; consumption, 66; cancer. 28; convulsions, 5; diphtheria, 2; heart diseases, 53; influenza, 1; intestinal diseases, acute, 96; measles, 2; nervous diseases, 13; pneumonia, 21; scarlet fever, 4; suicide. 10; sunstroke, 4; tetanus, 1; typhoid fever, 3; violence (other than suicide), whooping cough, 2; all other causes, 138.

The Health of Pittsburgh.—During the week ending the control of the first property of the control of the control

July 11, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 2 cases, o deaths; typhoid fever, 26 cases, I death; scarlet fever, 13 cases, 1 death; diphtheria, 5 cases, 1 death

measles, 55 cases, 3 deaths; whooping cough, 15 cases, 0 deaths; pulmonary tuberculosis, 21 cases, 5 deaths. The total deaths for the week numbered 147, in an estimated population of 565,000, corresponding to an annual death rate of 13,70 in 1,000 of population. During the week ending July 18th the following cases of transmissible diseases ing July 16th the following cases of transmissions were reported: Chickenpox, I case, 0 deaths; typhoid fever, 27 cases, 5 deaths; scarlet fever, 7 cases, 1 death; diphtheria, 6 cases, 0 deaths; measles, 57 cases, 4 deaths; whooping cough, 10 cases, 1 death; pulmonary tuberculosis, 29 cases, 13 deaths. The total deaths for the week numbered 196, corresponding to an annual death rate of 18.03 in 1,000 of population.

Vital Statistics of New York .- During the week ending July 18, 1908, there were reported to the Department of Health of the City of New York 1,567 deaths from all causes, as compared with 1,516 for the preceding week and 1,555 for the corresponding period in 1907. There were 755 deaths in Manhattan, 138 in the Bronx, 547 in Brooklyn, 97 in Queens, and 36 in Richmond. The annual death rate in 1,000 of population was 18,48 for the whole city, and the state of the five because it was as follows. Machattan for each of the five boroughs it was as follows: Manhattan, 17.18; the Bronx, 21.08; Brooklyn, 19.12; Queens, 20.41, and Richmond, 24.49. The total number of deaths of children under five years of age was 703, of which 426 were due to diarrhœal diseases. There were 173 deaths from pulmonary tuberculosis during the week, as against 152 for the corresponding period in 1907. The deaths by violence numbered 121, of which 27 were from sunstroke, 3 from homicide, 16 from suicide, and 75 from accidents. Four hundred and eighty-nine marriages, 2,263 births, and 116 still births were reported during the week

The Health of Philadelphia.—During the week ending July 18, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 24 cases, 6 deaths; scarlet fever, 25 cases, o deaths; chickenpox, 8 cases, o deaths; diphtheria, 32 cases, 4 deaths; cerebrospinal meningitis, 2 cases, o deaths; measles, 63 cases, 4 deaths; whooping cough, 35 cases, 10 deaths; pulmonary tuberculosis, 101 cases, 48 deaths; pneumonia, 24 cases, 24 deaths; erysipelas, 2 cases, 0 deaths; puerperal fever, I case, o deaths; trachoma, 5 cases, o deaths; cancer, 18 cases, 20 deaths; mumps, 2 cases, o deaths; tetanus, 2 cases, I death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than cases, I death. The following deaths were reported from their transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 14; diarrhoea and enteritis, under two years of age, 115; dysentery, 1; cholera morbus, 2. The total deaths numbered 517 in an estimated population of 1,532,738, corresponding to an annual death rate of 17,50 in 1,000 of population. The total infant mortality was 237; under one vary of age, 187; between one and two was 227; under one year of age, 187; between one and two years of age, 40. There were 23 still births, 10 males and 13 females. There were 7 deaths from heat and sunstroke, 4 adults and 3 minors.

Clinical Director Wanted for the Government Hospital for the Insane.—The United States Civil Service Commission announces an examination on August 26, 1908 to secure eligibles from which to make certification to fill a vacancy in the position of clinical director in the Government Hospital for the Insane, Washington, D. C., at a salary of \$2.500 a year, with maintenance in the hospital, and vacancies requiring similar qualifications as they may occur in any branch of the service. To become eligible, the applicant must be a graduate of a regularly incorporated medical college, must have had at least ten years experience in institutions for the care and treatment of the insane, during which period he must have received training with special reference to work along clinical lines, research work, in pathology, and in psychopathology. He must have contributed to medical literature on the general subject of insanity, or some of its phases, or with reports of cases coming under his observation. He must have a fair reading knowledge of at least one foreign language, preferably German. The appointee, in his capacity as clinical director, will have general supervision of all the medi-cal work of the hospital; the supervision and care of the hydrotherapeutic departments, operating room, and the training school for nurses; all transfers of patients from one service to another will be made through him; he will have charge of the clinical records and see that they are uniformly maintained, and be in a position to offer suggestions that recent medical literature may contain along the lines of clinical psychiatry. Applicants must be citizens of the United States, and not over thirty-five years of age on the date of the examination. Applicants should apply at once to the United States Civil Service Commission, Washington, D. C., for application Form 304 and special form.

Public Health Investigations in Buffalo.—Dr. Edward A. Bowerman, president of the Buffalo Academy of Medicine, was recently empowered to appoint commissions to investigate certain conditions relative to public health. He has named the following: Commission on milk supply—Dr. Irving M. Snow, chairman; Dr. De Witt H. Sherman, Dr. L. Schroeter, Dr. Nelson G. Russell, Dr. Julius H. Potter. Commission on inspection of schools and school children—Dr. P. W. van Peyma, chairman; Dr. Prescott Le Breton, Dr. Frank J. Frey, Dr. Irving P. Lyon, Dr. John R. Gray, Dr. Herman K. DeGroat, Dr. Albert G. Woehnert, Dr. George F. Cott, and Dr. Lee M. Francis. Commission on need of hospitals for contagious diseases—Dr. Julius Ullman, chairman; Dr. Allen A. Jones, Dr. Grover Wende, Dr. DeWitt H. Sherman, Dr. Robert F. Sheehan. Commission on the reporting of tuberculosis—Dr. John H. Pryor, chairman; Dr. DeLancey Rochester, Dr. William Gaertner, Dr. Charles R. Borzilleri, Dr. Norman L. Burnham, Press committee—Dr. Thomas H. McKee, chairman; Dr. Nelson H. Wilson, Dr. P. W. van Peyma, Dr. Irving M. Snow, and Dr. Julius Ullman.

The Forty-fourth Annual Meeting of the American Ophthalmological Society was held at New London, Conn., on Wednesday and Thursday, July 15th and 16th. The following was the programme of the meeting: Sympathetic Ophthalmia, by Dr. E. S. Thomson; Shrinkage of the Eyeball, with Observations on the Processes Underlying Atrophia Bulbi in General, by Dr. W. G. M. Byers; An Unusual Congenital Corneal Formation, by Dr. Burton K. Chance; Recurrent Traumatic Erosion of the Cornea, with report of a case due to Lachrymal Stricture, by Dr. R. J. Curdy; Diffuse Interstitial Keratitis in Acquired Syphilis, by Dr. John T. Carpenter; Thyreoid Extract in Keratitis, by Dr. McCluny Radeliffe; Extraction of Cataract with a Lance Shaped Keratone, by Dr. J. H. Claiborne; Treatment of Immature Cataract, by Major Henry Smith, of the Indian Medical Service, by invitation; An Akempt to Determine the Normal Range of Accommodation at Various Ages, Being a Revision of Donders's Experiments, by Dr. Alexander Duane; Clinical Importance of Relative Accommodation, by Dr. L. Howe; Some Practical Points Regarding the Use of Prism Glasses, by Dr. B. L. Millikin; Strabismus from the Operative Standpoint, by Dr. P. A. Callan; Interpretation and Teleology of Nystagmus, by Dr. Percy Fridenburg; Sudden Obstruction of the Central Artery of the Retina, by Dr. George E. de Schweinitz and Dr. Thomas B. Holloway; Embolism of a Macular Artery and Thrombosis of the Superior and Inferior Arteries in a Case of Embolic Softening of the Examination by Dr. C. M. Hosmer; A Case of Cyanosis Retinæ with Congenital Patent Foramen Ovale and Pulmonary Stenosis, by Dr. H. H. Tyson; Angioma of the Choroid, by Dr. A. Quackenboss, with Pathological Exami-The Forty-fourth Annual Meeting of the American Retinæ with Congenital Patent Foramen Ovale and Pulmonary Stenosis, by Dr. H. H. Tyson; Angioma of the Choroid, by Dr. A. Quackenboss, with Pathological Examination, by Dr. F. H. Verhoeff; A Simplification of De Grandmont's Operation for Ptosis, by Dr. S. Theobald; Report of a Case of Restoration of Sight after one month's Blindness from Glaucoma, by Dr. L. J. Minor; Case of Hæmorrhage from the Cornea in Glaucoma, by Dr. T. R. Pooley; Ocular Affections Associated with Disease of the Sinuses Contiguous to the Orbits, by Dr. S. D. Risley; Report of a Case of Bilateral Retrobulbar Neuritis after Ethmoiditis, by Dr. A. Knapp; Mixed Streptococcus and Pneumococcus Infection of the Orbit and Adjacent Sinuses, by Dr. C. S. Bull; Adenocarcinoma of the Orbit, by Dr. T. R. Pooley; Angioma of the Orbit with Invasion of the Globe along the Bull; Adenocarcinoma of the Orbit, by Dr. T. R. Pooley; Angioma of the Orbit with Invasion of the Globe along the Angioma of the Orbit with Invasion of the Globe along the Giliary Nerves, by Dr. Alexander Quackenboss, with Pathological Examination by Dr. F. H. Verhoeff; The Increasing Importance of Tuberculosis as a Cause of Ocular Discussion of Prenatal Origin, by Dr. G. S. Derby, by invitation; A. Case Presenting Unusual Conditions of Prenatal Origin, by Dr. Burton K. Chance; Sarcoma of the Choroid with Mounted Specimen, by Dr. S. D. Risley; Histological Investigation of a Case of Blepharoconjunctivitis caused by Diplobacillus of Morax-Axenfeld, by Dr. Brown Pusey; Macular Holes, by Dr. C. J. Kipp; Grill Like Keratitis, by Dr. C. J. Kipp; The next meeting will be held in New London. The following officers were elected: President, Dr. S. B. St. John, Hartford, Conn.; secretary, Dr. W. M. Sweet, Philadelphia.

Bith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

July 23, 1098.

- I. The Diagnostic and Therapeutical Use of Tuberculin, By LAWRASON BROWN.
- Permanent Stenosis of the Ductus Communis from Inflammatory Infiltration or Cicatricial Contraction of a Duodenal Ulcer, By Horace Packard.
- 3. Report of a Case of Melanosarcoma of the Orbit,
 By GUTHRIE McCONNELL and RUDOLPH BURMAN.
- 1. The Diagnostic and Therapeutical Use of Tuberculin.-Brown remarks that until recently it was thought unwise to give tuberculin to any patient who was not constantly under a doctor's immediate supervision, in other words, who was not in a sanatorium or hospital. Recent practical results, however, have shown that this is not necessary, and furthermore, they have shown that ambulant patients and patients at work may be given tuberculin in carefully graded doses, so that not only no harm may accrue, but that the patient may derive great benefit. This means that the former rule that the patient should remain in bed or at rest in a reclining position the day of and the day following injection does not need to be enforced. Brown thinks, however, that where possible, patients should take less exercise the day after the injection of tuberlin. Rise of temperature to 100° F. for more than two hours necessitates rest in bed during that day and the greater part of the next, or until the temperature becomes and stays normal, though practically when accompanied by very slight symptoms the temperature is almost invariably normal the second day even if the patient does not remain in bed. Many medicinal substances have been administered in conjunction with tuberculin, but seem of little value. Various toxines or secondary organisms have been suggested for use in connection with tuberculin but have yet to be thoroughly tested. The effects of repeated doses of tuberculin upon the animal economy have not been thoroughly worked out. The weight seems to be little affected. Changes in the blood have been noted by a number of observers, but the results are still conflicting. The untoward results are very interesting, particularly in regard to the mobilization of the tubercle bacillus. Baldwin was unable to find any evidence that tuberculin, even in large doses, produces this effect. The work of Liebmann, who found many tubercle bacilli in the blood following tuberculin injections, has never been verified, and Brown thinks, can be discredited on account of faulty technique. The sputum and the urine are affected somewhat, but usually only following reactions. An antipyretic effect is unquestionably present in many patients. The results obtained from tuberculin are exceedingly difficult to determine. It must not be forgotten that tuberculin is a powerful toxine, that if administered carelessly it may produce great and irreparable harm. The vast majority of men who have used tuberculin seem to be convinced that it has some beneficial effect. Our author is convinced of this although, he states, he has some difficulty in proving from the results which he has obtained that a markedly bencheral effect is present. He

thinks the present status of tuberculin may be expressed in a few words: Tuberculin when properly given does no harm, may produce no apparent immediate results, but may markedly benefit an individual patient who can follow at the same time the hygienic dietetic treatment while in a health resort or at home or at rest. It may even prove of benefit to those who must continue at work. Small doses and careful increases are most important, and by following these very closely some patients, even in advanced stages, reap great benefit. The immediate and ultimate results of treatment are often improved, few relapses occur, and more patients lose the tubercle bacilli in the sputum.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 25, 1908.

n Analysis of Four Hundred Cases of Epidemic Meningitis Treated with the Antimeningitis Serum, By SIMON FLEXNER and JAMES W. JOBLING. Injuries of Cranial Nerves from Fractures of the Skull,

By John Jenks Thomas.

Dental Education, By M. L. Rhein.

Nutritive and Neurotic Disturbances of the Hair,

By L. DUNCAN BULKLEY and HENRY H. JANEWAY. The Diagnosis of Pneumonia in Infancy,

The Ambulatory Treatment of Pneumonia in Infants, and Young Children, By Therson Werdell, Kilmer. The Smear Method as a Means of the Rapid Diagnosis.

By JAMES B. RUCKER. of Rabies. An Infrequent Type of Optic Nerve Atrophy,
By Howard F. Hansell.

Diffuse Interstitial Keratitis in Acquired Syphilis, By A. E. DAVIS.

to. Opacification of the Cornea Following Cataract,

By VARD H. HULEN.

II. The Surgical Treatment of Orbital Complications in

Diseases of the Nasal Accessory Sinuses,

By ARNOLD KNAPP.

12. Some Clinical Aspects of Lenticular Astigmatism,

By Edgar S. Thomson.

13. A Study of One Hundred Refraction Cases in Indians Fresh from the Plains, By CLARENCE PORTER JONES. 14. A Better Prognosis in Penetrating Wounds of the Eye-ball. By John A. Donovan

An Analysis of Four Hundred Cases of Epidemic Meningitis Treated with the Antimeningitis Serum.—Flexner and Jobling have tabulated 395 cases of epidemic meningitis, the total number of recoveries were 295, of deaths 98; twenty-five per cent. of recoveries and twenty-five per cent. of deaths. Tabulated according to the ages of the patients the following is the result obtained:

| Patients. | | Total number. | Re- covered. | Died. | Per cent. of deaths. |
|------------|---------------|------------------|-----------------|-------|-------------------------|
| Under 1 ye | ar | . 22 | , 1 | 1.1 | 50 |
| Retween I | and 2 years. | . IQ | 1.1 | 8 | 42.1 |
| | and 5 years. | | 5.2 | 16 | 23-5 |
| Between 5 | and to years. | . 79 | 70 | () | 11.4 |
| Between 10 | and 20 years. | . 105 | 80 | 24 | 23 8 |
| Over 20 ye | ears | 87 | 64 | -2.3 | 26.4 |
| Age not gi | vcn | . 13 | 7 | - h | 46.1 |

The youngest child which recovered was one month old. The latest case of the disease, in a child under one year of age, which was treated, was in its fourth month when the injections were begun; the child died. The highest mortality was among patients over twenty, which, they think, can be explained in part by the fact that a large number were treated by scattered physicians who had no experience with the serum. If this is not the reason, and adults past twenty are less subject to the action of the serum than younger persons, the fact will of course come out finally; but with one exception-Cincinnati-wherever a series of patients of these ages

has been treated by one observer the percentage of recoveries to deaths has been high-Johns Hopkins Hospital, Cleveland, Belfast (Ireland). The histories of 328 cases were sufficiently explicit to enable them to approximate the periods in which the first serum injection was made. They have arbitrarily chosen the three periods that follow in which to group the cases:

Period of injection Number of of serum. Number of patients. ust to third day...... 121 Fourth to seventh day... 166 Later than seventh day... 167

In spite of the uncertainties surrounding the period of onset of the symptoms which affect the accuracy of the calculation of the period, the beneficial influence of early injection is rendered sufficiently obvious by the table. The period embraced in the last group is highly irrigular, since not a few patients came under treatment when they were in a semichronic or chronic state after many weeks of illness. On the whole, therefore, the outlook even for the latter class of cases is not wholly discouraging, and they are of the opinion that so long as the diplococcus is still present in the meningeal exudate and the mechanical damage to the anatomical structure is not irreparable, the employment of the serum holds out hope of considerable benefit. Closely connected with the rapidity with which the cerebrospinal exudate loses pus cells and returns to a limpid condition is the state of the general leucocytes of the blood. If the inflammatory emigration into the meninges is arrested, then the number of circulating leucocytes should tend rapidly to return to the normal. The facts at hand, based on many counts of the circulating leucocytes before the injections of serum were begun, and afterward at regular intervals, show, as was to be expected, a fall, often very rapid and even critical, in the number of leucocytes in the general blood stream with which the disappearance of the diplococci and the clearing of the spinal exudate are correlated. The indications given by the first series of serum treated patients were to the effect that in the great majority of instances recovery from the disease would be complete. The facts brought out by the far larger series of cases on which this article is based confirm the earlier view which the authors expressed. The number of complications which arose in them was small, and the only persistent defect noted was This lamentable condition occurred in deafness. a few instances only, and it was more often than not noted early in the disease before the serum injections were begun.

4. Nutritive and Neurotic Disturbances of the Hair.-Bulkley and Janeway speak of hirsuties, alopecia, canities, fragilitas cranium, trichorrhexis nodosa, alopecia aveata, and monilithrix. They find that the hair is an active, live portion of the economy, subject to various alterations, dependent on its nutrition and innervation. The well known changes which occur in the hairy coats of animals in ill health, and which have long been recognized as a valuable indication in regard to constitutional treatment, would seem to show that the same might also occur in man. They have found that a certain activity of the hair follicles belongs to a particular period of life, puberty, and a waning of their powers seems to be a natural sign of advancing age. We

have seen that in certain conditions of nutrition and innervation, as after fevers, etc., the hair follicles in some way take on different action, and various disturbances of the hair are observed, and that the effect of profound nervous or mental strain and shock can be evidenced in the hair. Turning to clinical experience, they find that among 15,240 miscellaneous dermatological cases in private practice, a total of 1,129, or over seven per cent., belonged to the group of affections of the hair now under consideration. An analysis of such notes as were kept of them presented many striking features illustrating the points considered in regard to nutritive and neurotic disturbances of the hair. There is great need that the underlying principles be put more in practice; for it is the rarest occurrence to find that patients with the diseases which they have considered have ever previously been interrogated in regard to the matters which have been mentioned, much less that any serious and prolonged attempt has ever been made to rectify the very gross errors of life which have often been discovered. In almost every instance, if a physician has been consulted at all, there has been only some local application given, while in the large majority of cases the trouble has been left to the hairdresser. It is true that the books state in a general way that attention should be directed to the state of the general health, etc., but, as stated, practically everything but the local condition is commonly ignored when these patients apply to the physician for aid.

7. The Smear Method as a Means of the Rapid Diagnosis of Rabies.—Rucker, from his observation of thirteen cases, comes to the conclusion that the smear method is preferable to all other methods because it is much simpler than any other, on ac count of the extreme facility with which the smears may be made and stained, and it is much shorter than any other, inasmuch as the least possible time in which even a poor section could be made and stained is three hours, whereas the time required by the smear method is from fifteen minutes to three hours. In the smear method the Negri bodies appear very distinctly, and their minute structure is brought out very clearly. The smear method is absolutely re-

Diffuse Interstitial Keratitis in Acquired Syphilis.—Davis remarks that diffuse interstitial keratitis may occur as a result of acquired syphilis. It usually occurs as a late secondary sign of the disease or during relapses in the tertiary stage of the general disease. Stephenson gives the average time of development of interstitial keratitis as 10.8 years after the primary sore. Loewinson has reported one case as early as three weeks after the appearance of a primary sore, while Ellett reports a case appearing as late as twenty-three years after the infection. It almost invariably affects but one eye, although there are a few exceptions reported where both eyes were affected. It runs a quicker and lighter course, as a rule, than the cases due to inherited syphilis, and is rarely harmful to the sight. It should be remembered, however, that Griffith has reported one case in which the sight was entirely lost. True salmon patches occur but seldom in these cases. It is difficult to make a clinical diagnost between the sphilitic and the tuberculous

forms of the disease, and even a distinctive pathological diagnosis is not always conclusive. The prognosis is favorable, though it should be somewhat guarded from the fact that sight has been lost entirely in one case.

MEDICAL RECORD.

July 25, 1008.

- I. A Brief Account of the History of Medicine in the
- Province of Quebec, from 1535 to 1838,
 By Herbert S. Birkett.
 The Pathogenesis of Pernicious Malaria,
 By WILLIAM H. DEADERICK.
 An Improved Treatment of Gonorrheal Arthritis (So Improved Treatment of Community, Called Gonorrhoal Rheumatism),

 By Edward C, Titus.

 Propagation ELLIS.
- Unusual Cardiac Murmurs, By RICHARD ELLIS.
 Tetanus; with a Report of a Case Treated by Intraspinal Injections of Magnesium Sulphate,
 By W. H. Powers.

2. The Pathogenesis of Pernicious Malaria.-Deaderick remarks that quality of the soil, in the sense so aptly employed by Homem, as a factor in the pathogenesis of pernicious malaria, has probably not received the attention it deserves. This influence in many instances doubtless not only induces the attack but determines its type. Organs or systems enfeebled by antecedent ailments are apt to play the title rôle in the pernicious tragedy. Thus algid and choleraic attacks may be associated with a history of intestinal catarrh; the comatose and delirious cases with a history of abuse of alcohol; the convulsive with epilepsy, etc. It is not improbable that some cases of dysenteric, cardialgic, syncopal, tetanic, cataleptic, paralytic, pneumonic, pleuritic, gastralgic, and other forms described by the older writers may be similarly explained. Malarial subjects, who are much exposed to the heat of the sun, are liable to be stricken with pernicious fever, especially of the cerebral type. This danger is enhanced if to the solar heat are added fatigue, deficient or improper food, or other hardships. Certain psychic states have causative significance. In addition to these four principal factors, congestion of viscera and parasitic obstruction of the hepatic capillaries have been regarded as important. It is probable that they have little influence. In the comatose variety any of the four chief agents may take part; idiosyncrasy and external influences may unite with any of the other factors; an extraordinary number of parasites in the general circulation without accumulation in the brain is productive of coma probably because of the toxine. Ewing says that the majority of cases of comatose malaria coming to autopsy do not show a massing of parasites in the brain. He attributes these cases to general toxæmia. However a study of the autopsy records of Marchiafava and Bignami shows that in a great majority of their fatal comatose cases the parasites were markedly localized in the brain. Davidson and Ruge believe that almost always the cerebral capillaries are found filled with parasites in those who have died with coma. Other pernicious cerebral forms are usually associated with parasitic localizations. The algid variety, while possibly sometimes dependent on toxæmia, is usually due to a massing of the parasites in the gastrointestinal mucosa. This is explained by Davidson as follows: "Experiments show that the alimentary tract is in

closer connection with the cardioinhibitory centre than other parts of the body, and that irritation of this tract, if sufficiently powerful, will produce cardiac inhibition, with pallor of the surface and accumulation of the blood in the abdominal vessels. That the intestinal canal is the centre of mischief in this form of pernicious attack will appear all the more probable if we observe the character of the disturbances so frequently associated with the algid condition—the cardialgic pain, the choleraic vomiting and purging, and the dysenteric discharges." Other forms of pernicious malaria are probably due to localization or to complications.

Tetanus; with a Report of a Case Treated by Intraspinal Injections of Magnesium Sulphate.—Powers describes the method of treatment: The patient was chloroformed, turned on the side, with the body flexed. A small area over the lumbar vertebræ was sterilized, the line at the upper margin of innominate bones ascertained, and a little to one side of the spinous process a small skin incision was made. An ordinary solid metal 10 c.c. syringe was filled with a 25 per cent. solution of sterilized magnesium sulphate; a four inch needle was used. After the needle had been inserted approximately to the proper place the syringe was detached. As no spinal fluid appeared, it required a little further manipulation of the needle before the cavity was penetrated. About 2 c.c. of spinal fluid was allowed to flow, then the syringe was attached and 2 c.c. of magnesium solution was injected slowly. A prescription was written for a combination of chloral, bromide, and morphine, also for a saturated solution of magnesium sulphate. Owing to the patient being cared for by negroes, no careful account of symptoms can be given, and the medicine was also given sporadically. On the third day 10 c.c. of tetanus antitoxine was injected deep into the thigh muscles along the supposed course of the bullet. At this time the patient was considerably worse as regards pulse and respiration, although the convulsions were not so severe as when first seen. The next day another spinal injection of magnesium sulphate was given in slightly larger dose, and three hours after this the patient was absolutely relaxed and complained of a "splitting" headache. This injection had a marked effect as late as forty-eight hours. Six days after coming to town the man was removed to the hospital as a charity patient. At this time he was absolutely rigid, but the general conditions had improved, and the convulsions were not so frequent or severe. From this on his condition gradually improved under the use of chloral and bromide, and salts by mouth, until sixteen days after his arrival in town, when he was able to walk about

BRITISH MEDICAL JOURNAL

July 11, 1008

The Ætiology of Pulmonary Tuberculosis (Cavendish Lecture),
 Remarks on Congenital Stenosis of the Pylorus in the Adult.
 Congenital Narrowness of the Pyloric Orifice a Cause of Chronic Gastric Disease in the Adult. Illustrated by Twelve Additional Cases,

By A. E. MAYLARD.

Gastroenterostomy for Nonmalignant Disease,
By C. M. MOULLIN.

5. Tetany in the Adult, By J. A. GIBB

 Mucous Colitis and its Relationship to Appendicitis and Pericolitis, with Remarks upon its Treatment by Irrigation (Plombière's Bath), By A. MANNILE.

r. Pulmonary Tuberculosis .- Whitla, in his Cavendish lecture, discusses the ætiology of pulmonary tuberculosis, and gives the details and results of experiments which go to show that the intestinal route plays a far more important rôle in the production of human pulmonary tuberculosis than has been hitherto recognized. The lungs of guinea pigs, fed on an emulsion of India ink for four days, are engorged with carbon; the same thing happens when the emulsion is injected into the peritoneal cavity. The tubercle bacillus passes through the intestinal mucosa like the fine particles of India ink, without causing any lesion or leaving any local evidence of its point of entrance. Though we still are hardly justified in assuming that pulmonary tuberculosis never occurs from the inhalation of dried sputum dust or from the breathing of the spray ejected at the moment of coughing, it appears to be conclusively proved that the alimentary tract is a frequent portal of entry for the tubercle bacillus; that this event is especially frequent in children, and that the milk of tuberculous cows is the common source in these cases. Probably at no distant date the contention of Calmette will be accepted that in the immense majority of cases pulmonary tubercu-losis is not contracted by inhalation, but, as taught by von Behring, the germs enter through the intestinal tract. Future research will have to explain how in China, where practically no bovine milk is used, tuberculosis is everywhere prevalent among

2, 3. Congenital Pyloric Stenosis in the Adult. -Russell reports three cases of congenital simple stenosis of the pylorus, occurring in individuals aged thirty-four, forty-two, and fifty-one years, respectively. There is usually a long history of stomach trouble, and the patient has learned to be careful of the character and quantity and intervals between the meals. There may be a history of supposed "bilious attacks" dating back to childhood. The symptoms are those of stomach dilatation or of gastric dyspepsia, vomiting only occurring in the more severe attacks. The attacks tend to become intensified as they are repeated, and something eventually happens, often not till life is fairly advanced, which brings out the pyloric difficulty and leads to all the symptoms of pronounced pyloric obstruction. The diagnosis in the case of simple stenosis is determined by the existence of pyloric difficulty, the character and duration of the history, the absence of permanent pyloric thickening, the presence of free hydrochloric acid in the stomach contents, the exclusion of ulcer, of malignancy at the pylorus, and of a history that would fit in with cicatrix from previous ulceration. When there is permanent thickening, the benign causes, ulcer excluded, are congenital hypertrophic stenosis, and cicatrix from healed ulcer. Once the possibility of congenital stenosis occurring in the adult enters the clinical field of vision, its distinctive diagnosis is not so very difficult. The treatment may be summed up as follows: 1. Control excessive secretions. 2. Reduce pyloric irritability. 3. Increase the muscular activity of the stomach wall.—Maylard reports twelve cases of adult congenital pyloric stenosis, and

reaches the following conclusions: 1. That there exists an abnormal condition of the pyloric aperture, of probably congenital origin, which consists in an undue narrowing of the orifice, varying anything between two and ten or twelve millimetres. 2. That the condition is more frequently met with in women than in men, and that the age at which the symptoms first appear depends upon the narrowness of the aperture and the general physical or constitutional condition of the patient. 3. That the narrowing leads to a more or less chronic condition of indigestion manifested in various forms, and often mistaken for chronic ulceration or chronic gastric catarrh; that in the early stages relief is afforded by careful and strict attention to diet, but that any attempt to return to normal feeding causes a recrudescence of indigestion. The attacks of gastric discomfort are at first separated by considerable intervals, but these lessen in length as time goes on. 4. That when the patient is advanced in life and shows marked general debility operation will prove of doubtful value. 5. That if regulation of the diet fails to afford relief, pyloroplasty or Finney's operation-preferably the former-should be practised.

Tetany.—Gibb reports two cases of tetany in adults, and states that there can be no doubt that the condition is due to some toxine absorbed from the alimentary canal. Absorption is suggested by the fact that tetany occurs in association with gastric dilatation. Tetany in children occurs in association with rickets, of which disease gastric catarrh is a constant feature. In children the nervous system is undeveloped, and thus there is lack of cerebral control. The posttetany irritability of children is marked, and only very slight causes are required to bring on a fresh attack.

6. Mucous Colitis .- Mantle embraces in the term "mucous colitis" that morbid condition of the mucous membrane of the colon in which the predominating feature is the passing of mucus in the stools. Constipation is a prominent feature in the great majority of the cases. The importance of early treatment cannot be overestimated. antiseptic treatment by the mouth (sale), aphthol, etc.), with strict dieting, may cure a mile case, yet better and more lasting results can be obtained if the bowel is washed out just as is done in the case of the stomach when a similar condition of chronic catarrh and dilatation exists. Surgically the cæcum has been opened, and the motions allowed to pass through the artificial anus for some weeks, so as to give the colon rest and to permit of its being washed out with antiseptic solutions. The appendix has been made use of in a similar way, by fixing it to the abdomen, opening its distal end and inserting a rubber catheter through which irrigation takes place. Treatment by irrigation of the colon, as carried out at Plombières and Harrowgate, gives excellent results. It consists of irrigation of the ounces of alkaline sulphur water at a low pressure are used. After the interval douche follows a warm ing upon the wall of the abdomen from a large nozthe colon. Attention, on the patient's part, to modtle to the cold extremities, and avoidance of exposure to undue cold will give the greatest comfort, and by attracting blood from the splanchnic area to the periphery relieve the affected bowel. Care in diet, avoiding all articles of food which may irritate the mucous membrane, must be strictly en-

LANCET

July 11, 1908.

Inborn Errors of Metabolism (Croonian Lectures, II), The Necessity for the Removal of the Appendix after Perityphhitic Abscess, By W. H. BATTLE.

A Case of Sarcomatosis of Lymphatic Glands, By W. K. HUNTER

The Premonitory Signs of Arteriosclerosis, By A. S. Gubb.

A Consideration of the State of the Autonomic Nervous System in Acute Surgical Conditions (Con-

vous System in Acute Surgical Conditions (Concluded),
An Original Method of Facilitating Intralaryngeal Operations, together with Four Cases of Innocent Growths of the Vocal Cord Removed,
By C. Horsford.
The Infant in the School Medical Examination,

By A. D. EDWARDS. A Visit to Professor Wertheim's Clinique in Vienna, By A. H. N. Lewers.

Errors in Metabolism.—Garrod, in the second of his Croonian lectures, takes up the subject of alkaptonuria. When freshly passed the urine of an alkaptonuric is usually normal in tint, but it quickly begins to darken in contact with the air, and finally becomes actually black. Alkalinity of reaction greatly hastens the change. On heating the urine with Fehling's solution a deep brown color develops and copious reduction occurs. The most striking reaction is observed when a dilute solution of ferric chloride is allowed to fall drop by drop into the urine. The fall of each drop is followed by the appearance of a deep blue color which lasts but for a moment. Alkaptonuria is a very rare phenomenon. In the great majority of cases it is present from birth, and persists throughout life giving rise to no symptoms save occasional dysuria with undue frequency of micturition. A few alkaptonurics are attacked in later life with the condition known as ochronosis, the essential feature of which is the staining of the cartilaginous structures of an inky blackness. Surface or subsurface pigmentation is sometimes present and renders possible the recognition of the condition in living subjects. The blackened aural cartilages may show through the skin, and black flecks appear upon the conjunctivæ, the skin of the face, and the knuckles.

4. Arteriosclerosis.—Gubb discusses the premonitory signs of arteriosclerosis, and states that the tendency to the disease is markedly influenced by heredity, although it can be acquired by certain habits of life. Many of the subjects are the offspring of gouty or arthritic parents, and in these the premonitory signs of the degeneration may be observed quite early in life in the form of attacks of nose bleed, migraine, premature baldness, etc. There is a slackening of the intellectual powers, and the subject is easily fatigued. There is a peculiar sensitiveness to alcohol and tobacco, even in reduced quantities. Irritability of temper is fairly constant. More or less persistent headache is a common early feature. It is apt to be caused or intensified by intellectual effort, by alcohol, or by excitement. Sensory disturbances, in the form of

neuralgia or giddiness, are fairly common. The same is true of disturbances of sleep, but true insomnia is rare. Mental depression is always present to some degree. Exaggerated arterial tension, with a small, hard, thready, but regular pulse, is also a premonitory sign of arteriosclerosis-indeed some authorities hold that actual changes in the arterial walls are preceded by prolonged exposure to the illeffects of persistent high pressure, such hypertension being due to spasmodic contraction of the arterioles probably dependent on toxic irritation of the vasomotor system.

5. Shock and Peritonism.-Walton summarises the treatment of shock and peritonism, as follows: In shock, which is due to exhaustion of the nervous centres, no form of stimulant should be given before or during an operation. When signs of shock begin to develop, as shown by a fall in pressure, hypodermic injections of ergot should be given. If the fall in blood pressure continues a vein should be opened and the patient infused; for this purpose one drachm of adrenalin to one pint of saline solution should be used. If the operation is an abdominal one, saline solution may be poured into the abdominal cavity. During operation cocaine should be injected into any large herve before it is divided, and exposure or handling of organs and viscera should be avoided as much as possible. When the patient is returned to bed a quarter of a grain of morphine should be given, and the foot of the bed raised about two feet. Ergot should again be given subcutaneously, and saline solution and suprarenal extract injected continuously into the rectum. In peritonism, or acute paralysis of the intestines, due to some toxic condition present within the peritonæum, the intestines should be drained as fully as possible during the course of the operation undertaken for the relief of the local condition. In all other conditions no operation is called for, and since the state of the intestines depends upon the exhaustion of the nerve centres, any form of stimulation is only likely to do harm. Immediately after operation, injection of 0.01 grain of eserine salicylate should be given, and continued every four hours until six doses are given. If no movement of the bowels occurs next day a turpentine enema may be given. In conclusion then, it may be stated that the effects of any severe operation upon the autonomic nervous system consists of an exhaustion of its centres, both central and local, and that any treatment must aim at procuring rest of these centres. Since in man exhaustion always occurs first in the nervous system treatment of the symptoms should aim at stimulating the local organs so that they may act alone until such time as the centres are again able to undertake the control.

LA PRESSE MEDICALE

Colloidal Silver in the Infectious Diseases,

By A. NETTER Numerical Atrophy Resulting from Childhood, Burns during By A. Daniel. Ochronosis and Alkaptonuria, By R. ROMME.

Colloidal Silver in the Infectious Diseases. -Netter urges the useful properties of collargol and asserts that the bactericide properties of the colloidal silver produced chemically and known as collargol are not better than those of the compound produced by Bredig's electric method and known as electrargol or ultrargol. The objections which have been raised against the latter are, he states, without foundation.

2. Numerical Atrophy from Burns during Childhood.-Daniel records the case of a boy burned at the age of three years on the left side of the face. At the age of twenty-two he had facial hemiatrophy from arrest of development, atrophy of the bony structure and of the muscles of the face, diminution in the size of the left upper lid and of the eyeball, with contraction of the pupil, atrophy of the teeth, rarefaction of the hair, and reduction in the size of the pinna of the left ear. After a critical historical study, in which he brings out the fact that in these cases the atrophy is diffuse and generalized, not partial, circumscribed, nor selective of a group of muscles, the writer passes on to consider the pathogeny of the condition and the several hypotheses that have been advanced. He considers the hypothesis advanced by Klippel to be the most plausible and the most scientific, viz., that the arrests of development caused by burns belong to the general class known as numerical atrophies, a term introduced in 1893 to denote an atrophy in which there is not only a diminution in the volume of the part, but also an actual decrease in the number of its elements, some of them having been destroyed. He then presents the results of his experimental studies, in which he shows that the two histological processes present in experimental numerical atrophy and the numerical atrophy of human beings are identical.

June 24, 1908.

I. Epidemiology and Bacteriology in the Scientific Strug-gle against Typhoid Fever, By L. Tanon.
2. Some Faults Ascribed to Anæsthesia with Ethyl Chloride, By L. Camus.
3. A New Theory of Surgical Shock, By J. P. Langlois.

2. Anæsthesia with Ethyl Chloride.—Camus concludes that for an anæsthesia of brief duration the use of ethyl chloride is the method of choice, but that this method cannot avoid minor postanæsthetic accidents in every case any more than any other, because these are sometimes attributable to the temperament of the patient, sometimes to the conditions of the operation. But in spite of the minor troubles which may present themselves on awakening, the patients do not maintain a bad recollection of ethyl chloride, and those who have had to submit to repeated operations prefer this method of anæs-

3. A New Theory of Surgical Shock .- Langlois discusses the theory ascribed by him to Henderson, of the Yale Medical School, that surgical shock is provoked by a diminution in the proportion of carbonic acid in the blood, and that the prophylaxis of shock consists essentially of preventing an extensive loss of this gas from the blood.

LA SEMAINE MEDICALE.

1. Modifications of the Blood Serum by Heat, By Professor Hans Sachs.
The Treatment of the Gibbosity of Pott's Disease,
By Professor E. Estor.

2. Treatment of the Gibbosity of Pott's Disease.—Estor recommends the apparatus designed for this purpose by Bonnet.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 15, 1008.

The Dangers of Infectious Diseases,

By Ferdinand Hüppe.
Concerning Duodenal Ileus After Operations,

By L

Contribution to the Treatment of Ileus, By W. BRAUN.
The Nature of the Leuchæmic Pathological Process and the Therapeutic Management of the Same,

By E. GRAWITZ.

Concerning the Manual Artificial Respiration of Adults,
By George Meyer and A. Löwe.
Fornet's Precipitate Reaction in Syphilis and Paralysis,
By F. Plaur and W. Heuck.
The Position of the Superior Horizontal Part of the
Duodenum as Determined by the X Rays and
Anatomically,
By Gottwald Schwarz.

Bromural as a Restrictor of Perspiration,

By TH. RUNCK. An Apparatus for Testing the Function and Training By Max HERZ

Carbonic Acid Snow in the Treatment of Skin Diseases.

The Examination of the Fundus of the Eye in Transmitted Light by Means of Transillumination of the Orbits from the Region of the Nasopharynx,

By CARL HERTZELL.

12. Concerning the Present Position of Endonasal Surgery, By FINDER.

4. Nature of the Leuchæmic Pathological Process and its Treatment.—Grawitz has come to the following conclusions as the result of his observations: I, The chances of recovery are more favorable when the patients can be kept in bed, carefully nourished, and given arsenic at the same time, than when they are treated ambulatorily by means of the x rays. The technique of the exposures plays undoubtedly an important part in the efficacy of the x rays. The length of the exposures and their frequency are not less important. A case is cited in which a woman with mixed celled leuchæmia was treated for a year with short exposures without effect, and then cured in a few weeks in the hospital. 2, The duration of the disease is of great importance, for even though an improvement may be brought about in leuchæmia which has lasted for years by a diminution of the leucocytes, it is evident that in such cases the pathological deviation of the cell formation in the blood making organs has become so firmly rooted that a return of the tissues to their normal function can no longer be looked for. In these cases one can observe the working of the leucolysis by the x rays, but not the plastic regulation. It is, therefore, imperative that the diagnosis of this disease should be made at as early a period as possible. It should not happen to-day that swellings of the spleen and of the lymphatic glands should be observed and treated for a year without examination of the blood, and so the patients lose their frequently good chance of recovery. 3, The origin of the disease is not of less importance, and the prognosis is unfavorable in acute cases associated with septic symptoms, as well as in those associated with chronic inflammation of the lymphatic apparatus, which indicates a persistent and nonremovable irritation of the blood making organs, so that a leucolysis, but not a true return to normal function, can be obtained. 4, The age of the patients plays a part in so far that, while improvement in the general condition may be obtained in elderly people, such improvement does not last, and old are can to have a similar effect to long standings in sanger people in making a return of the tissue to its normal function impossible. 5, The condition of the blood is not to be excluded in considering the prognosis, for the lymphoid type may recover, though formerly this was doubted. A case of lymphoid condition of the blood, with externally demonstrable enlargement of the spleen without glandular tumors has no worse a chance than one with a mixed cell condition of the blood. But if the peripheral lymphatic glands are greatly swollen the prognosis appears to be bad.

5. Artificial Respiration of Adults.-Meyer and Löwy give an excellent anatomical description of the modus operandi of Sylvester's method of

artificial respiration.

10. Carbonic Acid Snow in the Treatment of Skin Diseases. - Pusey considers freezing the skin for from ten to thirty seconds with carbon dioxide to be an efficient method of treatment for pigmented and vascular nævi, warts, and senile keratoses. In superficial epitheliomatas he has had brilliant results; in deep tumors he has not employed the method, but thinks it might be of use in many. He failed to get benefit in lupus erythematodes or lupus vulgaris.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 16, 1008.

I. Concerning the Physiological Valuation of Remedies, By GOTTLIEB.

The Dermatotherapeutic Use of Static Electricity According to Suchier, By Jesioner.

The Effect of Stasis Hyperæmia in Animal Experi-By FRANGENHEIM.

Cytological Conditions in the Conjunctival Reaction in Tuberculin, Ophthalmocytodiagnosis,

By DIETSCHY. Concerning Bang's Method of Titration of Sugar,

By Dilg. of Induced The Question of Hebeosteotomy and Premature Labor in Private Houses,
Concerning an Atypical Meningococcus,
Ruptures of the Rectum,
By MULLER.
By KONRICH.
By BURKHARDT.

9. A New Application of the X Rays,
10. Contribution to the Treatment of Syphilis, By Dessauer,
11. The Checking of Acute Inflammation of the Middle

By OBERMÜLLER 12. Concerning a Case of Cure of a Perforated Ulcer of the Stomach by Simple Opening of an Intraperitoneal Abscess,

13. Epidemic of Cerebrospinal Meningitis in Pfalz in the

Spring of 1007 (concluded). By H 14. François Rabelais on the Duties of the Physician.

Effect of Stasis Hyperæmia in Animal Experiments.—Frangenheim states, as the result of his experiments that the stasis hyperæmia produced had little or no bactericidal effect, that infections were not prevented by previous or immediate stasis, and that all cases of suppuration in the bone medulla and the majority of the cases of suppurations in the joints were unfavorably influenced by the stasis. A characteristic property of the stasis hyperæmia which is produced by stasis and by suction is the increased formation of pus and the leaving behind of infiltrates about the purulent foci.

4. Cytological Conditions in the Conjunctival Reaction to Tuberculin.—Dietschy asserts to have demonstrated that the microscopical examination of the secretion from the eye during the conjunctival reaction to tuberculin presents a form of leucocytes the fluctuation of which in the course of the reaction are typical and agree with the conditions present in other acute inflammations. No value can be placed on the occasional presence of polynuclear leucocytes,

because such are to be found sometimes in the conjunctival secretion of eyes which have not been treated in this manner. Tuberculin seems to call forth no chemotatic leucocytosis. The conjunctival secretion may present these changes in many persons with tuberculosis even when no reaction can be detected macroscopically, hence this means the ophthalmocytodiagnosis is a means whereby the value of the ordinary conjunctival reaction is enhanced

5. Bang's Method of Titration of Sugar.-Dilg declares that for solutions which contain no other reducible substance except sugar Bang's method is preeminently satisfactory. Also in the examination of urine it appears, in spite of its limitations, to be a desirable advance for the practitioner.

6. Hebeosteotomy and Premature Labor in Private Houses .- Müller considers hebeosteotomy, section of the pubic bone, to be an operation which should be performed in private houses only by experienced surgeons, and that in the majority of cases induced premature labor is safer for both the mother and the child.

- 8. Ruptures of the Rectum.—Burkhardt reports a case of spontaneous rupture of the rectum in a young man, seventeen years of age. Laparotomy was performed, the laceration sewed up, and the patient recovered. The cause of the rupture was obscure. It was a case of rupture during defæcation of a healthy rectum in a healthy young
- 12. Cure of a Perforated Ulcer of the Stomach by Opening an Intraperitoneal Abscess.-Weimann reports the case of a man, fifty-three years of age, who had suffered for eleven years from ulcer of the stomach, and finally was attacked with an abscess in the epigastric region. When opened this abscess was found to communicate with the stomach through a perforated ulcer, which healed rapidly after the operation.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES. July, 1908.

- Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy, By H. KOPLIK. The Therapeutics of Selfrepair, By S. J. MELTZER. By H. SEWALL. By G. W. Norris. Safeguards of the Heart Beats,
- Cardiac Arrhythmia Peculiarities of the Symptomatology of Rheumatism in
- Children,
 Statistics of Seventy Cases of Gastroscopy,
 By C. Jackson.
 Myelogenous Leuchæmia and its Treatment with X
 By H. HARRIS. Pyelonephritis Complicating the Puerperium,

Anatomy and Pathology of the Carotid Gland,
By L. P. Gomez.

- 10. Congenital Unilateral Absence of the Urogenital System and its Relation to the Development of the Wolffian and Müllerian Ducts, By H. E. Radasch.
- 1. Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy. -Koplik considers, under the head of treatment, feeding, mechanical means of therapy, drugs, and operative measures. Feeding is the most important element in treatment. Breast feeding is ideal and should be given at long intervals with short nursings. If this is not available one of the artificial foods containing a minimum of fat may be selected. Small amounts must be given at proper intervals.

Mechanical therapy will include hot poultices, dry heat, stomach washing, and enteroclysis. Stomach washing is not advised; enemas of saline solution may be given several times daily. As to drugs, opiates in some form are advised by many writers, but are not favored by the writer, neither is sodium citrate, nor sodium and pancreatin. Operations, if performed at all, require great technical skill, great dexterity, and great rapidity. The mortality in any event is large. If posterior gastroenterostomy is performed, the exclusion of a portion of the intestinal tract which is necessitated is likely to be harm-Anæmia and rhachitis may be consequences, and respiratory apnœa and indigestion from narrowing of the artificial opening in the stomach have been reported.

- 2. The Therapeutics of Selfrepair.-Meltzer thinks the conception justifiable that the living organism is comparable to a complex human made machine. The comparison is not quite just in that our knowledge of the living organism is still very imperfect, hence our therapeutics is still defective. Still, it is marvelous that the results of ignorant meddling with this sensitive organism have been so lacking in seriousness. It is now known for a fact that the living organism has automatic arrangements for selfrepair. Of the rational and empirical methods of treatment the former leads to inactivity; the latter, while active, is unreliable as to results. Immunity has now become a third method of treatment; it embraces the study and use of antitoxines, and is a field full of promise. The signs of inflammation are now considered factors in selfrepair; witness the method of venous hyperæmia. Artificial leucocytosis is another method of utilizing the body forces to combat disease. The great object in therapeutics to-day is to utilize the methods which Nature uses, improving upon them if possible. Pathological therapeutics promises to be the most efficient method of studying therapy.
- 4. Cardiac Arrhythmia.—Norris states that to explain satisfactorily and study the different forms of arrhythmia we must classify and group them according to the five fundamental properties of the heart muscle. The myogenic theory of cardiac activity is practically necessitated as a working basis. The first type of pulse irregularity in this study is juvenile arrhythmia, affecting the diastolic period, the pulse slowing down after fever, especially between the ages of eight and fifteen. The second is extrasystole, with an intermittent pulse from irritation of the ventricle, from heart block, or from diminished excitability. The third is perpetual arrhythmia, in which no regular rhythm can be made out for weeks or months. The fourth is heart block, which are due to depression of conductivity, with the dropping of the ventricular beat or complete dissociation of the auriculoventricular rhythm. The fifth form is that of depression of contractility, the so called pulsus alterans. Arrhythmia of muscular origin is more serious than that which is due to nervous causes. The time and cause of it will greatly modify or influence the opinion as to its seriousness.
- 5. Peculiarities of the Symptomatology of Rheumatism in Children.—Dunn divides the cases into the following types: 1. The mild arthritic, with slight, brief fever, and mild brief joint symp-

toms. 2. The severe arthritic in older children, with severe polyarthritis. 3. The latent, with fever at the onset, and with subsequent mild or severe cardiac or arthritic symptoms. 4. Mild primary endocarditis, with fever, dyspnœa, palpitation, præcordial pain, and slight joint symptoms. 5. Severe primary endocarditis, with fever and cardiac incompetency. If recovery takes place it is very gradual. 6. Mild pericarditis, with fever and præcordial pain. course is prolonged, and is accompanied with endocardial murmurs. 7. Severe pericarditis, with high, obstinate fever, præcordial pain, and effusion. Cardiac insufficiency with severe symptoms will be followed by slow recovery or by death from cardiac weakness

7. Myelogenous Leuchæmia and its Treatment with X Rays .- Harris thinks this is a malignant neoplastic disease. Its onset is insidious, and it is usually fatal. It is sometimes favorably influenced by intercurrent disease, and it is usually influenced favorably by x rays. In favor of its malignancy is the fact that in many of the organs are masses of cells identical with those of bone marrow, which are foreign to the organs involved, and are apparently metastases. In the author's series of cases the average number of leucocytes was 312,000; that of the red cells was 2,860,000. The average hæmaglobin content was fifty per cent. Under the influence of the x rays the number of the leucocytes was reduced. The diagnosis in the author's cases was easy, as there was a typical blood picture and the spleen was enlarged. Arsenic was administered as a tonic, and the x rays were used three times weekly for three months, subsequently every five days for two months. As the blood picture improved, and the condition of the patient became more favorable, the treatment was given at still longer intervals.

AMERICAN JOURNAL OF SURGERY. July, 1908.

The Removal of the Faucial Tonsils as a Means of Re-By ROBERT C. lieving Deafness, MYLES.

Intracranial Lesions of Otitic Origin, By JOHN J. KYLE. Plastic Radiography (Radiographs in Relief), By GEORGE M. MACKEE.

Prostatic Hypertrophy in the Aged,

By CHARLES E. BOWERS. Operative Indications in the Dislocation of the Hu-By CARLETON P. FLINT. merus with Fracture, By Carleton P. Flint. Report of Two Cases of Recurrent Dislocation of

the Shoulder, Successfully Operated on; with Description of the Technique, By Fred H. Albee. Scription of the Technique, By FRED II. ALBER,
Nitrous Oxide with Oxygen as an Anæsthetic Agent;
with Notes on the Value of Warming the Vapor of
Ether and Chloroform, By JAMES T. GWATHMEY,
Thrombosis of the Lateral Sinus and Internal Jugular
Vein Following Suppurative Mastoiditis; Caused by

Acute Purulent Otitis Media; Operation, Recovery, A Case Report, By John L. Adams.

A Case Report,

A Case Report,

Report of a Vaginal Cæsarean Section in a Case of

By John Osborn Politik

7. Nitrous Oxide with Oxygen as an Anæsthetic Agent. Gwathmey gives the following as the ideal routine administration: In addition to the monal preparation the patient's nerves should be controlled by previous medication in either of the two following ways: (a) A suitable dose of morphur according to the age and condition of the patient, or (b) an enema of seven ounces of saline solution and one of whiskey one half hour before the operation. The patient will then come to the table in a suitable frame of mind. The narcosis should be commenced with nitrous oxide and oxygen or nitrous oxide and air, and continued until full, surgical anæsthesia is reached with this agent, and then the ether chamber turned on gradually and slowly. In this way there will be no swallowing in the first five minutes. The method of administration should now be changed to the closed inhaler, and the anæsthesia deepened by rebreathing. This should be continued until the whole system has been thoroughly stimulated by the ether. A change should now be made to warm chloroform, given either by the vapor method or drop by drop. This change to chloroform should be made when the patient is only lightly under the ether. Care must be taken not to allow the patient to come out sufficiently to exhibit any rigidity of the muscles, on the other hand, not to deepen the narcosis unnecessarily. As the operation is drawing to a close a warm saline enema should be given and the anæsthetic should be so lightened that the patient will exhibit signs of consciousness as the bandages are being applied. Place the patient in bed with as little jolting and jarring as possible. Darken the room and allow the patient to sleep until natural awakening occurs. The enema should be repeated every few hours as required, that is, until the patient shows some effects of its administration.

ANNALS OF SURGERY. July, 1908.

Aneurysmorrhaphy. Treatment of Popliteal Aneurysm by the Reconstructed Method, By J. F. BINNIE. neurysmorrhaphy. Personal Experience with the Aneurysmorrhaphy. Modern Method of Treating Aneurysm,

Aneurysmorrhaphy. A Case of Popliteal Aneurysm Presenting Unusual Difficulties in the Application of the Matas Operation.

By J. A. BLAKE.

The Serous Coat of Bloodvessels Compared with the Peritonaum, By R. T. Morris. Ligation of the Left Common Iliac Artery, with Report of a Recent Case, By W. J. GILLETTE.

The Question of Operation for Nonpenetrating Intra-

The Question of Operation for Nonpelletrating influence cranial Trauma,

Splenectomy. Report of Six Cases, together with a Statistical Summary of All the Reported Operations, up to the Year 1908,

Subcutaneous Rupture of the Spleen. Report of Cases

By G. G. Ross. By A. S. Lobingier. with Remarks, Gangrene of the Gallbladder,

The Treatment of the Appendix Stump after Appendectomy,

By M. WILLIS. Excision of Carcinoma of the Rectum by the Combined Method, By J. A. Blake.

The Diagnosis and Prognosis of Tuberculous and Sep-

tic Conditions of the Kidney, By G. E. Armstrong. 13. Transperitoneal Removal of Tumors of the Bladder, By C. H. MAYO. By E. A. BALLER. By E. 14. Ainhum.

Arrest of Growth at the Lower End of the Radius after Separation of the Epiphysis, By A. WAECHTER 16. Strain Fractures of the Knee, By S. LANGE

4. The Serous Coat of Bloodvessels Compared with the Peritonæum .- Morris thinks the most important part of the new surgical work with bloodvessels, especially with aneurysm, depends upon the similarity of the serous coat of bloodvessels to the peritonæum. Like the latter, the former throw out lymph for purposes of repair. Irritated surfaces in apposition adhere, and septic processes in the serous coat cause changes similar to those which occur in the peritonaum. Torsion of bloodvessels also causes such quick plastic occlusion that arteries of

the third class may be thus treated in place of by ligation. Aneurysm treated by digital pressure, by the introduction of coils of wire, or by electric needles causes exudation of lymph from the serous coats, followed by adhesion of opposed surfaces. The new work in suturing bloodvessels depends for its safety upon the prompt plastic repair of the serous coats. A warning from work upon the peritonæum should teach, however, that in suturing bloodvessels in general, a weak point will be left at the site of the slightest depression of the serous coat unless the other coats are treated in a way to fortify the weak point.

6. Operation for Nonpenetrating Intracranial Trauma.-Hartwell analyzes seven cases and reaches the following conclusions: I. Only in cases of isolated injury affecting the sensorimotor area can a positive focal diagnosis be made. 2. All grades of brain injury may be found in different parts of the same brain. 3. A general concussion may be followed by secondary changes in the circulation, which, if not relieved, will produce pressure and death. 4. A pure decompressing operation is indicated in two conditions, (a) for the relief of pressure due to inaccessible hæmorrhage, and (b) to relieve the pressure arising from traumatic ædema of the brain. 5. Operation done without a very definite object in view, which object is based on careful diagnosis, is apt to be more harmful than helpful. 6. The entire subject is fraught with manifold difficulties, and the brain surgeon should strive to become a practical neurologist in organic lesions.

7. Splenectomy.—Johnston quotes Vulpius as to the results of this operation, as follows: I. Extirpation of the spleen produces a transitory decrease in the number of red and an increase in the number of white corpuscles. 2. The thyreoid gland cannot vicariously assume the function of the spleen. 3. The lymphatic glands and the bone marrow show an increased blood forming activity after removal of the spleen. 4. The regeneration of the blood after loss of blood is probably less rapid in individuals from whom the spleen has been removed. The author collected 708 operations, with 514 recoveries. In the period from 1900 to 1908 there were 355 splenectomies, with 289 recoveries and a mortality of 18.5 per cent., against 27.4 per cent. for the entire series. Excluding splenectomies for traumatisms, there remain 242, with 210 recoveries. The contraindication to splenectomy in leuchæmia would exclude seven additional cases, leaving the mortality for the remaining 235 cases only 11.5 per cent.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section in General Medicine.

Meeting of March 17, 1908.

Dr. HERBERT S. CARTER in the Chair.

Cardiac Complications in Pulmonary Tuberculosis.—Dr. Lawrason Brown, of Saranac Lake, N. Y., read this paper. He considered the subject from two standpoints, the heart itself not diseased and the heart itself diseased.

I. The heart itself not diseased. The position of this organ in patients with pulmonary tuberculosis

depended, he said, directly upon the pathological changes that had taken place in the lungs. Adhesions often prevented displacement of the heart where one might be led to expect it. In right apical lesions of some standing the right border of the absolute cardiac dulness was found three quarters to one inch or more to the right, or about at the middle of the sternum. When there was extensive cavity formation on the right, when pneumothorax or effusion supervened upon the left, when the right lung was the seat of fibrosis consecutive to pulmonary tuberculosis, or, as some affirmed, to pleurisy, the heart might be found entirely upon the right side. In an interesting case of pneumothorax from rupture of the wall of a cavity in the lower part of the left upper lobe, the heart was found gradually forced over toward the right side a number of times, but it always returned when a needle was introduced and the air allowed to escape. Pulmonary tuberculosis was probably by far the most frequent cause of noncongenital dextrocardia, but this usually developed only when the left lung was slightly affected and was not bound down by pleuritic adhesions. Contraction of the left lung or pneumothorax upon the right side might so greatly displace the heart that the point of maximum impulse was beyond the left anterior axillary line. Many theories had been advanced to account for the smallness of the heart which undoubtedly existed in a number of patients who had died of pulmonary tuberculosis. Post mortem observations were not entirely satisfactory for the solution of this problem. Rueter, in 1884, in 250 autopsies on patients with pulmonary tuberculosis, found a small heart in twenty-nine per cent. of the men and in fifty-six per cent. of the women. During the past year Mendl and Selig had stated that the heart was small in comparison with the body. If, as Krehl believed, the same amount of blood was driven through the lungs until the pulmonary vessels were reduced three quarters, it was readily seen that the remaining vessels must increase in size or dilate, or pressure in the pulmonary artery would increase, the right ventricle undergo hypertrophy, and the second sound at the pulmonic area become accentuated. Few observations indicating enlargement of the heart in pulmonary tuberculosis had been made until recently, and some of the authors had attributed the hypertrophy in many cases to alcohol. Palhier believed that hypertrophy occurred only when pathological changes were found elsewhere in the body. In 200 autopsies at the Phipps Institute hypertrophy was present thirteen times, six times of the left ventricle, two of the right, and five of both. Clinical statistics bearing upon the size of the heart were meagre. The diagnosis of enlargement of the heart in far advanced stages, where fibrosis and contraction or emphysema were often pronounced, must rest upon the accentuation of the pulmonic second sound and increased epigastric pulsation, or, indeed, the use of the x ray. Emerson believed that if the general nutrition was maintained or was increasing, the general blood pressure remaining normal, and if there was rapid action of the heart with accentuation of the second pulmonic sound, cardiac hypertrophy was in all probability taking place, even though not evident in clinical examination. Laennec, Louis, and others had noted dilatation of the heart to be exceptional;

it had been found more in acute types of the disease (Brun), especially when they occurred in patients with chronic fibroid changes. In acute miliary tuberculosis of the lungs dilatation and hypertrophy of the right ventricles were not rare, and were essentially mechanical results, due to the impeded pulmonary circulation. Sequer, in 271 autopsies, had found it present twenty-one times in patients with fibroid, seven times in patients with ulcerative forms. At the Phipps Institute dilatation of the right heart had been noted clinically in nine per cent. of 1,491 patients, and at autopsy in twenty-four per cent. of 200 cases. According to Norris, it occurred clinically in thirty-two per cent., at autopsy in twenty-one per cent. of patients with pulmonary tuberculosis. Dilatation of the right side was often accompanied with hypertrophy of the right ventricle, which Jaccoud believed was favorable. The area of cardiac dulness was rarely changed in 1,289 patients at the Adirondack Cottage Sanatorium unless some valvular disease was present. Careful auscultation of the heart revealed in a large proportion of the cases of pulmonary tuberculosis some deviation from the normal state. A study of the hearts of 1,289 patients at the Adirondack Cottage Sanatorium showed that sixty-five per cent. presented some slight deviation. In seventyfive per cent. of the cases the heart sounds were found of normal relative intensity. A weakened first sound was rather frequent in well advanced stages and is often more pronounced during acute attacks. Functional murmurs were present in six per cent. of these 1,289 cases and in 2.6 per cent. of 639 at the Phipps Institute, but the latter were in much more advanced stages, when such murmurs would seem more likely to occur. A systolic whiff due to compression of a cavity during systole was not very rare, and murmurs might be produced in cavities by the systolic distention of a large vessel or of an aneurysm. Reduplication of the heart sounds had rarely been noted, occurring but in one per cent. of the 1,289 cases. Irregularity of the heart's action and a skip of the beat were infrequent in the early stages. The pulse in tuberculosis was a very valuable guide, both for prognostic purposes and in the regulation of exercise. The majority of the patients had at first a slightly increased pulse rate (90 to 100), even when apyretic and frequently when at rest in bed. The cause of the increased frequency was still unsettled. Inflammation of the vagus, with a fall in blood pressure, irritation of the sympathetic, increased irritability of the cardiac ganglia or muscle fibres, myocarditis, anæmia, and dyspepsia had all been suggested as factors. most probable cause, especially in incipient cases, was a weakening of the cardiac muscle and its nervous control due to the tuberculous toxine. blood pressure in many cases of pulmonary tuberculosis was lowered from the very onset, and some had held that defective tension was present in the predisposed. Palpitation occurred in twenty-one per cent. of the 1,289 patients, but it was a rare thing for patients to complain of this symptom in the

2. The large treef diseased Heart disease detering during pulmonary tuberculosis might be trend, as sider of frequency, in the pericardium, the ordered in a the myocardium. Nontuberculous

changes in the myocardium were not infrequent at autopsy, but difficult to detect clinically. They were very rarely tuberculous in nature, and consisted of fatty degeneration, fragmentation of the myocardium, and hypertrophy of the muscle nuclei. Fatty degeneration might follow this muscular atrophy, but unless the pericardium also was affected, these changes often passed undetected. When, however, cyanosis, œdema, dyspnœa, and a frequent and irregular, small pulse occurred, such changes were very probable. Adynamia was not common, and occurred usually only late in fibrosis. Kidd believed that attacks resembling angina pectoris were only coincidences. The great increase in weight which some patients who were kept perfectly quiet exhibited must at times affect the heart. Tuberculosis of the myocardium was very rare, being observed about once in a thousand autopsies of tuberculous persons. It had little clinical significance and was practically never diagnosticated except post mortem. It was said to occur most frequently in miliary tuberculosis, less often as large solitary tubercules, and more rarely still as a diffuse tuberculous fibrosis without caseation. These changes seldom produced functional disturbances. The disease usually extended by direct continuity from the pericardium or endocardium into the myocardium. The pericardium was said to be more frequently attacked in tuberculosis than the endocardium or myocardium. The symptoms were frequently very obscure and often overlooked. In 7,646 cases of pulmonary tuberculosis, Norris found only thirty-one instances of pericarditis. Tuberculosis ranked next to rheumatism in the ætiology of pericarditis. A tuberculous pulmonary cavity might in very rare instances perforate into the pericardium, producing pneumopericarditis. The occurrence of pericarditis naturally aggravated the symptoms of tuberculosis, and the prognosis was unfavorable.

Clinically, endocarditis was found associated with pulmonary tuberculosis much more frequently than pericarditis, but at autopsy it was less frequent. In 8,154 autopsies collected by Norris, valvular disease was present 293 times. Records of 60,428 patients with pulmonary tuberculosis showed that valvular disease of the heart occurred in one per cent. of the cases. Endocarditis in pulmonary tuberculosis might be due to secondary organisms or to the tubercle bacillus. Endocarditis occurring during pulmonary tuberculosis was most often a late complication, and thus passed by. He had no recollection or any definite record of endocarditis developing in a patient with pulmonary tuberculosis. Tuberculous endocarditis was very rare, and many instances reported as such could not be accepted. It was not improbable that tubercle bacilli circulating in the blood might lodge in the valves in a preexisting endocarditis. True tuberculous changes must be present in the vegetations above the elastic membrane to uphold a diagnosis of tuberculous endocarditis. Tuberculous endocarditis was so rare that it had no clinical significance, and had seldom been diagnosticated ante mortem. Thrombi in the right ventricle were rarely diagnosticated ante mortem and rarely occurred in acute cases, but usually were found late in chronic cases. They were due to changes in the endothelium, to stasts, and to changes occurring in the blood. Warthin had found thrombi in ten per

cent, of his tuberculous patients. A sudden onset of dyspnœa with crises of suffocation and a tumultuous heart's action were suggestive of this condition. Syncope or pulmonary apoplexy might occur. In more than three thousand patients who had been more or less closely followed for a number of years the writer had yet to see an instance where undoubted valvular disease developed in a patient with pulmonary tuberculosis, unless he was in a far advanced stage of the disease. A smaller proportion of patients with cardiac disease presented signs of pulmonary tuberculosis than was found in the general population. Meisenberg concluded that, given either endocarditis or pulmonary tuberculosis, the other was less frequent than occurring by itself. Otto believed that cardiac disease was more frequently associated with pulmonary tuberculosis in women than in men, but four cases out of six which the writer had had were in men. The left side of the heart was usually affected. Disease of the mitral valve was much more frequent than that of the aortic, and both were more often affected singly than together. Pure mitral insufficiency was the most frequent lesion associated with pulmonary tuberculosis, but it did not apparently predispose to pulmonary tuberculosis. The age incidence of this lesion and that of pulmonary tuberculosis coincided. In thirty-six instances of "organic murmurs" at the Phipps Institute pure mitral insufficiency occurred twenty-four times and was present in connection with other murmurs seven times. In seventy-seven instances of valvular disease in connection with pulmonary tuberculosis the writer had found pure mitral insufficiency forty-four In four other cases it was associated with other lesions. It seemed, if well compensated, to exert little influence upon the course or the symptoms of pulmonary tuberculosis. Mitral stenosis was far less frequent than insufficiency, and pulmonary tuberculosis was far less frequently associated with it than with other forms of heart disease. A number of theories had been put forth to account for this. Patients with mitral stenosis often did remarkably well. Aortic insufficiency was much rarer than many older authorities had stated. It occurred, according to Meisenberg, in 5.4 per cent., according to Norris, in 3.6 per cent., of all patients with cardiac lesions in pulmonary tuberculosis. Neither inhibiting nor predisposing influences had been attributed to it. De Renzi and others believed that this type of valvular heart disease was the most frequent in pulmonary tuberculosis. Aortic stenosis was, as would be supposed, less frequent than insufficiency, judging from both the clinical and autopsy records. Meisenberg saw it twice in 4,649 cases of pulmonary tuberculosis, and Ruck once in 3,000. The writer had seen no instance of it. Pulmonary stenosis was rare, occurring, according to Norris, in 0.12 per cent. of patients with pulmonary tuberculosis, and in four per cent. of patients with pulmonary tuberculosis and cardiac disease. Pulmonary stenosis predisposed to pulmonary tuberculosis. Pulmonary stenosis was always the primary disease, mitral insufficiency and aortic insufficiency usually the secondary. Pulmonary tuberculosis occurred more frequently with pulmonary stenosis than with any other form of cardiac disease. Mitral insufficiency was associated with pulmonary tuberculosis more often than any other form of valvular disease. Aortic

stenosis was very rarely associated with pulmonary tuberculosis, and pulmonary stenosis was infrequent in pulmonary tuberculosis. Involvement of several valves simultaneously was rare in these cases. Heart disease might render the diagnosis of tuberculosis difficult and in many instances impossible.

The treatment of the various forms of valvular heart disease occurring in connection with pulmonary tuberculosis differed in no way from that employed in ordinary cardiac disease. Arsenic, strychnine, an ice bag over the præcordium, carbonic acid baths, and rest were of value. Nitroglycerin might give relief. Excitement, alcohol, and tobacco should be avoided.

The Cerebral Complications of Ulcerative Endocarditis.—Dr. Thomas B. Futcher, of Baltimore, reported two cases of cerebral embolism complicating acute ulcerative endocarditis. In the first case there was an embolic or thrombotic obstruction of the posterior inferior cerebellar artery. As a result of the obstruction of this vessel the foci of softening were always situated in the dorsal and lateral aspect of the medulla, and these structures were more or less involved, viz., the lateral aspect of the reticular formation, the descending root of the fifth nerve and its nucleus, Gowers's ventrolateral ascending tract, the direct cerebellar tract, and the inferior cerebellar peduncle and the fibres going to it. In the second case there was blocking of the middle cerebral artery with hemiplegia of the opposite side. The heart and brain from this patient were shown.

Dr. Futcher then presented an analysis of the cases of cerebral embolism in ulcerative endocarditis that had occurred in the medical wards of Johns Hopkins Hospital since its opening, on May 15, 1889, nearly nineteen years ago. Up to March 1, 1908, there had been twenty-two cases of cerebral embolism complicating acute endocarditis. the cases there were marked cardiac features indicative of an acute endocarditis, with definite evidences of valvular lesions on physical examination. There was hemiplegia in all but one case; in this there was monoplegia of the arm. During these nineteen years there were 22,300 medical admissions to the wards, and during this period there were forty-eight cases diagnosticated as ulcerative or malignant endocarditis. From this it would appear that cerebral embolism occurred in 45.8 per cent. of the cases. In addition to the forty-eight cases of ulcerative endocarditis, there were 122 cases diagnosticated as acute endocarditis, making a total of 170 cases with an acute endocardial process. In other words, out of 170 cases of acute endocarditis, cerebral embolism occurred in twenty-two instances, or in 12.9 per cent. There were ten males and twelve females. The largest number of cases, seven, occurred in the fifth decade. The cases were chiefly in the young adults, thirteen occurring before the fortieth year, before arterial changes would be likely to occur. The predominating number of cases showed an affection of the mitral valve. Clinical signs of mitral stenosis and insufficiency occurred in nineteen of the cases. In three there was also aortic insufficiency. The hemiplegia was left sided in ten cases only, a most interesting finding. A. Ernest Jones found that in thirteen autopsies in cases of cerebral embolism in the University College Hospital, London, eight were on the left side and five on the right. Out

of a total of 558 cases he had collected from the literature, 236 were right sided, and 322, or sixty per cent., were left sided. The duration of life after the initial embolism in the fatal cases varied between two days and ten months. In their wards there had been 220 cases of hemiplegia, and in twenty-one of these the lesion was due to cerebral embolism. This would leave 198 cases in which the hemiplegia was due to apoplexy, cerebral thrombosis, tumor, or meningitis.

The Clinical Features of Myocardial Disease. -Dr. Alfred Stengel, of Philadelphia, presented this communication. All must admit, he said, that many cases of myocardial disease came to them as autopsical surprises. In considering the clinical aspects of myocardial disease he discussed it from two points of view, that of the heart itself, and that of the individual pathological lesion. Weakening of the heart, failure of heart power, chronic insufficiency of the heart, or hyposystolism showed itself by symptoms referable to the heart itself, but they were so often vague as to lead to mistakes in diagnosis. The subjective symptoms were the early expressions of this weakening of the heart muscle; the myocardium resented the ordinary strains of life. Of the visceral manifestations, hepatic symptoms were the most common, and enlargement of the liver often took place a long time before there were evidences of failing compensation. Cyanosis, ædema, dropsical conditions, etc., occurred later in cases of myocardial disease than in valvular disease. In some cases of myocardial disease there occurred only the general symptoms, nutritional and neurotic. many cases these were the earliest manifestations. Myocarditis had its origin in infectious diseases, rheumatic fever, infections of later life, strains of a severe nature occurring in early life, etc. In simple, pure endocarditis there were the same symptoms which were said to be significant of a weakened heart in general. Bradycardia occurring after typhoid fever was due to myocardial weakness. In simple myocarditis the heart might attain a large size, as described by Quain. In chronic myocarditis there might be an enlarged heart with inadequate apex impulse. Again, there was a type of cases in which the heart was enlarged, but with a strong impulse; in this the heart muscle fibres were in a relaxed condition and gave a "slapping impulse." There was much slack to be taken up. In pure chronic myocarditis one found a prolonged vibrating first sound, which was easily transformed into "murmurish." There was another group of cases associated with sclerosis, with angina, and with paroxysms of asthma, not occurring spontaneously. The effect of exercise on the heart in developing an attack of this nature was the same as the effect of exercise of the leg muscles in developing cramps and weakness of the legs. One of the most difficult things to diagnosticate was pure degeneration of the heart, and a diagnosis of fatty degeneration was impossible except conjecturally. There was a fibrous degeneration which occurred in patients with fibroid tumors of the uterus and its annexa, and oftentimes sudden death after myomectomy resulted because of this. Enlargement of the heart was associated with syphilitic disease of the heart.

Dr. W. GILMAN THOMPSON said it was interesting to note how much displacement of the heart

could occur without any special functional disturbances. He had watched experiments made by the late Dr. H. P. Loomis at Bellevue Hospital, injecting nitrogen gas to produce an artificial pneumothorax in order to compress the lung; he had seen the heart displaced to the opposite side in the course of twenty minutes or more without producing any special disturbance or discomfort. Patients at Bellevue Hospital had been subjected as a rule to deprivation, were alcoholics or syphilitics, and there were other underlying factors which weakened their resisting powers; therefore they acquired tuberculosis more readily. Bradycardia might result from inflammation of the vagus nerve, but this was a matter for clinical debate and not of actual demonstration.

Dr. ALEXANDER LAMBERT said that, in looking over more than 125 autopsical records at Bellevue Hospital, he could not find a single instance where a normal heart was found in an alcoholic.

Dr. Henry Koplik said it was rare for a child to suffer from myocarditis pure and simple. The heart symptoms following acute infectious diseases in adults, if present in children, would be most serious. In children myocardial diseases were always very serious.

Dr. Morris Manges presented specimens of acute ulcerative endocarditis and hæmorrhage into the brain. In this case it was very natural to assume the presence of pachymeningitis with hæmorrhages. The patient was found one morning in coma. The left pupil was of the size of a pin point, while the right pupil was dilated. There was right hemiplegia with lack of tactile sense. An enormous hæmorrhage was found extending as far back as the cord and anteriorly to the chiasm. The greater hæmorrhage was in the island of Reil; this had extended through the Sylvian fissure to the median line.

Dr. L. F. BISHOP said that there were many symptoms that had been supposed to be due to myocardial disease, but in the light of recent studies they were now known to be due to peripheral disease with reflex symptoms referable to the heart.

Dr. FUTCHER said he knew of no instance of hæmorrhage occurring in ulcerative endocarditis.

Dr. Brown said that, among the 1,300 cases referred to, there were but six of valvular disease, four of mitral, and two of aortic insufficiency. Five or six patients sent to the sanatorium with a diagnosis of pulmonary tuberculosis really had cardiac disease.

Letters to the Editors.

SNAKES IN IRELAND.

Bolton Landing, Lake George, N. Y., July 26, 1008.

To the Editors

I take the liberty of quoting from the editorial on the Persistence of Error, published in yesterday's issue of your Journal, the following: "Niels Horrobow opens a chapter on the Snakes in Iceland by the phrase 'There are no snakes in Iceland.' Some careless borrower made the quotation read 'Ireland,' and nothing less than a Papal bull would now correct the popular error."

Now, I do not profess to be particularly Papal, nor am I in a position to fire bulls at anybody or

against any error. But it seems there may be some reason beyond a misquotation which explains the connection between Ireland and the "absence of snakes" in that island. Baeda Venerabilis (673-735) issued in 731 The Ecclesiastical History of the English Nation, the first printed edition of which was published in Strassburg in 1473. From its first chapter I quote literally what follows in connection with the remarks on Ireland: "No reptiles are found there, and no snake can live there; for, though often carried thither out of Britain, as soon as the ship comes near the shore, and the scent of the air reaches them, they die."

The venerable bishop adds this: "On the contrary, almost all things in the island are good against poison. In short, we have known that when some persons were bitten by serpents, the scrapings of leaves of books that were brought out of Ireland, being put into water, and given them to drink, have immediately expelled the spreading poison, and as-

suaged the swelling.

The books of the twentieth century are not famous for a similar beneficial result. Their efficacy may demonstrate itself in an inverse ratio to their numbers.

A. JACOBI.

Book Aotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Manual of the Diseases of Infants and Children. By JOHN RUHRÄH, M. D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 423. (Price, \$2,50.)

The first edition of this practical manual appeared in the latter part of 1905, and the new edition, now published, has been altered in some minor respects. Several sections have been added, among them sections on the medical inspection of school children, on the duration of the danger of contagion after infectious diseases, and on the return to school of children after exposure to contagious diseases, also a short bibliography of the current pædiatric litera-

ture of 1905 and 1906.

Dr. Ruhräh has supplied in 423 pages a very valuable handbook of the diseases of infants and children. Although he states in his preface that this little book has been prepared for the medical student, not to supplant the larger and necessary textbook, the general practitioner will be glad to possess such a handy reference book, especially as the author has added a large number of references in footnotes, which will enable the reader to look up the subjects.

Die Lehre von der Intubation Von Prof. Dr. J. von Bokay, Direktor des Stefanie Kinderspitals zu Budapest, etc. Mit 113 Abbildungen und 2 Tabellen im Text. Leipzig: F. C. W. Vogel, 1908. Pp. 250. (Price, M. 10.)

This more than ordinarily well illustrated and very complete presentation covers the entire field, not only of O'Dwyer's procedure, to which naturally most space is devoted, but the allied subjects of intubation in luetic strictures, scleroma, papilloma of

the larynx, foreign bodies as well, and also takes in intubation by the mouth and the use of the tampon cannula. The author refers again and again to the genius and patient industry of O'Dwyer, and gives full credit to the other American pædiatrists and laryngologists who have been active in this Von Bokay's work is a model of a scientific review, complete, well arranged and interesting. Every detail connected with the theory and practice of intubation is considered, even to the minutiæ of the manufacture of tubes and instruments and the various questions of pathology, such as local traumatism and consecutive pneumonia. Those who wish to inform themselves on this subject will find instruction in every line, and those who already know it all will derive most pleasure from the chapters on the history of intubation, the life and experiments of Joseph O'Dwyer, the criticisms of various procedures, and the graceful yet accurate diction which distinguishes them all.

Lehrbuch der Ohrenheilkunde. Für Studierende und Aerzte. Von Dr. Georg Boenninghaus, Priv. Doz. für Ohrenheilkunde. Ohrenarzt am St. Georgs-Krankenhaus zu Breslau. Mit 139 Textabbildungen und 1 Tafel farbiger Trommelfellbilder. Berlin: S. Karger, 1908. Pp. viii-376. (Price, M. 9.80.)

The Breslau otologist has produced a textbook of medium size, in which most attention is paid to the needs of the student, and a more than usually complete account is given of the functions of the organ of hearing, the tests of these functions, and the clinical examination of the ear. The last subject, in particular, is treated of very fully, and the chapter on otoscopy, illustrated with specially prepared pen drawings and a number of colored plates, is one of the best the reviewer has ever read. The physiology of the ear is considered from the latest standpoint of clinical and laboratory research, and includes the nonacoustic functions of the inner ear, the regulation of equilibrium and muscle tonus, and the tests of this static sense. The major operations on the ear and mastoid in acute and chronic suppuration and in the various intracranial complications are considered in a separate chapter on surgery, which is admirably concise, instructive, and complete. The illustrations are mainly diagrammatic, and the various steps of the operations, as well as the dangers, anatomical landmarks, instrumental technique, and so on, are often indicated and sharply impressed with a phrase or a word. The analysis of the symptomatology and clinical diagnosis of diseases of the inner ear, a comparatively unexplored field, shows admirable clearness in the presentation of complex and obscure details.

Medical Gynæcology. By Samuel Wyllis Bandler, M. D., Fellow of the Association of American Obstetricians and Gynæcologists; Adjunct Professor of Diseases of Women, New York Postgraduate Medical School and Hospital, etc. With Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 676. (Price, \$5.)

There has been manifested by our gynæcologists of late a wholesome tendency to accord importance to "medical gynæcology," that term being understood to stand for the whole of gynæcology except the major operative work, and Dr. Bandler has given us a book on the subject in which the teaching is excellent for the most part, its faults being

almost wholly those of literary style. Due space is given to the eliciting of case histories, to methods of physical examination, and to the details of treatment. A valuable section on constipation is con-

tributed by Dr. George B. Mannheimer.

Dr. Bandler devotes nearly a hundred pages to venereal diseases as they present themselves in females, and the various manifestations of gonorrhœa, in particular, are very thoroughly handled. We would commend what he has to say on the relation of uterine displacements to symptoms and "general inelasticity" (page 534). He seems to be one of the few men who understand the real action of a pessary, and he does not evince for that device the contempt which for many years our great abdominal surgeons have expressed. We can recommend the book most heartily.

A Textbook of Physiological Chemistry. By Olaf Ham-Marsten, late Professor of Medical and Physiological Chemistry in the University of Upsala. Authorised Translation, from the Author's Enlarged and Revised Sixth German Edition, by John A. Mandel, Sc. D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. First Edition. First Thousand. New York: John Wiley & Sons, 1908.

Pp. 845.

The first American edition of this excellent and comprehensive work is based on the sixth German edition, which was carefully revised and rewritten in accordance with the great advances which have been made in physiological chemistry in the three years which have elapsed between the appearance of the fifth and sixth German editions. Probably no field of medicine has seen more numerous and important advances within a few years than have been made in physiological chemistry, and for this reason it is highly important that the physician who wishes to keep himself informed should avail himself of this treatise, which furnishes a reliable con-. spectus of the present status of this branch of medi-

Hygiene and Public Health. By Louis C. Parkes, M. D., D. P. H., University of London, Consulting Sanitary Adviser to H. M. Office Works, etc., and Henry R. Kenwoon, M. B. Edin., D. P. H. Lond., Professor of Hygiene and Public Health at University College, London, etc. Third Edition, with Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. xi-620. (Price, §3.)

By a judicious abbreviation of certain portions of the text the authors have made it possible to introduce whatever new matter was needed to maintain the standing of this admirable manual, and the third edition is worthy of all that has been said in commendation of its predecessors.

Hypnotic Therapeutics in Theory and Practice. With Numerous Illustrations of Treatment by Suggestion. By JOHN DUNCAN QUACKENBOS, A. M., M. D., Author of Hypnotism in Mental and Moral Culture, etc. New York and London: Harper & Brothers, 1908. Pp. 336.

This book, which the author states has been prepared for popular reading, has been so well exploited in the public press that most physicians have been able to form an opinion as to its value. is at a loss to understand why a physician with the author's attainments should be willing to publish as a scientific work a volume that contains so many incorrect statements. Is it possible that the author believes he has cured dementia præcox and incipient

insanity, not to mention diabetes mellitus and other diseases, by suggestion? The book can be of no value to physicians, as it is as erroneous and misleading as a manual on Christian Science.

BOOKS, PAMPHLETS, ETC., RECEIVED

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The Natural History of Cancer. With Special Reference to its Causation and Prevention. By W. Roger Williams, Fellow of the Royal College of Surgeons. New York: William Wood & Co., 1908. Pp. xiv-510.

Quain's Elements of Anatomy. Editors: Edward Albert Schäfer, LL. D., Sc. D., F. R. S., Professor of Physiology and Histology in the University of Edinburgh; Johnson Symington, M. D., F. R. S., Professor of Anatomy in Queen's College, Belfast; and Thomas Hastie Bryce, M. A., M. D., Lecturer in Anatomy in the University of Glasgow. In Four Volumes. Volume I. Embryology. By T. H. Bryce. Illustrated by More than Three Hundred Engravings, Many of Which are Colored. Eleventh Edition. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1908. Pp. viii-275.

Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp, Berlin; Prof. Küttner, Breslau; Prof. Lange, München; Prof. Lanz, Amsterdam; Prof. Payr, Greifswald; Prof. Perthes, Leipzig; Prof. Poppert, Giessen; Prof. Preysing, Coln; Prof. De Quervain, Bern-la Chaux de Fonds;

Perthes, Leipzig; Prof. Poppert, Giessen; Prof. Preysing, Coln; Prof. De Quervain, Bern-la Chaux de Fonds; Prof. J. Riedinger, Würzburg; Prof. Rovsing, Kopenhagen; Privatdozent Dr. Sauerbruch, Marburg; Prof. Schloffer, Innsbruck; Prof. Tilmann, Cöln; Prof. Wilms, Basel; Prof. Wullstein, Halle a. S. Herausgegeben von Prof. Wullstein, Halle a. S., und Prof. Wilms, Basel. Erster Band: Allgemeiner Teil. Chirurgie des Kopfes, des Halses, der Brust und der Wirbelsäule. Mit 336 zum teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1908. xii-600.

Memiarongein, John Guisel, Jeha, Gustav Fischer, 1962.

Movable Kidney. Its Pathology, Symptoms, and Treatment. By Harold W. Wilson, M. B., B. S. (Lond.), F. R. C. S. (Eng.), Demonstrator of Anatomy and Chief Assistant in the Surgical Out Patient Department, St. Bartholomew's Hospital, etc., and C. M. Hinds Howell, M. A., M. B., B. Ch. (Oxon.), M. R. C. P. (Lond.), Junior Demonstrator of Physiology, Late Casualty Physician, St. Bartholomew's Hospital, etc. With Illustrations. London: Edward Arnold, 1908. Pp. 104.

Bericht über den xiv. internationalen Kongress für Hygiene und Demographie, Berlin, 23-29 September, 1907.

Bander II, III, IV. Mit General-Namen- und Sach-Register. Berlin: August Hirschwald, 1908.

Surgery. By John Allan Wyeth, M. D., LL. D. (University of Alabama), President of the New York Academy of Medicine, etc. With 864 Illustrations. New York: Marion Sims Wyeth & Co., 1908. Pp. viii-816. (Price, \$6.)

Miscellany.

How a Great State Is Handling the Tuberculosis Problem.-Francine states that the platform on which Mr. Stewart was elected governor of Pennsylvania pledged the administration to make war against tuberculosis. The governor immediately on his inauguration requested the commissioner of health to formulate a comprehensive scheme to carry out his promise to the people. The sum of \$1,000,000 was appropriated in two sums, as follows: One of \$600,000 under an act "to provide for the establishment and maintenance of one or more separate sanatoria, or colonies, in Pennsylvania for the free care and treatment of indigent persons suffering from tuberculosis, and making an appropriation therefor"; the other, of \$400,000 provided for out of the general appropriation act, "to enable the department of health to establish and maintain, at such places in the State as may be deemed necessary, dispensaries for the free treat-

ment of indigent persons affected with tuberculosis, for the dissemination of knowledge relating to the prevention and cure of tuberculosis, for the study of social and occupational conditions that predispose to its development, and for continuing research experiments for the establishment of possible immunity and cure of said disease for two years." Acting under this authority, the commissioner of health has proceeded along the lines indicated by the letter of the law. The legislature having by special enactment called attention to "the sanatorium located on the State forestry reservation near Mont Alto in Franklin County," the commissioner proceeded to determine on the suitability of that location for the more extensive establishment contemplated. proved to be in every way desirable, having been selected by the State forestry commissioner, Dr. Joseph T. Rothrock, as the one reservation of the State best adapted for such a purpose. When taken over by the department of health, the camp at Mont Alto had accommodation for about twenty-eight cases. Already accommodation has been provided for one hundred and forty patients and plans are under way to greatly enlarge the capacity of the sanatorium. At present only incipient cases are admitted, but to meet the very urgent need for some place where advanced cases may be sent, an infirmary has been planned at Mont Alto with a capacity of one hundred beds, having the double object of segregating these patients for the public welfare and of furnishing them with every opportunity for treatment. There will also be a hospital for cases of transient and intercurrent illness and for surgical In regard to the dispensary system, sixtyseven dispensaries have been established to date, one in every county of the State, either in the county

Hatching Snakes.-Because of the popular aversion to the serpent family, there is a surprising amount of ignorance about even the simplest of snake habits. It is doubtful if many correct answers could be given to the question whether snakes lay eggs or bear their young alive. As a matter of fact, some species are viviparous and others oviparous. Most of the poisonous snakes, as well as many of our harmless varieties, belong to the former class. In the case of the viviparous species, the eggs remain in the oviduct so long that the young are hatched therein, while in other species the eggs undergo a partial incubation in the oviduct and are hatched soon after being laid. Such snakes are sometimes classed as oviviviparous. The eggs of the common water snake (America) are laid in July or August in a soft bed of loam or decaying vegetation, or in a heap of manure. The older snakes sometimes lay as many as a dozen eggs or more, and they usually stick together so that the entire cluster can be picked up at once. Sometimes, however, if the process of laying is slow, they will be separated. The eggs are about an inch long and of a whitish yellow color. The shell is thin and flexible like parchment. The young hatch in late summer or autumn. Before hatching, they develop a sharp calcareous growth on the tip of the snout known as the egg tooth, with which the shell is slit open. Unlike hatching chicks, which are suddenly

seat or the largest and most accessible town.—The Journal of the American Medical Association.

dispossessed by the breaking of their brittle shells, the young snakes may make many incisions in the parchment envelopes and take many peeps at the outside world before venturing forth into the new environment. Shortly after hatching, the egg tooth is lost. At first the young live on insects and worms, but within a few weeks they are strong enough to attack and devour young frogs. Strangely enough, although the adults are strong swimmers, and spend much time in ponds and streams hunting the fish and frogs on which they subsist, the young are unable to swim and they will soon drown if they fall into the water. The American water snake makes an excellent pet; it is perfectly harmless, becomes very tame, and learns to know the difference between friends and strangers. Gadow tells of a pet ring snake that would eat from his hand, crawl up his coat sleeve, and coil itself contentedly on his arm.—Scientific American, July 18, 1908.

Official Rems.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, dwing the week ending July 24, 1908:

| Smallpet chites | States | | |
|--|------------|---------|-----------|
| Place. Da | te. | Cases | . Deaths. |
| Mabama-MobileJune | 27-July 4 | . 1 | Imported |
| California-Los Angeles | 27- July 4 | 1 | |
| Illinois—Chicago July Indiana—Indianapolis July Kansas—Topeka June | 4·II | 1 | |
| Indiana-IndianarolisJuly | 5-12 | 2 | |
| Kansas-TopekaJune | 27-July 4 | 7 | |
| Nentucky—Covington | 4-11 | I | |
| Louisiana—New Orleans. July Maryland—Baltimore. July | 4-11 | 2 | |
| Michigan—Detroit July | 4-11 | | |
| Michigan—DetroitJuly Missouri—Kansas CityJuly | 4-II | | |
| Missouri-St. Joseph lune | 27-July 11 | | |
| Ohio-Cincinnati July Texas-San Antonio July | 4-II | 1 | |
| Texas—San AntonioJuly | 4-II | | |
| Washington-SpokaneJune | 27-July 4 | | |
| Wisconsin-La CrosseJuly | 4.11 | 7 | |
| Smalloox-Insular. | | | |
| Philippine Islands-Manila May | va.Line 6 | . 15 | Q |
| Puerto Rico-Mayaguez June | 20-27 | . 2 | 7 |
| Smallpax—For | | | |
| | | | |
| Canada—Ha'ifax | 25-July 4 | 6 | |
| China—Hongkong. May Ecuador—Guayaquil June | 23-June 6 | 7 | 4 |
| France -ParisJune | 23.22 | 2 | O |
| India—CalcuttaMay | 22 20 | | 20 |
| Italy -General | 21 28 | | |
| Italy-PalermoJune | 6-20 | . 6 | 2 |
| Italy—PalermoJune Italy—TurmJune | 7-14 | 1 | |
| Mexico Mexico City | 10-30 | | 47 |
| Russia-MoscowJune | 13-20 | . 32 | 5 |
| Russia—Odessa. May Russia—Warsaw May | 23-June 20 | 23 | 2. |
| Spain Barcalana Luna | 1-20 | | 4 3 |
| Spain—Valencia | 20-27 | . 9 | 3 |
| Spain—Barcelona June Spain—Valencia June Turkey—Constantirople May | 22.20 | . , | 6 |
| Yellow Ferer-F | | | |
| | | | |
| Cuba—DaiquiriJune CuraçaoJune | 10-20 | . 3 | |
| Ecuador—GuayaquilJune | 12.20 | . 1 | 1 |
| | | | * |
| Cheier: -Fore | | | |
| India—Calcutta | 23-30 | | 81 |
| Progue Fere | ign. | | |
| British Gold Coast-Vkkra May | | . 3 | 3 |
| Chile—Antofagasta May Chile—Africa June | 30 | . 18 | 2 |
| hile-AiricaJune | 2 | | Present |
| hina-HongkongMay | 23-June 6 | . 271 | 221 |
| reuador—Guayaquilline India—General | 13.23 | | 1,11,1 |
| India CalcuttaMay | 22:21 | . 4 313 | (1) |
| India - Madras May | ¿·lune 5 | | 4 |
| Japan-Nara June | 21 | . 1.4 | 4 |
| Japan—Nara. June Peru—General June Straits Settlements—SingaporeMay | 13.20 | . 18 | 1) |
| Straits Settlements-Singapore May | 23.30 | | 1 |
| timpled | 22- July 1 | . 4 | |
| Venezuela -La Guayra lune | 3) | | 1 |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 22, 1908:

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life Saving Service, upon completion of which to rejoin his station at Ellis Island, N. Y.

BARNETT, E. E., Pharmacist. Granted leave of absence for twenty-six days from August 5, 1908.

CLARK, E. S., Acting Assistant Surgeon. Leave of absence granted for ten days, from June 11, 1908, amended to

read for six days, from June 15, 1908.

CLARK, Taliaferro, Passed Assistant Surgeon. Directed to proceed to Lebanon. Pa., for special temporary duty, upon completion of which to rejoin his station at Phil-

adelphia, Pa.

EBERT, H. G., Assistant Surgeon. Relieved from special temporary duty at San Francisco, Cal., and directed to report to the medical officer in command, San Francisco Quarantine Station, Angel Island, Cal., for duty and assignment to quarters.

McGinnis, R. H., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from August 17, 1908.

Mean, F. W., Surgeon. Directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfimen of the Life Saving Service, upon completion of which to rejoin his station at Savannah, Ga.

MISKIMON, R., Pharmacist. Granted leave of absence for seven days, from July 18, 1908, under paragraph 210, Service Regulations.

MULLAN, E. H., Assistant Surgeon. Granted leave of absence for two days, from July 13, 1908, on account of

Rogers, E., Pharmacist. Granted leave of absence for three days, from July 8, 1908, under paragraph 210, Service Regulations.

Service Regulations.

SAFFORD, M. V., Acting Assistant Surgeon. Granted leave of absence for five days, from July 14, 1908, under paragraph 210, Service Regulations.

SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague, and Cape Charles City, Va., for the control of t the purpose of examining keepers and surfmen of the Life Saving Service, upon completion of which to rejoin his station at Baltimore, Md.

TROXLER, R. F., Pharmacist. Granted leave of absence for

two days from July 17, 1908. Wasdin, Eugene, Surgeon. Granted leave of absence for one month, from August 1, 1908.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for

BAYLY, R. C., First Lieutenant. Ordered to Fort D. A. Russell, Wyo., for duty.

DEAR, W. R., First Lieutenant. Ordered to the Army General Hospital, Washington, D. C., for duty.

HARRIS, H. S. T., Major. Granted an extension of ten days to leave of absence.

JUNNSON, R. W., Major. Left Havana, Cuba, on leave of absence for one month in the United States.

KING, EDGAR, First Lieutenant. Relieved from further duty in the Philippines Division, and assigned to duty in the Army Transport Service, with station at San Fran-

cisco, Cal.

MASON, C. F., Major. Detailed to represent the Medical Department of the United States Army at the meeting of the American Public Health Association, Win-

nipeg, Manitoba, Canada, August 25 to 28, 1908. Woodbury, F. T., Captain. Ordered, at the expiration of his present leave of absence, to Fort Assinniboine,

The following named first lieutenants, Medical Reserve Corps, recently appointed from contract surgeons, United G. F. Adair, F. M. Barney, L. P. Bell, I. W. Brewer, D. P.

Card, A. M. Chase, C. L. Chase, F. J. Conzelmann, P. G. Drake, L. R. Dunbar, W. J. Enders, H. L. Freeland, L. C. Garcia, W. R. S. George, L. K. Graves, F. C. Griffis, W. C. Griswold, F. A. Halliday, D. W. Harmon, H. I. Harris, J. W. Hart, W. L. Hart, H. E. Hasseltine, O. F. Henning, A. R. Jarrett, C. W. Johnson, J. S. Kennedy, J. W. Love, F. M. McCallum, C. E. MacDonald, J. C. Magee, M. F. Marvin, A. L. Miller, S. F. O'Day, L. B. Peck, Jos. Pinquard, James Reagles, E. E. Roberts, J. L. Sanford, E. F. Slater, C. H. Stearns, J. K. Stockard, Frank Suggs, E. S. Tenney, George Trotter-Tyler, A. D. Tuttle, F. M. Wall, V. E. Watkins, C. I. Wertenbaker, H. R. Weston, Walter Whitney, D. C. Wiggin, H. C. Woolley, R. J. Wrenn, H. W. Yemans. Yemans.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending July 25, 1908:

BIDDLE, C., Medical Inspector. Detached from the Marine Recruiting Station, Philadelphia, Pa., ordered home, and

granted leave of absence for two months

BISHOP, L. W., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Indianapolis, Ind., and ordered to the Naval Hospital, New York, N. Y., for treatment and observation.

CLIFTON, A. L., Assistant Surgeon. Commissioned an as-

CLIFTON, A. L., Assistant Surgeon. Commissioned an assistant surgeon from July 15, 1908.

COLE, H. W., Jr., Assistant Surgeon. Ordered to the Navy Yard, Charleston, S. C.

CROW, G. B., Assistant Surgeon. Commissioned an assistant surgeon from July 15, 1908.

HOEN, W. S., Passed Assistant Surgeon. Ordered to Washington, D. C., and report to the Bureau of Medicine and Surgery, Navy Department, for further orders, when discharged from treatment at the Naval Hospital, Mare Island, Cal.

pital, Mare Island, Cal.

McGure, L. W., Assistant Surgeon. Detached from the
Navy Yard, Charleston, S. C., and ordered to the Montana when commissioned.

Montana when commissioned.

McLarry, C., Pharmacist, retired. Detached from the Naval Hospital, Mare Island, Cal., and ordered home.

Rhoades, G. C., Assistant Surgeon. Detached from the Franklin and ordered to the Scorpion.

STALNAKER, P. R., Assistant Surgeon. Ordered to the Naval Hospital, Annapolis, Md.

STRITE, C. E., Assistant Surgeon. Detached from the Franklin and ordered to the Naval Hospital, Nortella Naval Hospital, Naval

folk, Va. Suттон, D. G., Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the

Births, Marriages, and Deaths.

Married.

BEACH-TURNER.-In Buffalo, on Tuesday, July 28th, Dr. Channing E. Beach and Miss Laura Stevens Turner. GUINAN—GALLOW.—In Pontiac, Michigan, July 18th, Dr. Mat K. Guinan and Miss Irene Gallow.

FLINT.—In Seabright, New Jersey, on Saturday, July 25th, Dr. Carleton Phillips Flint, of New York, aged thirty-five years. Kraft.—In St. Louis, on Monday, July 20th, Dr. Frank

Kraft, —In St. Louis, on Moliday, July 2011, Dr. Frank Kraft, of Cleveland, Ohio, aged fifty-seven years. McGraw.—In Springdale, Pennsylvania, on Wednesday, July 22d, Dr. E. B. McGraw, of Pittsburgh. O'NeILL.—In Buffalo, on Wednesday, July 15th, Dr. James M. O'Neill, aged fifty-six years. Ordenway.—In Cochituate, Massachusetts, on Thursday,

Ordway.—In Cochituate, Massachusetts, on Intersally, July 23d, Dr. George A. Ordway, aged sixty-four years.
Pope.—In New Orleans, on Saturday, July 18th, Dr. Bolling A. Pope, aged forty-two years.
Swan.—In Cambridge, Massachusetts, on Monday, July 20th, Mary Hubbard Swan, wife of Dr. W. D. Swan, aged

TEED.-In New York, on Monday, July 6th, Dr. S. F. Teed, formerly of Utica, aged eighty-two years.
Wetmore.—In New York, on Monday, July 20th, Dr.
John McEwan Wetmore, aged seventy-five years.
Wetmore in Plandelphia, on Tuesday, July 21st, Dr.

Augustus Wurtele, aged thirty-eight years.

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WHOLE No. 1549.

Original Communications.

THE TONSIL FROM AN EVOLUTIONARY POINT OF VIEW.

> By Jonathan Wright, M. D., New York.

As an introduction to what I have to say, I may refer to a recent work of Brieger and Görke,' who regard at least the pharyngeal tonsil as an organ which protects childhood. They seem to find sufficient evidence to warrant them in the belief that in its hypertrophied condition it is a more efficient protection against the entrance of the unknown germs of the diseases of childhood than when it retains its normal dimensions.

Largely hypothetical as are the ideas as to the functions of the tonsils, the literature in regard to their physiological properties is of considerable extent, but into it I do not propose to go further than to remark that the view that they are only pathological entities, and therefore have no function, was founded upon opinions derived from clinical experience alone, without the benefit which accrues from a wider acquaintance with special pathology and general biological principles.

Gradually in the attention I have given the subject, extending in one form or another over many years, examining it from various points of view, expressed in several papers published in the New York Medical Journal and elsewhere, I have come to a fairly definite opinion, at least as to one of the functions of the tonsil. Whether this agrees entirely with the views of the German writers referred to before I do not know, as I have not read their pa-

pers with sufficient care to note.

In dealing with the subject of the tonsils from another point of view, I do so chiefly in the hope of bringing collateral evidence to bear from a new side, and thus by a chain of circumstantial inferences I hope to add something to what I have already presented, which may help ultimately to establish what the function of the tonsil really is.

In the first place, there is such a thing as a tonsil, quite aside from that object of revenue which the clinician contemplates in his office with feelings of satisfaction other than scientific. It is a definite organ, and in the human race it is the most highly developed of all the lymph glands, having an extent and a complexity, considering the whole faucial and laryngeal ring, entirely in excess of any other local aggregate of lymphoid tissue, except the spleen. It

is always and persistently found at the junction of the two great avenues whereby all that man assimilates is introduced to the chief organs of vital metabolism. This position at the gateway of nourishment and disease loses none of its evolutionary significance from our knowledge that like structures are found elsewhere along the food and air tubes. On the contrary, the coincidence of its position and of its extra development should of itself have due weight in the view, from an evolutionary standpoint at least, that it subserves some purpose.

It is at the beginning not only of the hollow tubes of respiration and nutrition, but it is the first of the internal nodal filters, which lie across the bypath from the surface to the vena cava, traversed by the agents of infection. If its normal state is one of comparatively little obstruction to the passage of food and air, such a condition varies between wide limits of volume, and it is impossible to draw any line between the minute structure of the normal and

that of the abnormal in size.

The enlargement becomes pathogenic, or, less accurately, pathological, only when it injures the system more by its presence than it assists it in whatever physiological acts of assimilation or defense it may have to perform. All organs exhibit this functional balance between injury and assistance of the organism. It is a symbiosis arranged by evolution.

It has been plainly demonstrated in the observations of Jennings upon the lower organisms,2 which are of the most careful and objective kind, "that when two agents, influencing an organism in opposite ways, act simultaneously, the effect of one must give way to that of the other, or the two must combine to produce a resultant. It is impossible that each should produce its characteristic effect. In such a light must be viewed the evolution of the

Many large tonsils exist from childhood to old age without in the least being either a source of danger or even of inconvenience. That question need not be discussed, but whether they are ever of great advantage in their hypertrophied state is quite another question and is one of the points here involved. Now, if there is one thing medicine has to learn from biology it is that many of the things the medicine man calls pathological are, in biological terms, variations. Their existence, even when originating in temporary disturbances of the organism (inflammation?) may not subsequently be a menace to health. They are thus not infrequently responses to environmental stimulation. If their presence in this state has any survival value for the organism,

Archie fur Larungologie, xix, No. 2.

subsequently through the action of natural selection the greater tendency to their hyperplasia, a greater tendency to give that sort of answer to an inimical agent, appears as a radical characteristic. There is a survival then of that strain in the race which has thus been able to carve its salvation out of a "pathological" entity.

It is not here in any way a question of the creation of a new organ. It is the hyperplasia of one already existent. Burbank has insisted that in the plant world new varieties are thus constantly arising out of the abnormal, out of the hypertrophy and perfection of already existent organs. If it is in its unobtrusive state a useful organ, does its efficiency increase with its size? If this is so, is its increase an individual response only, is it ontogenetic; or has it become, at least in its tendency to hypertrophy, a racial or a phylogenetic phenomenon? These are the affinities the subject of tonsillar hypertrophy has to the question of biology most voluminously and vivaciously discussed in current scientific literature.

Before entering upon its evolutionary aspect, a word must be said of its pathology. Tuberculous tonsils are not as a rule the largest of tonsils. On the contrary, they are as a rule the most submerged of tonsils. Dr. Hurd, in my clinic, has been able to predict, by a clinical study of the cases, the positive result of a microscopical examination in over half the tonsils he has sent to the laboratory. Upon this conscious or unconscious selection, this clinical suspicion, I believe depends the current statement of the comparatively high percentage (five per cent. to ten per cent.) of the tuberculous tonsils in the total number. Years before the question arose, I had sectioned and examined microscopically tonsils and adenoids from more than a hundred and twentyfive patients, and had preserved the sections. This had been done for various other purposes of study. Going back over these slides when the question of percentage was raised, now some years ago, I could not find an evidence of tubercle in a single slide. However opinions may differ as to the real percentage of the occurrence of tubercle in tonsils, it does occur, and in a large clinic tubercle in the tonsil may soon be found among those having large cervical glands, frail children for the most part, and small tonsils. On the contrary, the large tonsils of healthy children are globular and projecting, or, to put it as I have heard a clinician put it, large tonsils occur more frequently in robust than in weakly children. Of course, they may and frequently do reach such a size,—they occasionally contain such stinking pits as, after a time, to injure the patient's health. From their size they may really cut off the proper air supply; the irritation of their presence in the fauces may excite constant hyperæmia and paræsthesia, etc., etc., but all these classical symptoms by constant iteration have been much exaggerated, and, notwithstanding much platform oratory, there are a large number of children, especially in the country, who are never inconvenienced in the slightest by moderately projecting discrete faucial and pharyngeal lymphoid hypertrophies.

And now we must enter upon the evolutionary and more general biological aspect of the subject, and this, it may be thought by many, will take us to a remote and perhaps a wearisome distance from a purely medical question; but I hope the introduction of these considerations will not prove altogether unprofitable.

In our large cities a habit of life has now become established for several generations, which essentially has changed the environment of the human animal in respects most likely to effect biological changes. Such changes in the habits of life have been extended widely to children living in the country as well as to those living in town. Like all so called advances of civilization, the use of the furnace has radiated from the city as a germ centre. The present fad for sleeping outside the window is a sort of sanitary reaction. Hot air is usually, but it is not necessarily, foul air. Enough has been said about the latter. Here I wish to refer to the temperature, to the steady high temperature in living apartments. During nine tenths of the twenty-four hours we are subjected to a degree of heat especially high when the outside temperature is especially low. On passing from one side of the door to the other the human animal is now subjected to an experience to which he was all but a stranger a few generations back. It is true man has warmed himself by the fire for many generations, but first one side and then the other. Now for many consecutive hours he dwells in a uniform high temperature. Many successive civilizations have arisen, even in the historical age of the world, the Hindu, the Babylonian, the Ægyptian, the Græco-Roman, the Peruvian, the Mexican, but all have depended directly on the sun for their heat; the chimney was quite an undeveloped structure in all.

Our northern civilization is the first that has dug its heat out of the earth. This performance, little emphasized in the routine histories, of man's past has added, without a doubt, the most important biologically, as it is the most important economically, of the artificial factors to the environment of man. It is true it is but a passing phase in geological time. We are already in sight of the end of it; man must get his future heat supply from falling water, or some other shifting mass of matter, or the future as the past belong to those dwelling nearer the equator; but it has endured long enough to affect the racial heredity of man.

The modern hyperborean man as he leaves his dwelling suffers in winter a drop of some 70 or 80 degrees in the temperature of the surrounding atmosphere and of the inhaled air. Millions of the human race are thus living and adapting themselves racially to conditions hitherto foreign to their environment and foreign today to the environment of barbarous races and of those living in tropical or subtropical countries. In the systems of these large numbers of the race a call is being made upon vasomotor and cellular activities, which we know from what biology is teaching us must meet with some response and with some ontogenetic or phylogenetic adaptation which will allow the organism to respond. Not only is the high equable temperature

all give here the orthodox neo-Darwinian explanation, without, planation possible. An exactly analogous explanation is usually it for the aeration of the bones of the head, resulting in the formation of the accessory masal castities. (American Journal of the Medical Sciences, May, 1992).

for many hours a new experience, but in all probability the sudden change through the wide range of the thermometric scale is still further influential in biological effect. The sensible response to this is frequent, whatever response there may be of which our sensibility fails to take note. That response is usually a congestion and often an inflammation resulting in the hypertrophy of the lymphoid tissue of

Does natural selection or ontogenetic adaptation seize upon this response as an opportunity for the evolution of an organ to protect the young child

from air or food born infection?

Beyond the sporadic experience with the sand of the desert man has only recently been subjected to the modern city dust. It is true he has been subjected, in the swinish overcrowding of former civilizations, to bacterial infection carried from his felfow man by other means than the dust. The result of this-the repeated scourging of mankind by plagues-has brought about, by means of natural selection alone, it is urged, a resistance to such infection not possessed by savage races who have had no such racial experience. Now it must be borne in mind, if we recognize in this phenomenon of racial susceptibility a lower opsonic index or a lower bacteriolytic power in the serum, we must logically find some significance in the fact noted by many observers that these races, black and red, and modern man in the tropics have a markedly lower proportion of children with large tonsils.

Here, then, we may note a coincidence which may be significant between the tendency to enlargement of the tonsils and the natural immunity of civilized man to many infectious diseases, but we will return

to another coincidence later.

In order to emphasize the importance of temperature in shaping the destiny of protoplasm we may call to mind its influence upon that of other living

Experimental biology—like all other experimental work-can only be made useful instead of misleading by the free and unfettered use of the most unsparing criticism and by the constant precaution of the most conservative scepticism in the application of the results attained and the facts demonstrated. In searching out the workings of nature, the laboratory environment of protoplasm is of subsidiary interest and is nowhere more likely to mislead than in the discussion of evolutionary topics. Yet so far as experimental biology has gone, and so far as its testimony may be of value, its most decided positive results have been obtained in showing the effect of temperature upon the physical organization of growing animals. The experiment on butterflies, as carried out by Fischer and confirmed by Morgan, showing the effect upon these insects emerging from the chrysalis state of high and low temperatures, is less open to neo-Darwinian criticism than much of the evidence adduced for the support of the belief in the transmission of acquired characteristics. From the observation of the processes of nature itself the conclusion has been drawn by a neo-Lamarckian that "the wonderful adjustment of critical temperatures to the environment of the species is not to be regarded as evidence of selection—but

it is due to the modification wrought in the protoplasm by the temperature itself. Weismann' indeed ascribes these results, which he also has obtained, to the cumulative influence of the temperature, but his most ingenious theory of germinal selection, which may be easily extended to a chemical conception by calling it molecular selection, aids him in avoiding a neo-Lamarckian conclusion.

However that may be, he seems compelled here to admit that the environment of the temperature in many instances, both in the animal and the plant world, seem to affect the germ cells as well as the somatic cells—a modification of his early views, which, it seems to me, alters his position totally in principle. If such facts have been so evident as to force the arch defender of exclusive natural selection into such a radical change of base, it is reasonable, at least, to suppose that temperature is doing something to man's physical organization. It is not alone in the color of butterflies' wings that the effect of temperature on the germ plasm has been cited. The observations, as I have just intimated, have been far wider than that. For instance, Kammerer, having observed that certain eels reproduce oviparously, i. e., by eggs, in high temperature, viviparously in low temperature, by experimentation on certain salamanders exhibiting the same tendency, he influenced that tendency for three or four generations by the cumulative effects of temperatures on preceding generations. The tendency to vary as to these conditions was present, and doubtless this may be the neo-Darwinian answer, the tendency to vary around a certain mean-but I am not here concerned with this biological war. I only want to suggest that we may be observing something of the same phenomenon in tonsillar hypertrophy, due to the artificial environment of man. Man has thus subjected himself artificially to that agent which has been the most potent of all in the production of cosmic change. For it seems certain that the change in temperature, coincident as it has been with the change in the configuration of the surface of the globe, has been scarcely less influential in the birth and shaping of protoplasm. Upon this broad principle of such universal application, we may be fairly sure, depends the quick response of protoplasm to changes of temperature. This is the price of its survival, the ability to live and reproduce in the frigid temperature of the arctic zone-like some of the mosses-and the ability to exist in the water of boiling springslike some of the bacteria. Yet through this all is retained that tendency of protoplasm to thrive best within comparatively narrow limits of temperature, which Quiton insists was inherited from its birth, and which he has formulated as "the law of original thermal constancy," intimating thereby the immensity of time which it must have taken to impress thus indelibly upon nascent protoplasm this adaptation to the temperature prevailing at its birth. The temperature of the coldest blooded fishes is but a few degrees below that of the hottest blooded birds, and if this is so for such complex and highly

^{*}Experimental Biology.

Davenport: The Principles of Breeding.
Weisman: Festrage when Descendensibeerie. See of Lotton.
1, p. 344; II, pp. 55, 164, 250.
Idiahr for Entered claim general rank for Organism. Described in.

^{1907.} *Reference, Revue intellectuel, January 1, 908

adapted organisms, the survival of naked protoplasm must have been confined to an environment of a very narrow range of temperature, but for an extent of time that defies computation. This oscillation between the narrow limits of life and death at its birth, the first panting of the complex molecule we call "life," by the constant weeding process of almost infinite time has extended until now it has its supreme illustration of survival within wide limits in the range of man alone from the tropics to the pole.

Such an influence of change, applied even for only two or three generations, might result in a sensible thinning out by natural selection of the inept, or by a sensible adaptation of the germ plasm. Applied more universally and more continuously to the infant or adolescent animal, it is brought to bear on millions in a way and at a time which renders it an ideal experiment in biology.

While I have alluded to the fact that tonsils, which clinically we would call enlarged beyond the normal, may throughout adolescence exist in the throat without injury to the organism, it remains to show the affinity this observation has to the facts pointed out by Baldwin, Jennings, and others, from which they have constructed their theory of organic selection. Numerous characteristics of living things are supposed to arise from the tendency of protoplasm to vary in many ways, which have, under many conditions of environment, no survival value,° that is, they tell neither for nor against the survival of the race with sufficient force to influence individual selection. When the environment changes, such variations always become racially more numerous. At the same time, when such environmental change occurs natural selection needs a new base from which to work, and finds it broadened in this broadening of the field of variation from which to select. Change in the habits of man brought about by the forces of civilization may be supposed to increase the frequency of tonsillar enlargement, and it certainly increases the amount of bacteria laden dust. The absorption of these from the pits on the surface of tonsils where drainage and inspiration have carried them, where they have lodged from passing food, is increased, and the inner organs of defense make a larger demand on the outer organs of defense for protection. The more bacteria there are on the surface the greater number there are absorbed, unless a lining epithelial or subepithelial tissue is so evolved as to limit the number to the capabilities of the bacterolytic power of the inner organism.10 In other papers I have attempted to show that the epithelium of the tonsillar crypt, or the lymphoid tissue contiguous to it, exercises differentiation between bacteria and dust, and that during differing conditions of the system we have evidence of differing degrees of per-

meability of this tissue in its relation to the bacteria of the tonsillar crypt. Is it possible, I repeat, that natural selection or individual adaptation has not seized upon this variation for evolution?

The clue of a connection which may exist between the hypertrophy and the efficiency of the organ as a bacterial filter possibly may be found in the observation of Dr. Hurd and others that the small submerged tonsil is the tonsil of infection, and the large discrete tonsil is the tonsil of health.

But whether from the facts the inference is warranted that such hypertrophy is ever beneficial, whether it is an index of efficiency, or whether the efficiency of the organ may not be increased without such hypertrophy, are questions which for the lack of more direct testimony must depend on side lights derived from other biological facts. The regulation in the size of such an organ in the process of evolution would be governed by the same laws of symbiosis which arrange the equilibrium existing in all living things. The price of its existence at all is that it renders as much or more help to the organism, as a whole, than it does of harm. Other structures, other activities, such as I have instanced in the defensive reactions of the serum, must also be rearranged in heredity. To shut out more oxygen than is gained in any hæmatapoietic function it may have, like the spleen or the bone marrow, would mean its recession in size. The filtering index remaining the same, and there being the same index of bacteriolysis, a deepening of the pits, affording a larger lodging space for pathogenic bacteria, would result in destruction. Thus by natural selection there would be a tendency for the pits to grow shallower, for the tonsils to disappear. Whatever else is happening, it is not this. The pits are deepening, and yet man is surviving. This survival must then be due to a change in the filtering or bacteriolytic index, or both. In former papers I have tried to show it is not exclusively due to the internal agencies of immunity. Nasal catarrh, by increasing the drip from the nose into the pharynx, increases the number of germs carried into the tonsillar lacunæ. The coincidence of large tonsils, the deepening of their folds, and chronic rhinitis is a well known clinical phenomenon.

The pits of the tonsils, for as folds they exist to some extent in all human infants, may indeed be cesspools, but from the argument thus far they must inevitably be also more or less impermeable retorts. They are retorts in which the germs are either destroyed, or modified so they may live at peace with their host, or they are allowed to pass through only in such numbers as can be dealt with by internal processes without the destruction of the host.

Any one who may have had the patience to follow me thus far, in this paper and in others," will understand that the mechanism which evolution has thus affected I ascribe to the existence of that layer of electricity which exists on the surface of all colloid bodies and which we call "surface tension," and its reciprocal reactions with contiguous heterogeneous colloid and inert bodies. In the same way it

both of the first beautiful to the condition of the first beautiful to the first beautiful

disease. The tonsillar crypts do this with a distinction and a discrimination impossible for a nonliving membrane, letting the bacteria

¹¹The Equilibrium between Infection and Immunity, etc., Medical

Varies Equation of Dust from that of Bacteria in the Difference in the Behavior of Dust from that of Bacteria in the Difference in classiff view both Week, all Journal January 6, 1990. The Physical Processes of Immunity and Infection, Toldem, February, March, April, 1997.

will be understood why that process seems to be so highly developed in the region of the pharvngeal lymphoid ring. That is the spot on which first impinges the unmodified pathogenic germ from man's external environment. Excluded from the internal organism and kept on the move, by the time the pathogenic germs reach the absorbing surface of the intestines, if they have not been destroyed, much has been done to render them harmless, and they may pass through in larger numbers without causing the death of their host. As a matter of fact there is much evidence to show, and here the evidence is all but conclusive, that the intestinal epithelium sharply distinguished between nutritious prepared albumen and harmful protoplasm.

For years we have been familiar with the fact that healthy people carry about with them in their mouths pathogenic microorganisms. In the intestines the same thing has been observed for the tvphoid bacillus and the cholera vibrio, even when the bearers of them have never had, or have not had for years, the diseases they cause in others. Such persons have been shown to have in their blood serum, in the cases examined, such an abundance of the specific antibodies that the presumption was entertained that the reaction to the bacteria in the intestinal canal supplied these bodies for absorption, but it seems to me more justifiable to conclude that these bacteria are allowed to pass in such numbers through the intestinal epithelium as to keep up an autoinoculation-for this is more in accord with other facts.

From various clinical facts, to some of which I have alluded, it seems likely it is the small sunken, ragged tonsil, and not the large tonsil, which lets through the dangerous germ. Whether it is a septic or a tuberculous germ, the lymph nodes below swell up as a result of a local or systemic reaction, which seems calculated to retard the passage of the germ to the vena cava. Increase in size of the cervical lymph nodes can hardly be accepted as evidence of an increase in the filtering efficiency of their lymphoid structure without ascribing as much or more to the lymphoid structure of the tonsil and its coverings. The surgeon knows how much the absorption of cocaine is retarded on the inflamed surface. Swelling of the tonsil, then, appears to some extent as a closing of the gate in acute conditions. Chronic enlargement seems clinically a sequence, but may it not be regarded physiologically as a continuation of the reaction? Does it not seem, keeping in mind the blind sort of way protoplasm varies, that it is an awkward move to keep the gate partly closed? It is certainly awkward, for it deepens the pits and narrows the air and food way; but then, protoplasm has had no university education in physiology. No modern laryngologist has ever made her understand that really she should not act in that way.

In childhood the susceptibility of the internal structures and fluids, the resisting power exerted against bacterial disease, is at a low point. Young frogs, those caught in the spring, are known when injected to be much more susceptible of systemic infection.12 This is the universal testimony, not only in biology but in clinical experience and in general observation, for all animal life. Calmette and Guerin'

point out that it is the lymphoid structures which attempt to supply this deficiency. The younger the animals (guinea pigs, etc.) were in their experiments, the more efficient was the ganglionic filtering of the injected tubercle bacillus, allowing time apparently for a more general phagocytosis than in older animals. This means a modification of the tension on the surfaces of bacillus and leucocyte. This coincides with the argument here advanced as to the function of the tonsils in childhood. Here, at least, we may believe the experimental evidence has the support of that supplied from nature by clinical observation.

It has been noted " that certain starfishes occasionally have one of their parts infected by a parasite. Finally a process of "autotomie" is set up whereby the affected part is self amputated. This part being, however, a necessary and integral part of the organism, is subsequently regenerated. This

has a two fold interest for us.

First.—The shedding of a part after it has become useless and a menace to the organism in general, like the action of sloughing, has its analogue in the process which I have described as autoclasis of the tonsil.15 Of course, this shrinkage of the tonsil, as adolescence passes into mature life, is probably chiefly a process of phagocytosis, a devouring of the leucocytes by the macrophages, the autoclasis being an auxiliary process. This has its counterpart in the shrinkage of the thymus gland and the other appurtenances of embryonic life, and the disappearance of the tadpole's tail when its life becomes to a large extent terrestrial.

Second.—Neither the young frog nor the infant regenerate their shrunken parts, nor, as a rule, do the tonsils grow again in adolescence after being removed either automatically or by operation. In the infant, however, in the child younger than four, clinical experience teaches that in quite a proportion of cases, recurrence of the hypertrophy takes place. It is difficult to look upon this performance of the human organism in any other light than we look upon the performance of the starfish's restitution af-

ter "autotomie." They need them.

In what I have written here I do not wish to be misunderstood. I do not wish positively to assert that the enlargements of the tonsils are always a protective physiological act of the organism. Neither do I wish to deny they are frequently, or even usually in adolescence, solely a menace when diseased. I simply have endeavored to gather some evidence from the fields of pathology and of clinical observation as well as from the broader field of general biology, suggestive of a place their enlargement possibly may occupy among the phenomena of organic evolution. Nevertheless, whatever may be the conclusions as to their marked enlargement, the knowledge derived from all these sources and the experimental evidence, which I have elsewhere adduced, unite in pointing to the function of the tonsils as one of defense against infection. The tendency to enlargement seems a persistence of the process by which the function was evolved.

Annales de l'Institut Pasteur, xx. No. 5. May 25. 1007
 Dr. L. Laloy: Parasitisme et mutualisme dans la nature, 1906
 The Laryngoscope, 1904.

⁴⁴ WEST FORTY-NINTH STREET.

¹² Arnold: Virchow's Archiv., clxiii, p. 7.

CONFESSIONS OF A YEOMAN PROSTATEC-

By Joseph Rilus Eastman, M. D.,

At the last meeting of the American Urological Association Dr. Granville McGowan, of Los Angeles, said of prostatectomy that "the difficulties of the operation have been so minimized, the benefits in many cases so magnified, and imperfect results so glossed over or concealed by writers of known operative skill, that many who have only a very uncertain idea of the anatomy of the urogenital organs are emboldened to commence operations which they never finish, and the necessity for which is often only problematical. So much bad work of this nature is being done that this very beneficent operation may easily fall into disrepute.'

A man about to undergo prostatectomy manifestly places his life in the hands of the surgeon who operates upon him. The author of the method employed contributes somewhat to the result, but in no such degree as the operator in the individual case. Any operator is absurd who lays the blame for his failures and disappointments upon faulty methods without assuming the lion's share of culpability for his lack of judgment and skill and his clumsiness as an executant.

As we stand marveling at the machinelike technique of Young, and Mayo, and Freyer, among other impressions which we chronicle is the one that the methods which bear the names of these men are theirs, indeed, and no one's else in the same sense. Their records pertain less to their methods

than to themselves and their genius.

Gask sews up the wound in the bladder after suprapubic prostatectomy, depending only upon a catheter drain, and Freyer leaves in a tube large enough to remind one of a steamboat funnel, laying the utmost stress upon the ample drain. Each has amazingly good results, yet each condemns the other's plan. Gask takes plenty of time and Freyer operates by the split second watch. The man is more important than his method.

How well even the unskilled realize that, with increasing experience and increasing devotion, come sounder judgment and increased precision of technique, and, therefore, better results.

This quickly explains why one surgeon has lost of twenty-six patients treated by prostatectomy more than fifteen per cent. It explains his fistulæ, perineal and urethrorectal, and protracted periods of convalescence, as it explains loss of sexual power and incontinence.

There are some events, however, which it does

not explain.

Like many others, I have found it difficult before operation to distinguish between benign and malignant enlargements of the prostate gland. Albarran and Halle, in a series of one hundred cases of supposed benign prostatic hypertrophy, found carcinoma, as has been frequently quoted, in fourteen cases. This percentage of malignant enlargements seems rather high, yet C. H. Mayo found in two hundred and ninety-one cases of prostatic over-growth twenty-six implications by carcinoma, or

almost nine per cent. Mayo had twenty-eight

There is no doubt that some men of great experience have the acumen necessary to determine quite definitely before operation the character of a prostatic enlargement, a faculty quite beyond me and many of my colleagues, and I realize that they cannot if they would share with us that fine judgment and art which comes only out of an experience remarkable both for its length and its fibre.

In my own short experience I have had a death from prostatic carcinoma, there having been in evidence only a smooth, round projection into the bladder, involving the posterior median commissure, and I have advised a man with a bossed and nodulated prostate and cachexia to be operated upon for carcinoma, and he recovered completely without

operation.

The most accomplished prostatectomist in the world makes the statement that the general recognition of the increasing frequency of carcinoma of the prostate renders it imperative that early diagnosis and radical operations be made. During the past four years he says there has appeared in his own practice one case of cancer to every four cases

of hypertrophy of the prostate.

Hawley (Annals of Surgery, June, 1904) mentions Engelbach, Burkhardt, Craison, Harrison, Green, Brooks, Belfield, von Frisch, and many other writers who have spoken more or less recently of the unappreciated relative frequency of carcinoma of the prostate. Writers, old and new, have called attention to the rather frequent association of hypertrophy with cancer, and although Powers (Annals of Surgery, January, 1908) could find record of but twenty-nine cases of sarcoma of the prostate, and whereas, no doubt, sarcoma is rare in the prostate, nevertheless malignant disease, generally speaking, is common. Labadie and Harrison have remarked, as has Hawley in support of them, that carcinoma of the prostate is far more common than we have been led to think.

The surgeon who does not systematically submit his extirpated prostates to a competent pathologist for microscopic examination cannot know what he has removed. It is now well known that many so called hypertrophied prostates, exhibited as such in collections, have been found to be cancerous. The lymph glands may not be involved and there may

be no distinguishing symptom.

Dr. Mayo, in his whole list of prostatectomies, lost twenty-eight. All but two of the fatal cases were cancerous, from which it will be seen that Dr. Mayo's record is best of all, unless, perhaps, others like himself have included all cases as they met them, cancerous or not, as prostatectomies. can learn nothing from statistics as to the comparative value of methods unless all the facts are clear. The comparatively inexperienced are misled by ambiguous reports.

A series of one hundred cases of prostatic enlargement without a single case of carcinoma would represent a remarkable series, indeed. Therefore, not to expect some failures in such a series is folly. No one will wish to refute this statement. Yet there are those who inadvertently leave the impresragase of 19001)

sion that, with the best present knowledge and skill, a series of one hundred successive successful prostatectomies may be attained. Is it not fair to say that the most trusted authorities often carelessly fail to make clear that their lists of successful prostatectomies do not concern carcinoma, for the patients with carcinoma die more or less promptly, and it is fair to assume that success means permanent relief?

Should not one giving results in the form of statistics make clear whether the term prostatectomy is taken to mean the removal of only benign so called hypertrophied prostates or the removal of all prostates, ad seriatim, for any cause, according to

the interpretation of Charles Mayo?

Are we not comparing incomparable things? Should there not also be a clearer understanding as to what constitutes death from prostatectomy in cases complicated with serious lesions beyond the

prostate?

Dr. Bryan, of Richmond, makes, I think, a representative presentation when he says that, "Were the prostate the only cause of the patient's condition, it could be speedily remedied, but those conditions which have been going hand in hand with the enlarging prostate have also been undergoing a pathological metamorphosis. Surgery cannot rectify in as many minutes conditions which have taken years to obtain. The bladder wall, the ureters, the pelvis and kidney substance, the heart, the arteries, the general anæmia, depletion, and urosepsis, incident to damming back of waste products destined for excretion, and not for systemic absorption, are also to be reckoned with and cautiously weighed. . . . In the normal man, perineal prostatectomy is nothing more than a deeper dissection of an external urethrotomy and should be attended with no more risk; but a prostatectomy is never performed in a healthy subject. It is essentially a disease of advanced life, senile changes, contracted kidney, and atheromatous arteries-pathological states which call for the physician's advice aside from any operative procedure. . . . The anæsthetic, the shock (primary and delayed), hæmorrhage, congestion of the kidney, uræmia, pulmonary œdema, embolism, lowered index of repair, and other less frequent complications and sequelæ, are sufficient to pronounce the operation of severe character, attended with more than ordinary risk, but, of course, with brilliant results in selected cases.

There is little doubt that renal infection is best treated by good bladder drainage, but should we, whose experience in prostatectomy scarcely surpasses the score, subscribe to the unqualified statement that such drainage is best obtained by removal of the prostate through the perinæum? Mechanically, this gives the best drainage, but is it always wise to take the risk attending prostatectomy in order to provide drainage which can be had with

so much less hazard?

One excellent authority states that he rarely finds preliminary drainage necessary, but elsewhere remarks that prostatectomy is undertaken in cases of renal infection and other complications if the patient has not improved on preliminary treatment, as catheter drainage. I have seen a man vomit himself to death after prostatectomy who, I believe,

might have been saved by efficient preliminary drainage.

The surgeon who does not select his cases, excluding some from operation, must, in the very nature of the elementary propositions of pathology, some time lose one from uræmia.

The enlarged prostate and inflamed bladder militate against exact diagnosis of the kidney compli-

cation.

The intense suffering attending a violent cystitis and renal infection will determine the patient's choice in favor of operation despite the great risk in nearly every case, and the surgeon who would refuse to operate in such a case is worse than a manipulator of statistics, and yet, in view of established principles of pathology and prognosis pertinent in such cases, I cannot understand how death is averted by others. In my relatively short career, two patients have died from uræmia and after operations in which I thought I had in a reasonable measure mastered the principles of technique of those who avert death from this cause.

The moral stands forth that the only efficient means of preventing cystitis and renal infection as a complication is so to establish prostatectomy in the esteem of physicians and laity that it will be accepted readily as the only useful method of treatment when catheter life would otherwise begin. This statement, made in 1904 by Moore, of Minneapolis, true then and truer now, in view of perfection of technique, should be the motto and maxim of every

prostatectomist.

I am unable to minimize the dangers of prostatectomy and its seriousness to the degree of forgetting the large element of safety provided by preliminary cystostomy, the prostatectomy in two stages recom-

mended by Chetwood and Summers.

The published reports of the most trusted authorities say precious little of draining first. Many of us are called into the country at night to "a Prostatiker" with acute retention, whose prostatic urethra has almost certainly been brutely traumatized and perhaps infected by efforts at catheterization. Such cases must be first drained. Freyer often drains first. Young's last report is silent upon this point.

It is unreasonable to expect preservation of the sexual or procreative power after Freyer's operation. Freyer has quite given up this contention. Being asked by the writer whether he professed to preserve normal sexual power after his operation, Freyer made the significant reply: "Not any more." It will be remembered that Freyer states that he divides the urethra behind the opening of the ejaculatory ducts. The verumontanum and sinus pocularis are visible, however, in his specimens at the Royal Museum.

Eldred Corner, of St. Thomas's Hospital, who, like everybody else in England, makes practically the same operation that Freyer calls his own, and who lost only one patient in his first twenty-five cases, sees small chance of saving the ducts in the complete English suprapubic operation. Freyer does not expect it now. He now defines success as meaning that the patient regains the power of retaining and passing the urine without the aid of a

Young's operation done by himself offers the

best chance of preservation of the reproductive ap-

I imagine, however, that others of small experience like myself have often in performing Young's operation so traumatized the pubic vessels and nerves and muscles as to preclude the reappearance of sexual strength after the perineal prostatectomy.

Mayo's operation, which, as done by Mayo himself, is attended by the minimum of trauma to the perineal vessels, nerves, and muscles, cannot be done, it seems to me, by an ordinary man without incidental tearing of the ejaculatory ducts.

Perhaps when we have learned to do a Young's operation quite properly we can eliminate the danger to the ducts, as well as to the vessels, nerves,

and muscles.

To one who has had fistulæ galore, the suprapubic operation of Fuller and Freyer appeals as it cannot to those who have been more fortunate or more skillful. Mr. Rawlings, of Guy's Hospital, says fistulæ are unknown in England. Freyer says

he never had one.

If Young has been ingenious enough to avoid fistulæ by precisely bringing together the edges of the levatores ani and prompt removal of the gauze and drain on the second day, still it can hardly be denied that the puncturing of the prostatic sheath or vesicorectal fascia will, in the experience of most men, be accompanied by some likelihood of fistulæ formation. This danger must, in the nature of things, be slighter when, as in the suprapubic operation, the gland is lifted off the fascia instead of being pulled down through it.

McClaren and Mayo and all those who reach up through the prostatic urethra and enucleate the prostate through the mucous surface, can theoretically and practically excochleate the gland with very slight or no injury to the vesicorectal fascia. Perhaps this factor accounts in some measure for the rarity of fistulæ after the intraurethral attack.

Concerning dribbling of urine after prostatectomy, Fuller, quoted by Porter, says that in four hundred cases he has had but one instance of permanent dribbling, and in that case the dribbling oc-

curred only on exertion.

So skillful and experienced a man as Fuller can, doubtless, turn out the prostate with no injury to the sphincter muscles or the nerves controlling them, but I believe that when the truth is known of the results of the average genitourinary surgeon, and I judge largely by my own disagreeable experiences, it will appear that dribbling after prostatectomy, varying from slight transitory dribbling to complete incompetence, presents itself in a considerable percentage of cases. After all of my first ten prostatectomies the patients dribbled somewhat.

I have observed prolonged dribbling several times after forcible dilatation of the prostatic urethra for stricture, and certainly it may be expected to follow

prostatectomy occasionally.

Leakage due to the leaving of lobules at the urethral orifice and to injury of the sphincters has appeared repeatedly in my commonplace record. I trust that by approaching the prostate back of the bulb and triangular ligament I may do less damage in the future. However, like McGowan, the bad realts which I have seen have not always been attributable to my own inexperience. At least a score of men wearing urinals after prostatectomy done by the most distinguished and most skillful of operators have drifted back to me. If it befits the experience of one man to say that enuresis after prostatectomy is a bugaboo and myth, it cannot be applied to the experience of many. The man with the urinal stalks about, a very present admonition for more careful treatment of the sphincters, and more precise and thorough removal of nodules about them.

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This is a matter to which we may with profit address our interested endeavor, for out of my own unfortunate experience I know that a careful but relatively inexperienced operator may easily tear through that portion of the external sphincter just below the urethra and in front of the third lobe, an accident very likely to be followed by incon-

With proper care on the part of operator and assistants, it should be possible to avoid injury to the rectum, but notwithstanding excellent authority to the contrary, I submit that in the hands of the ordinary man this accident cannot be excluded. It is my observation that injury to the rectum occurs not usually, as has been stated, because a retracter blade has been pushed through it, but rather because of too great lateral traction by too powerful pulling on the retracters, as the result of which the rectum is split. As Moore has said, none but an experienced and trustworthy assistant should be allowed to hold the retracters. We who are obliged to operate in country homes and are compelled by professional amenities and absurd interpretations of ethics to allow the family physician to assist, have usually the greatest sense of security when such an assistant is placed at the distal end of a long handled retracter, but in prostatectomy he is by no means innocuous in this relation, as I have found to my sorrow. Such an accident will almost never occur in a modern operating room, with a well trained operating corps, but I would take my oath that they do occur in farmhouses in Indiana.

The tearing of the rectum is perhaps not a disastrous event, but it is always an annoying complication, and often a serious one.

Several years ago Watson, of Boston, speaking of prostatectomy, said that we are justified in saying that patients should be given the benefit of it at a much earlier stage of the malady than it has been customary to apply it, and that where it is applied by those skilled in its performance, as soon as the hypertrophy can be clearly detected by examination, and if at the same time it is already giving rise to well marked symptoms, and the patient's condition is not unfavorable to the performance of an operation of this magnitude, the mortality of the operations, were they applied at that time, will be a trifling one, and their risks not nearly so great as those entailed by the use of the catheter, assuming the latter to have been employed instead and under the same conditions.

Operative treatment has now reached the status at which we are justified in saying that all cases of prostatic hypertrophy should be treated by prostatectomy, partial or complete, as soon as it has begun to preduce annoving symptoms. It is important

that we should not wait until the last word has been said upon technique before we unanimously and with emphasis plead for early operation in this as in other painful and fatal maladies. When the profession generally appreciates the importance of early prostatectomy, before serious complications have developed, then the prostatectomist of average skill, the yeoman, may be able to approach more nearly to the standards of the masters.

331 NORTH DELAWARE STREET.

REAL CONSERVATISM IN THE TREATMENT OF THE PROSTATIC.*

By G. Morgan Muren, M. D., Brooklyn, N. Y.,

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In the many papers upon senile hypertrophy of the prostate gland and the train of symptoms due to this common condition that have appeared during the past few years, two points must be apparent to the careful student of this very voluminous literature: First: The writer's remarkably good results. particularly as regards mortality. Second: The cases reported are almost always "selected."

In these reports much attention is given to technique, and the credit for the good results attained is usually given to the rapid and easy method of operation as described by the authors. Most men have a decided preference for one of the two routes of removal and seem ready to believe that poor results are frequently obtained by other surgeons because the opposite route to their own has been selected.

As I have stated in a previous paper, I am positively in favor of the removal of the gland whenever

the patient's condition justifies the risk.

The surgeon who advises an elderly man, about to begin catheter life, that this method of relief may be continued and operation postponed until a more positive obstruction is present, is a poor counselor.

The man advanced in years, who finds increasing difficulty in emptying his bladder, due to an enlarged prostate, and is finally unable to relieve himself except by catheter, should be operated upon at once and not allowed to continue catheter life at all. This opinion, I believe, is shared by most genitourinary surgeons. The cases in which I believe operation should be postponed, for a while at least, will be considered later.

Regarding the two points noted in most prostatic literature, "low mortality rate," and "selected cases," I confess great wonder at the results obtained by some men and grave doubt of the truthfulness of other writers, when I consider the cases that I have personally noted and the poor results so often obtained

We must of course "select" suitable cases for opration, but too little consideration has been given in he literature and in practice to those unfortunates who cannot be counted in this elect class.

It has been my privilege to observe the work of everal other men and to follow their cases after operation, through convalescence or until the death

Personally I have operated upon nearly one hundred patients, using the various methods of operation and the several tractors, forceps, etc., and have treated and observed in consultation a much larger number. These facts are mentioned as some justification for my ideas upon the treatment of these cases, as I know they are somewhat opposed to those held by many competent genitourinary surgeons, whose usual practice is the removal of the prostate. Admitting, then, that the fortunate individual who may be classed as a "selected" case be operated upon early in catheter life, or before it has been really commenced, what shall we do for the "unselected," who suffers severely and clamors with his family for some relief?

In a number of these cases where great infirmity, crippled kidneys and heart, contraindicate the immediate removal of the gland, the "two stage" operation may be well borne. By this is meant the preliminary drainage of the bladder, and later, when the patient has sufficiently improved, the complete

removal of the gland.

This preliminary drainage done with local anæsthesia affords almost immediate relief in many cases, from the urgent symptoms. Several days or a week later, the urine improving and the patient having had a number of quiet nights' rest with freedom from the constant calls to urinate, comes to the radical operation in greatly improved condition to stand the severe shock that is suffered by practically all old men who undergo these operations.

Until recently it has been my practice to drain these cases by the perineal route and later to remove the gland in the same way. Recently I have been draining suprapubically, as it seems to be a more rapid method, the abdominal tube disturbs the patient less, and if later there is not sufficient improvement to warrant prostatectomy the suprapubic fis-

tula may be made permanent.

In the literature of this subject we occasionally come across a paper on the "nonoperative treatment of the prostate." Rarely are these articles by men of any large experience in bladder and prostatic surgery, and most of us, I feel sure, have come to believe that there can be little or no change produced in the senile gland, and that the radical operation is the only means we have of removing the obstruction to the outflow of urine from the bladder. There can be no disagreement with this opinion except in one class of cases; in this class, in addition to the chronic enlargement and distortion, which we cannot hope to overcome by any internal medication or other treatment, there is, I am sure, an acute congestion and inflammation with an additional enlargement of the gland, which is the immediate cause of the retention for which these patients seek relief.

In these cases the old men have suffered practically no urinary disturbance until the acute condition produces total retention. Shall we operate upon these patients at once? I am sure that we should not. Two recent cases of my own will illustrate

that operation is not always indicated.

CASE I.—The first patient was seen last fall with Dr. A. E. Gilmartin, of Brooklyn. The patient was seventy-three years

^{*}Read before the American Urological Association, No. Yes, safety, May, 1918.

old and had noticed slight bladder irritation for about a year, rising twice each night to urinate. Suddenly, from no apparent cause, he had complete retention, relieved for several days by catheter, followed by a period of great irritability of the bladder, during which I saw him. His residual urine was about 40 c.c., and his bladder capacity 200 c.c. His prostate was much enlarged and quite hard. His general health was and always had been excellent. I advised the two stage prostatectomy by the perineal route, and this being refused by the patient and his family, bladder washings and the use of urotropin were continued by Dr. Gilmartin. To my surprise, in the course of several weeks Dr. Gilmartin informed me that the patient was able to void urine, had almost no residual, and was up and

Case II.—The second case was referred to my service at the Williamsburg Hospital during the past winter for operation by Dr. Gilmartin. The patient was sixty-nine years old, a vigorous young-old man, had suffered from total retention for several days, and had been rather roughly handled before consulting Dr. Gilmartin. He was willing to have the prostate removed, but stated that he had a large family and was anxious to return to work. On this account he was kept under observation for a week, at the end of which time the gland somewhat decreased in size and he again voided urine. He soon left the hospital and has not since reported, as he was instructed to do, but Dr. Gilmartin informs me that he is in good condition.

If these two cases had been subjected to the radical operation who can say what the mortality would have been? Now they are in no worse condition than before the acute retention. Later, if their symptoms indicate it, more radical treatment can be considered. At least the patients are alive and at the time of writing this paper are both in good condition.

Unselected Cases.—There are several classes of cases in which there is every reason not to attack the prostate, and yet these patients are subjected to the radical operation with little or no improvement in their condition if they live, and frequently their deaths are greatly hastened. An old, broken down prostatic who has had little or no treatment before admission to the hospital may, after a week or ten days' careful attention, show such marked improvement as to be fit for operation. There is a large number, however, so fragile and worn out that any attempt to remove the gland must prove fatal.

In these cases I believe permanent suprapuble drainage is the treatment indicated. It is a curious fact that little mention of this method of relieving the prostatic can be found in the literature. And the only textbook author that gives it careful consideration is Deaver (1), who has this to say of it: "Cystotomy for enlargement of the prostate is a very valuable operation, not lightly to be discarded; it is a step between catheterism and prostatectomy."

The very occasional resort to this method is due, no doubt, in a large measure, to the difficulty in controlling the bladder and the more or less constant wetting of the clothes, in spite of the several obturators and permanent drains that have been devised.

Preference is given to the suprapuble method of drainage as there is less subsequent dribbling than be the permeal, be disconfert from the tube or obturator, no added irritation to the inflamed vesical neal and the mercer of the bladder can be explored at the time of operation.

Local and the date all that is needed, and in urgert face I have opened the bladder without moving the patient from his bed.

The encrateer need no description before this

society except to note that the skin incision should be rather high, the one in the bladder low. The large drainage tube is left in the bladder three or four days, and after its removal the wound "glazes" over and heals rapidly, the opening rarely showing any tendency to close if the obstruction below is complete.

When the wound is healed some form of obturator or permanent drain is usually needed. McGuire's obturator I have tried, but it produced considerable discomfort. Senn's sigmoid tube I have never used.

My own apparatus, by no means perfect, is much like Stevenson's. I have found it necessary to have one made for each case, as the fistulæ are rarely alike in any two patients.

Cases are occasionally met with where no obturator or tube is required, of which the following is an example:

CASE III.—H. E. W., farmer, aged fifty-nine years. I saw him through the courtesy of Dr. W. H. Ross, of Brentwood, Long Island, in February, 1906. For the two previous weeks he had almost complete retention. His lower extremities, hands, and penis were markedly edematous. His heart irritable and irregular, though no organic lesion could be detected.

Two efforts at general anæsthesia, with the idea of re moving the prostate, had to be discontinued, as the patient nearly died from the effects of the ether. Permanent suprapubic drainage was done, and after the wound had healed the patient could sit in a chair for two hours and then void the urine comfortably by lying on his side. At night he also had very good control.

Another case, seen through the courtesy of Dr. F. J. J. Wood, of Brooklyn, in October, 1907, illustrates how a prostate acutely inflamed and enlarged in addition to a chronic hypertrophy, the patient having complete retention, may, with rest and drainage, recover from the acute condition and urine again be voided.

Case IV.—This patient was sixty-two years old, and at the time I saw him passed no urine except by catheter. He suffered from a severe cardiac asthma and had the appearance of a man of seventy-five. Suprapubic permanent drainage was suggested, as a general anæsthetic could not be considered, and was agreed to by the patient and his family. About six weeks after the operation he voided urine naturally and has done so ever since. Dr. Wood tells me that he has perhaps an ounce of residual urine. The suprapubic fistula closed.

In those cases of prostatic obstruction with marked contraction of the bladder, if the gland is of the large variety, its removal undoubtedly produces a more roomy bladder. On the other hand, the removal of the very small, hard gland does little for the patient whose main trouble is his contracted bladder. A number of cases have been referred to me for some trouble of the bladder or prostate, the necessity for the removal of the gland being frequently suggested by the physician referring the Upon investigation the supposed obstruction is not found, the patient, frequently a man in middle life, having an enormous amount of residual urine, due to the loss of the bladder reflex from beginning locomotor ataxia. As the bladder reflex is frequently the first one to be lost in this disease, we should be constantly on our guard against surgical meddling with these cases.

I cannot close without saying just a word upon the routine use of the cystoscope in cases of enlarged prostate. When there is any doubt of the diagnosis, a suggestion of a new growth in the bladder, or stone that cannot be detected by the searcher, then it may be proper to use it. I believe, however, that many prostatics are subjected to needless pain and discomfort by the over enthusiastic cystoscopist.

REFERENCES.

1. John B. Deaver. Enlargement of the Prostate, Its Diagnosis and Treatment, 1905, p. 168.

38 ORANGE STREET.

ANTERIOR POLIOMYELITIS.*

By Irving D. Steinhardt, M. D., New York,

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Anterior poliomyelitis is an acute infectious disease and is sometimes known as infantile paralysis or atrophic spinal paralysis. It is also known under several other names, but I merely mention here the most common ones.

As to occurrence, I might mention that from 1890 to 1899 there were treated at the Hospital for the Ruptured and Crippled, in New York, a total of nineteen hundred cases, which makes an average of over two hundred new cases a year at this hospital alone.

Ætiology.—There is nothing definite known about the ætiology of this disease, although many theories have been advanced as to its predisposing cause, among which might be mentioned the following: Exposure to extreme heat, or cold, or dampness, or sudden change from the former condition to one or both of the two latter ones, causing a chilling of the body, and thereby rendering it more liable to the acute infection of this disease. Overfatigue is also offered as a predisposing cause, but for the reason that the overfatigued child is liable to seek rest in the first spot offered, which is very likely to be the more or less damp ground, and it will also bring about an abrupt change of temperature by copious draughts of cold water. Some observers assert that this disease is very apt to follow the various contagious diseases, but this is probably true only so far as these diseases lower the normal bodily resistance to invasion by destructive forces. Traumatism has also been mentioned as a factor. Ofttimes a child in apparent perfect health is affected. Boys seem to be affected more than do girls, and the negro race very much less than the white one. One attack seems to protect. Some observers have noted several cases in the same family. Children are most susceptible to the disease, which may occur any time during childhood, although most likely to occur during the first three years of life. Out of six hundred cases collected by Starr from his own records and those of several other observers, seventy-five per cent. occurred in the first three years of life, and of this seventy-five per cent. over half occurred during the second year. The actual exciting cause is unknown, but some very acute infection is to be regarded as the cause of the intense inflammation that is responsible for the destructive lesion in the cord. The disease, which is usually met with between late May and early October, may occur in isolated cases or in epidemic form. Such an epidemic occurred in New York and vicinity about a year ago, and is now the subject of a special investigation by a committee appointed for that purpose. I sincerely hope that their investigations will be very fruitful of results for the medical profession at large and therefore for our patients.

Pathology.—The primary pathological changes are in the spinal cord, and as these cases rarely die during or immediately after an acute attack, autopsies showing them are rare. The pathology of the disease, as I will give it here, is a composite picture drawn from the writings of several authorities. It is an acute inflammatory process of the area of grey matter of the anterior cornua supplied by the anterior spinal arteries. In the acute febrile form, which is from seventy-five to eighty-five per cent. of all the cases, actual inflammation is present, as is shown by the congestion, exudation of leucocytes, and serum into the perivascular and nerve cell spaces and proliferation of the neuroglia. In the others, the exciting cause is supposed to be a hæmorrhage or a thrombosis. Both the neuroglia and the cells are involved, and the result is a degeneration, pigmentation, and atrophy of the ganglion cells, and a corresponding increase of the connective tissue of the anterior cornua and of the adjacent. white matter, often with destruction of considerable portions of the horns, atrophy of the anterior roots, and distortion of the cord. In the early stage the motor cells become cloudy in appearance and later are swollen and lose their distinct outlines. Destructive changes affecting both cell and neuroglia take place. The grey matter shrinks, and the nerve fibres atrophy. This causes the spinal cord to become smaller at the seat of the disease, which is most common in the 'cervical and lumbar enlargements. With their nerve centres destroyed, the affected muscles lose their power and activity; and with the nerve fibres which have to do with the blood circulation in them also affected, and therefore their nourishment also destroyed, rapid atrophy takes place. Both of these facts are related in this atrophy which takes place. Very soon after the primary attacks, contractions and distortions take place in the affected parts, and the normal growth is markedly interfered with and retarded. In another set of cases, instead of a shrinkage and atrophy of the horns, there is found a gelatinous condition of the horns, they being replaced with young neuroglia tissue, with many branching cells and fine, delicate fibrils, resembling glioma. This gliomatous tissue may break down, forming a cavity surrounded by young neuroglia tissue.

There is no definite mode of onset. Sometimes an apparently well child at night is found in the morning to have had an attack and become paralyzed. In most cases, however, one may get general constitutional symptoms—fever, headache, chill, followed by sweating, vomiting, apathy or restlessness, diarrhoea or constipation; and during this last epidemic in New York, most of my patients gave a history of the latter; one may also find general hyperæsthesia over the entire body or affected members thereof, painful muscles and bones, which pains usually seem to be worse at night. In severe cases you may get very high and prolonged fever, ex-

^{*}Read, by invitation, before the Orange, N. J., Practitioners' Society, May 22, 1908.

treme prostration, prolonged unconsciousness, and even delirium and convulsions. And again, the symptom complex may be such as to lead to a diagnosis of cerebrospinal meningitis until the characteristic early paralysis appears. There are rarely any complications accompanying this disease, although it may come on in the course of some other illness

Diagnosis.—The question is often asked whether it is possible for a diagnosis of acute anterior poliomyelitis to be made at the onset. I must confess that such a diagnosis is very difficult, and most authorities say "no," absolutely; but on the appearance of the paralysis the diagnosis should not be in doubt any longer, except in very rare cases. And immediately steps should be taken to do all that we can to lessen the evil after results of this disease.

I have tried to put together here for your benefit a few early symptoms which might assist you in

making such an early diagnosis.

First: Sudden attack of high fever with vomiting without apparent cause, particularly after exposure to extreme heat or dampness, or sudden change of temperature, in children whose daily diet is poor in judgment rather than in quality, and particularly if this attack comes in the season for this disease, and one or more such cases are known to have occurred in the vicinity within a short time before.

Second: These symptoms following either diarrhea or constipation where no actual food infection can be decided upon as the cause of these symptoms.

Third: All of these symptoms, and apathy, restlessness, delirium, or convulsions, with marked hyperæsthesia over the entire body, limbs, or muscles, this being particularly suspicious if the disease is known to have occurred in the neighborhood.

Fourth: These symptoms plus the early loss of

reflexes, all or in part.

Distinctive Diagnosis.—In arriving at a diagnosis, after the paralysis has appeared, we have the follow-

ing conditions to distinguish from:

First: From paralysis of cerebral origin, the most common form of which is hemiplegia, and in which there is increased reflexes and stiff limbs instead of flaccid ones, and also in which the electrical reactions are not lost or changed. In this disease also convulsions may come first, and the intelligence may be impaired.

Second: From transverse myelitis, which, however, is uncommon in childhood, and in which the distribution of the paralysis is equal; the reflexes also are first increased, and the sensation affected.

Third: From Pott's paraplegia, in which Pott's disease would be present, the reflexes increased, and the distribution of the paralysis equal.

Fourth: From spastic spinal paraplegia, in which the distribution of the paralysis is equal and the

reflexes are increased.

Fifth: From rheumatism and other joint diseases, in which we would get redness, swelling, local heat, determine which it much but heat parallel sis, sweats, no interference with the reflexes, rigidity rather than flaccidity, one or more joints affected, age, etc.

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young children and usually follows infectious diseases or metallic poisoning, and starts in the extensors of the hands and feet, has an equal distribution of the paralysis, and also with the sensation affected.

Seventh: From diphtheretic paralysis, in which there is a previous history of diphtheria, and in which the paralysis usually first appears in the muscles of the throat and neck, and is progressive, and which paralysis is preceded by a general weakness, long before the loss of power.

Eighth: From obstetrical paralysis or Erb's palsy, in which there is a history of the appearance of the paralysis at birth and the characteristic posture of the arm, with local anæsthesia in the distribution of

the circumflex nerve.

Prognosis.—The prognosis in this disease as to life is good. The amount of permanent damage is, as a rule, very much less than the primary paralysis which has appeared, as all the sections of the cord affected in the beginning are not permanently damaged or destroyed. Therefore, the ultimate result depends upon the extent of the permanent lesion in the cord, and the care and treatment which the case receives during the long season of partial recovery, and the treatment in the final stage. In the acute attack, if the advance of the paralysis remains stationary for twenty-four hours, it usually indicates that the maximum of the paralysis has been reached. In the early stages of the disease, the final degree of paralysis may be somewhat nearly correctly estimated by the following: When the faradic irritability is lost at once in the affected parts, the paralysis will probably be permanent. When lost later, gradual recovery will take place up to a certain point, depending upon how late the faradic irritability has been lost. It may also be estimated by the so called reaction of degeneration. About a week after the initial paralysis, the faradic current reaction in the muscles and nerves directly dependent upon the diseased area of the cord is lessened and soon lost. If the faradic reaction is retained, or merely diminished, the chances are good for ultimate recovery. The muscles which have lost their faradic contractibility may still be made to react to the galvanic current. In normal muscles the reaction is greatest at the closing of the negative pole. In the paralyzed muscles, the reaction is slower, it requires greater stimulation, and the contraction is greater at the closing of the positive pole. This is the reaction of degeneration. The muscles showing the reaction of degeneration are those which are going to be permanently affected. According to the extent of the permanent lesion in the cord and to the group or groups of muscles either wholly or partially paralyzed and to the care and treatment received by the affected parts during the acute, subacute, and chronic stages of the disease, is the future loss of function, contractions, and deformities going to depend upon. In the distribution of the paralysis of this disease, the lower extremities are more often affected as against the upper extremities in the proportion of about eight to one. The right leg is affected about as often as the left leg, and in a very large number of cases both legs are primarily and may be permanently affected. This is true of the upper extremities also. The abdote tail muscles, the back muscles, the cervical muscles, and the muscles of the face may also be affected in whole or in part. The paralysis may affect all four extremities, may be general, or may be in any number of different combinations. Should death occur in this disease, it is usually caused by a

paralysis affecting the respiratory muscles.

In the lower limbs we may have two types of paralysis, the thigh type and the leg type. In the thigh type, the psoas, iliacus, glutæi, and the muscles about the thigh are chiefly affected, while those on the inner side of the thigh and below the knee often escape. In the leg type, the peronei alone or in conjunction with the anterior tibial group of muscles may be combined, and sometimes the posterior tibial group also. The leg and thigh type may be combined in some cases. In the upper extremities we may have an upper arm type or paralysis affecting the muscles about the scapula, also the deltoid, the biceps, and the supinator longus, and a lower arm type of paralysis which affects the muscles below the elbow, either the flexors or the extensors, but in which the supinator longus escapes. We may also have a combination of these two types.

From within a few hours up to a few days after the acute onset, the paralysis may become apparent. The entire body and extremities may be affected within this time, also the face and neck. This first paralysis is usually greater than what permanently remains. For a while after the constitutional symptoms have abated, there is a period during which the paralysis remains stationary, and then comes the beginning of a period that ultimately ends in the partial recovery from the primary paralysis. period lasts all the way from six months to a year, and sometimes even longer. It is due to the fact that as the congestion and exudation recedes in the spinal cord, the motor cells and their connections which have not been entirely destroyed take up again their active functions. Where the cells and their associate tissues have been entirely destroyed, atrophy of the muscles supplied by them goes on more rapidly. Sensation, however, even in the worst cases, is rarely if ever affected. From this stage of partial recovery, we go to the stage of chronicity; and now without the proper treatment comes distortion, deformity, cold, flaccid, flail like limbs, retardation and stunting of normal growth, impaired motion, etc.

Prophylaxis.—Before giving the early and late treatment of this disease, I wish to say a few words as to its possible prevention. Can it be prevented? In view of our imperfect knowledge as to the cause of this disease, it is hard to give definite prophylactic advice, but we can caution mothers not to permit their children to expose themselves to the extreme heat of the midday in the hot summer months, and to see that those in charge of the children do not permit them, after being fatigued by play, to throw themselves down for rest on the cold ground, or to plunge into cold baths, or to in any other way assist in chilling the system, lowering the normal body temperature, and resistance to infection. We can see that infants and children are fed in a normal, rational way with the proper food suited to their age and development at the proper intervals, and are not allowed "to eat anything at any time and at any place." We can further caution the mothers against over fatigue, and the necessary regulation in

a proper manner of the child's bowels. I think that at the present time this is about all we can offer our patient in the way of prophylactic advice, unless, in the course of an epidemic, we suggest that they keep their children separate from others in

whose family the disease may exist.

Treatment.—As we go on to treatment of this disease, we may divide it into three stages, the immediate, the chronic, and finally the operative treatment for the correction of such loss of function or deformities that it may be possible to correct by such operative treatment. In the acute stage, the treatment is solely symptomatic. If the diagnosis is made early enough, measures should be taken that will tend to relieve the spinal congestion. This will be the administration of a brisk laxative, sedatives of a mild form, counter irritation to the spine by means of dry cups, iodine, the Paquelin cautery, mustard every three hours to slight reddening; or an ice bag may be applied to the spine. Free perspiration may be brought about by hot baths, and frequent sponging with cool water, or a simple fever mixture may be used to reduce the high temperature, if it is present. The patient should rest in bed in a lateral position preferably, as lying on the back continually simply adds to the stasis in the cord. As soon as the affected parts can be mapped out, they should be wrapped in cotton, and artificial heat applied, if necessary, to keep up the normal temperature of the part. The patient should have a light, but very nutritious diet, and just as soon as the acute symptoms subside, regular and systematic treatment should be instituted to care for the affected parts. The better this treatment, the better the final result to your patient, and I believe that these patients do better in the hand of the orthopædic surgeon than they do with the neurologist. This treatment should have for its object the maintenance, so far as it is possible, of the nutrition of the affected parts, the prevention of contractions, and the relief of strain upon the weakened tissue, so that deformity may be prevented. This can best be done by the administration of a tonic such as strychnine in doses sufficiently large to cause muscular irritability, which, in this disease, of course, must be tested for mechanically, as in the paralyzed muscles, twitching and stiffness in the back may not be observable. Early in the disease also, as the acute symptoms subside, a light, general massage may be instituted, gradually increasing to deep, thorough massage as time goes on. Muscle friction and muscle beating, heat and electricity and hydrotherapy may all be used to good advantage. electricity to be used, however, is that of the galvanic current, and it can only be used with advantage up to the time that it will cause muscular contraction in the affected parts. After that time I believe the use of it to be "love's labor lost." formity may be prevented by moving each joint to the limit of its normal range of motion in all directions each day, morning and evening, and supporting the limb with appropriate apparatus in its normal positions. In young children, up to about two years of age, where the lower extremities are affected, if the case is seen early enough, after the acute symptoms have subsided, and before deformity has set in, they are best treated by being put upon a Bradford frame modified by a slight device

which prevents contraction, through the normal muscles working against the paralyzed ones, and which also holds the limbs in a slightly overcorrected position; in older cases, of course, this treatment would be impractical, and therefore the application of a proper brace is necessary to prevent contraction deformities. There are a number of these braces, each one suited for a particular phase of the paralysis in the part affected, and I shall not discuss them here, as I would have to take up in detail the different forms of the paralysis and the brace suitable for each, and I do not believe such a discussion would prove either interesting or profitable to you at this time.

The third stage of the treatment is the operative one, and the most important of this class are tendon transplantation and arthrodesis. The object of tendon or muscle transplantation is to utilize the muscular power that remains in a paralyzed part or parts to the best advantage. It was first performed by Nicoladoni in 1882 for the relief of a paralytic calcaneus. He divided the tendons of the peroneus longus and brevis behind the external malleolus and united the proximal ends to the distal extremity of the divided tendo Achillis. Parish in 1892 sewed the tendon of the extensor proprius hallucis to that of the paralyzed tibialis anticus for the relief of paralytic valgus. In some cases in which a muscle has been paralyzed the tendon of the paralyzed muscle has been divided and its distal end has been united with the tendon of a normal muscle, the normal tendon having been split to receive it. In 1898 Eulenburg reported a case in which the deformity was a pes equinus. He gave relief in this case by tendon implantation. He took one half of the tendo Achillis and part of the tendon of the solæus and implanted them upon the tendon of the peroneus longus et brevis, and then divided the other half of the tendo Achillis. This was a transference of the function of the flexors to the pronators, and gave quite beneficial results in this instance. It has also been pointed out that when a muscle or its tendon is sutured to a paralyzed antagonistic muscle, the transplanted structure will actually execute the functions of a paralyzed muscle, mental activity, and practice with the muscle in its new capacity bringing about the desired result after the operation.

Of course any operative procedure is contraindicated while spontaneous recovery is going on; also in neglected cases where distortions have taken place through muscular contraction, until these deformities should be corrected and the normal muscles toned up by massage and the usual method of treatment and gotten into good condition.

To obtain the best results a thorough understanding of the muscular movements of the part to be operated on, and the most important of these movements is very necessary, regulates the degree of success which your operation is going to have in benefiting your patient. A foot, for example, is better placet in a position which would allow it to be brought to a right angle with the bones of the lower leg and adducted, rather than the reverse of this. It is also advisable to choose the muscles which will help in the prevention of deformity and aid to correct the same if it exists, as well as assisting in the

restoration of lost functions. A normal weak muscle must not be chosen to do the work of an originally strong but now paralyzed one, if one of equal strength can be so manipulated as to be of service. But if a weaker one must be used, its lesser normal function should be sacrificed to its newer and more important one if the same be deemed advisable to the success of it in its new capacity. Each case must be worked out by itself, and I therefore will not go into details of the various combinations which have been suggested and used, but only say that I believe the simpler the operation, by which I mean not attempting to do too much, the better the result is likely to be.

The technique of the operation is very simple, and if done under an Esmarch bandage the field of operation is very much clearer and cleaner to allow of good work. It is essential that in the limb to be operated on there should be no restriction to normal motion. The incision should be such as will expose the point of attachment of the tendon to be transplanted and the muscular substance, and this also allows you to verify your previous idea as to what are the partially and which the totally paralyzed muscles by sight. Paralyzed muscle looks dull and yellowish red, with a whitish yellow ten-don, and is much atrophied. The next step in the operation is to slit open the tendon sheath and divide the tendon near its point of insertion. Take this divided part and attach it to the freshened surface of the paralyzed muscle, which has been made taut by one of several means, with silk sutures, then cover the graft by uniting either the tendon sheath or fatty tissue over it with fine catgut. incision is best closed by a continuous catgut suture. The part is then put into an overcorrected position and fixed there by a plaster of Paris bandage, after which a corrective brace is used for several months more, in conjunction with, massage and like treatment, looking to the development and welfare of the affected limb, and to strengthen it in its new position. Several modifications of this operation are now in vogue for use in various parts of the different extremities.

The other operative treatment, known as arthrodesis, or the removal of the cartilaginous surface from articulating bones, may also be employed in a certain number of cases, to cause ankylosis of the joint after putting the same in a good position for use. The operation consists in opening the joint, removing the cartilaginous surfaces of the opposing bones, and, after closing the wound, putting the limb in plaster of Paris until union is secured. In some cases tendon transplantation and arthrodesis may be employed together with advantage. Some authorities are advocating the transplanting of nerves also for use in these cases, but as yet I do not believe the results obtained warrant me in advising it for use

In closing my paper, I wish to acknowledge my indebtedness to the works of Dr. Whitman, Dr. Young, and to Dr. Bradford and Dr. Lovett's on Orthopædic Surgery, and to Dr. Delafield and Dr. Prudden's work on Pathological Anatomy and Histology, to Dr. Holt's work on the Diseases of Children, and to Dr. Start's work on Organic Nervous Diseases.

100 Wes One Henderd and Sixin Street.

ACUTE ANTERIOR POLIOMYELITIS IN. THE ADULT, WITH EXHIBITION OF CASE.*

By LASALLE ARCHAMBAULT, M. D., Albany, N. Y.,

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Poliomyelitis anterior acuta (a term we owe to Kussmaul), or infantile paralysis, as it is more commonly called, is a disease common enough in children, one of which every member of our society, I have no doubt, has seen several instances. I know of no commoner organic affection of the spinal cord in infancy and early childhood. But, in the adult, poliomyelitis anterior acuta is rare, the degree of its rarity at this period of life exceeding by far that of its frequency in childhood.

In Muller's statistics published in 1880, and based on the study of forty-six cases, only three of the cases were in adults; a percentage, therefore, of

Of the eighty-five cases collected by Baumann at the University Clinic of Breslau between 1889 and 1904 and reported the following year, only two occurred in subjects over ten vears of age.

Dana, however, in his remarks upon the epidemic which occurred in the Otter Creek Valley, Vermont, and which was reported more particularly by Mac-Phail and Caverly, maintains that the percentage of adults affected was as high as ten.

It is not without reason, therefore, that I deem myself fortunate in being able to present to you on this occasion a perfectly typical case of infantile paralysis in a man who has reached his fortieth vear.

As you shall see from the following data regarding both the mode of onset and the objective symptomatology, the clinical picture which this patient presents can hardly be any other than that of well characterized poliomyelitis anterior acuta.

History of the Case. Mr. G. G. H., age forty, married; knitter by occupation. His past history presented nothing of immediate inter-

est to us in the study of his actual condition.

Save for a certain degre of dizziness during the two weeks preceding the onset of the disease, the patient was enjoying relatively perfect health at the time he was taken

On Friday, August 9th, while at work, as usual, he began to suffer from headache, which rapidly grew in intensity and became so severe that the patient spoke of it to-day as the most agonizing pain he had ever experienced and one he should never forget. In the evening of the same day, fever appeared and rapidly increased during the might, so that the following morning the patient was totally confined to his bed. To the prostration resulting from high fever and persistent intense headache was soon added the discomfort occasioned by severe spells of vomiting. For four days, this triad of symptoms continued without any remission, sapping the patient's strength and minimizing his power of resistance to the final and most terrific blow of the infectious invasion. There had been up to this time no trace of paralysis or of subjective sensory disturbances.

It was on the morning of Wednesday, August 14th, the fifth day, therefore, after the appearance of the initial headache and pyrexia, that the patient noticed, on awaking, that he had totally lost the use of his left arm; his right arm still possessing at this particular time its usual strength. The following day, numbness and tingling appeared in the right leg, after which there developed a very gradually increasing paresis of both lower extremities, involving the right one, however, decidedly more than the left. It took three days for this paralysis to become fully constituted, i. e., to attain its maximum intensity in

this particular case.

After the onset of these paralytic manifestations, the lower extremities were also the seat of severe pains of a burning character, radiating over the entire length of the limb from hip to foot, most severe in the sole of the foot and much more marked at any one point in the right than in the left extremity. Pain of equal severity was also present along the spine, more especially in the lumbo-sacral region and at the nape of the neck. Coincidently with the development of motor paralysis in the lower ex-tremities, the right arm began to show evidence of in-volvement and gradually became disabled, more especially in its proximal segment (shoulder and arm).

The face had at no time been implicated, but the same could not be said of the muscles of the neck and trunk. The patient told us, indeed, that at the onset, whenever his position was changed from the fully recumbent to the sit-ting posture, or the shoulders raised from the bed, the head, unless supported, would fall as an inert mass either forward on the chest or backward on the bed, as the case might be. As to the trunk muscles, they were at one time so widely involved that the patient lay perfectly helpless on his back, totally unable to sit up or turn to either one side or the other, and that even to-day he can only partly

roll over to either side, being able to resume his original position only when he has turned to the left.

As regards involvement of the organic reflexes, there was this point to be noted, that immediately following the onset of the paralytic symptoms in the lower limbs, complete retention of urine existed which necessitated three or four catheterizations. But there has been since then no

further disorder of the organic functions.

Actually, physical examination revealed the existence of a widespread motor paralysis affecting all four extremities—of a paraplegia, in other words. This paraplegia was, although not obviously so, symmetrical in its own peculiar fashion, as we shall see shortly.

If we study more minutely the topography of this paralysis in each extremity individually, we see that in the right upper extremity the paralysis involved mainly the adductors and abductors of the arm, the flexors and extensors of the forearm, the pronators and supinators of the forearm and hand, but that the various groups were very unequally affected; the abductors, extensors, and pronators being appreciably weaker than the adductors, flexors, and supinators.

The muscles of the shoulder girdle had preserved practically their full strength, and the patient could move the shoulder in almost any direction; the excursion was ample the movement powerful. The small muscles of the hand and fingers were very slightly involved; the majority of the finer movements being executed readily and with relative

Resistance to passive motion was very poor in any part of the extremity save at the shoulder, but the patient could execute voluntarily many of the movements; he was totally unable, however, to raise the elbow from the bed, and extension of the forearm on the arm is an extremely laborious task.

The left upper extremity was disabled practically in its entirety. There was no motion whatever in the shoulder and arm, none in the forearm, except a slight degree of supination and a trace of pronation. Flexion of the hand at the wrist was the only coarse movement executed with perceptible amplitude, extension being decidedly feeble. The small muscles of the hand and fingers were the least involved; the fingers could be moved separately and the thumb approximated with any of them, but nevertheless they were weak. The hand showed considerable atrophy and was assuming the attitude known as the main en griffe.

The right lower extremity paired with the left upper as regards extent of involvement, there being paralysis of almost every muscle in the limb; but this paralysis was unevenly distributed. It was complete in the muscles of the leg, foot, and toes; incomplete, though marked, in those of the root of the member. Thus, the patient could, when lying on his left side, partly flex the thigh on the abdo-

Read at the first annual meeting of the Third District Branch Medical Society of the State of New York, held in Albany, Octo

Meyer in 1861 and Duchenne in 1872.

men; a movement which was impossible, however, in the dorsal position. When lying in this latter posture, the leg was invariably held flexed at the knee, and one would naturally suppose the flexors of the leg to be intact, when, in reality, they were almost totally disabled; flexion being brought about passively with the help of the other leg and to secure comfort to the patient. Full extension (itself simply the result of gravity) caused intense pain, as it placed on the stretch an inflamed sciatic nerve trunk. Adduction of the thigh was relatively good, abduction very The patient was absolutely unable to lift the foot

The left lower extremity was, of all four, the least affected. The various movements of the thigh and leg, although distinctly weaker than normal, were relatively well preserved and powerful, but in the foot and toes motion was as seriously compromised as in the other extremity.
As regards the trunk muscles, those of the thorax, abdo-

men, and perinæum were entirely free, but those which constituted the fourth and fifth layers of the back, the erector and multifidus spinæ more particularly, were decidedly implicated; the patient being unable to sit up in in bed or to resume, except by the intermediary of gravity, the recumbent posture when propped up.

The muscles of the neck, once markedly incapacitated,

have practically regained their former strength.

There were no objective disturbances of any of the various forms of superficial and deep sensation in any part of the body, save a generalized, though slight, hyperalgesia. But subjective sensory phenomena, on the other hand, were not wanting, and the pains in the lower limbs, which were so distressing at the onset of the disease, although much lessened in intensity, still continue to annoy the patient. Similar pains were felt at the nape of the neck and in the left arm. Moreover, there was a generalized muscular tenderness, more marked in some parts than in others, and which, in the lower extremities, was in great part confined to the course of the larger nerve trunks. It was most evident in the right leg, for instance, wherever the sciatic nerve trunk and its external popliteal continu-ation was more accessible (middle line of posterior surface of thigh, popliteal space, head of fibula, external surface of leg, external malleolus, etc.); suggesting, therefore, implication of the main trunks rather than of their intramuscular ramifications. In support of this hypothesis was the absence of these phenomena in the muscles of the anterior femoral and posterior tibiofibular regions, and the fact that this tenderness was by far most marked in those extremities which are the most paralyzed; as if the neuritis were simply of a radicular character, an extension from the central focus in the spinal cord. And yet, relatively slight pressure exerted upon the plantar surface

relatively slight pressure exerted upon the plantar surface of either foot caused considerable pain.

All the tendon reflexes were abolished in left upper and right lower extremities. In the right upper a slight radial reflex was obtained, but no trace of a tricipital response exists. In the left lower extremity the knee jerk was, perhaps, rather lively, but the tendo Achillis jerk was very faint if at all present, a doubtful response being occasionally observed. The umbilical, cremasteric, and plantar cutaneous reflexes were present

As to the existence of trophic disturbances the marked muscular atrophy in the whole of the right lower extremity was most evident; the volume of the left limb was relawas nost evident; the volume of the left limb was reastively well preserved. In the upper extremities the atrophy, though distinct, was far less appreciable on inspection; it was more marked in the left than in the right limb. Dr. E. A. Bartlett, to whose well known skill the electrical management of the case had been confided, reported that a partial reaction of degeneration was present; it was fairly generalized, but, as might be expected from the data regarding the distribution and degree of functional inadequacy and trophic disorder, this reaction likewise was most

Vasomotor disturbances consisting in coldness, both sub-

perior disturbances consisting in countess, both subjective and objective, were also to be noted, affecting more particularly the right lower limb.

Deformities were, of course, hardly to be expected, on the potential of the phase of of th appreciable deviation of the vertebral axis.

We have the co, there with a side pread atrophic not appeal a machine " nome remittes in a man of forty years of age. Among the many points which need further discussion in this case, the first one, naturally, is that regarding the correctness of

The majority of authors, among whom I may mention Déjerine, Marie, Oppenheim, and Osler, are of the opinion that a certain number of the cases reported as "poliomyelitis anterior acuta in the adult" were truly instances of peripheral neu-The following passage taken from Déjerine and relating to the differential diagnosis between poliomyelitis and peripheral neuritis, is of particular interest to us, as it is almost an exact résumé of the atypical features present in our case and which the author evidently considers sufficient to establish the diagnosis of polyneuritis. He says: "In the adult, one may observe atrophic paralysis, acute in onset, and the course and general evolution of which simulate more or less closely those of infantile paralysis. Many of these cases come under the head of neuritic muscular atrophy. Others, few in number, do seem to be truly instances of acute poliomyelitis; but, thus far, pathological anatomy has not furnished absolutely demonstrative proofs of the existence of the latter category of cases.

"In muscular atrophy of spinal (medullary) origin, the limbs and nerve trunks are no more sensitive to pressure than in health; whereas, in cases of muscular atrophy dependent upon neuritic lesions, there is generally present a condition of true hyperæsthesia, which is very marked, indeed, and characterized by subjective pains either of a lightning or boring or simply neuralgic character, as well as by very severe pain on pressure upon the nerve trunks and muscular masses.'

Antagonistic to our diagnosis as this passage from Déjerine may seem, we do not feel disconcerted, as there still remain many features about this case which are not to be explained by a peripheral neuritis. This latter lesion could not possibly account for the abruptly appearing and massive atonic paralysis of the left upper extremity or for the transitory involvement of the organic vesical reflex. No neuritis, however rapid in its evolution, could explain the development in less than a week, of a paralysis of such formidable extent (all four extremities, trunk and neck) and at the same time of such generalized severity as that which this patient presents; nor would it explain the rapid occurrence of such widespread degenerative atrophy. Still, there unquestionably exists in this case a considerable degree of nerve involvement, and the next question is How are we to explain it? Is it to be considered as an independent and merely coincident lesion, or rather as part and parcel of the medullary affection. i. e., simply as an extension of the process having originated in the cord? In the former case, it would seem rather peculiar that a strictly systematized motor neuritis (there being absence of all objective sensory disturbances) should evolve independently from, and still coincidently with, a medullary lesion which is itself absolutely confined to the motor neuron. We are all the more shaken in our belief of such a probability, because the manifestations of this very neuritis appeared at an appreciably later date than the paralysis, after what we believe to have been poliomyelitic lesions had determined

first a paralysis of the left arm and two days later

a paresis of both lower extremities.

In the presence of such facts, we are led to consider that in the pathogeny of this clinical picture there is an association of poliomyelitis and neuritis. The word association in this connection, however, is most objectionable, as it at once suggests the existence of two lesions, whereas, in our mind, there is but one, namely, a lesion of the peripheral motor neuron; the lesion in this case having involved the neuron in its entirety, as the result, very probably, of the unusual virulence of the primary underlying infectious process. Between this case and the usual type of acute anterior poliomyelitis, there is only a question of variation in the extent of involvement of the peripheral motor neurone. Anatomically, we might designate the lesions in such a case as this, by the term inferior motor neuronitis (neuronite motrice inférieure); a term we owe to Juarros and which Brissaud and his pupils have already applied to cases which, in many respects, resembled that which we have the honor of submitting to your consideration.

That in its application to this particular case, the term neuronitis is not only fully justified, but that it even represents the only appropriate designation, is amply demonstrated by certain other facts in the history of the development of this clinical picture; facts which, at the same time, give us an insight into the mechanism of production of this neuron-It will be remembered, indeed, that the disease was ushered in by the cardinal symptoms of meningeal inflammation, headache, vertigo, and vomiting, associated with pyrexia, and that this characteristic triad constituted the entire symptomatology of the affection for fully five days. The significance of this onset is unquestionable, and it is hardly necessary to mention the occurrence of severe rachialgia one or two days later, in order to assert that the initial lesion in this case was undeniably meningitis. This supposition, moreover, finds additional support, when we come to explain the full development, in two days, of a poliomyelitis having a vertical extent limited above evidently by the first cervical segments and below by the conus medullaris. Such rapid extension of inflammation cannot take place within the cord, but must almost necessarily do so without it, through the intermediary of the blood stream, and therefore in the leptomeninges from which the cord receives its blood supply. It then becomes readily conceivable that from the meninges the infectious process could have traveled along the vessel walls and penetrated into the substance of the anterior gray matter; likewise, it can easily be imagined that the process has further gone in the opposite direction and also involved the spinal nerve roots, by simply extending along their sheaths, which are nothing else but tubular prolongations of the meningeal coverings of the spinal cord. Thus does the rapid development of a meningoradiculomyelitis find a simple and logical explanation. It goes without saying that the onset of the disease in this case, by the character, severity, and duration of its symptoms, strongly militates in favor of the infectious character of poliomyelitis anterior acuta; a fact, moreover, which to-day is almost universally accepted. In this connection it

might be stated that the bacterial origin of poliomyelitis has been recently advanced by a few observers, and is actually attracting considerable attention. Already in 1901, Delhloff had cultivated. a diplococcus from the cerebrospinal fluid of subjects suffering from the disease, and he has more recently (1906) come back upon these facts, confirming the results of his earlier researches. The organism varies somewhat in its reaction to the various culture media upon which it is grown, but under the microscope, its morphological aspect is always the same. It bears no resemblance whatever to the pneumococcus. In 1903, Raymond and Sicard suggested the possibility of an intimate relationship between the ætiological factors concerned in the production of poliomyelitis and cerebrospinal meningitis. Many authors, however, consider that the moment has not yet come for the acceptation of such a generalization. Schultze's case of infantile paralysis, in which the meningococcus was detected, is far from conclusive.

P. Morvan, in his excellent *Thèse de Paris*, July, 1905, upon poliomyelitis anterior in the adult, remarks that in the etiology of the affection no recognized species of microorganism can be mentioned;

the toxines suffice for its determination.

Yet Geiersvold in 1906, writing about the epidemic of poliomyelitis in Norway during 1905, states that on several occasions peculiar organisms were observed in the cerebrospinal fluid of individuals presenting the disease.

Evidently the bacteriology of poliomyelitis anterior acuta is still in the hands of the future.

The question of the association of poliomyelitis and meningitis, however, is one which is rapidly passing out of the field of controversy. Several instances, indeed, are on record (Brissaud and Londe, Triboulet and Lippmann, Raymond and Sicard. Achard and Grenet, Guinon and Paris, etc.) in tile paralysis, an abundant lymphocytosis; a fact which may be considered proof positive of the existence of a meningitis. In Guinon's case, moreover, there existed clinically other signs of meningitis (Kernig's phenomenon, dermographia, etc.). More recently, the cases reported by Cruchet (1906), by Camus and Sézary, Raymond and Lejonne (1907) have furnished important additional clinical evidence of the participation of the meninges in the poliomyelitic process. Anatomically, the meningeal involvement in poliomyelitis was described several years ago by Schmauss and by Goldscheider.

Naturally, in our case, lumbar puncture would constitute a most simple means of ascertaining whether or not a meningitis exists. The practical importance of this procedure had not escaped us, and if it has not yet been resorted to, it is mainly because we were unwilling to stake our opportunity of presenting the case to you. The operation was simply deferred, and we expect to proceed with it within the next few days. Whatever share the lesions of the meninges and nerve roots may have had in the production of this clinical picture, the fact remains that the anatomical substratum of this extensive atrophic paralysis is constituted essentially by a poliomyelitis involving almost the entire length

of the spinal cord from the superior cervical region to the conus medullaris.

As an instance of poliomyelitis, this case pre-sents still a number of interesting features. In the first place, we notice that, although the four extremities are affected, the left upper and right lower limbs are involved to a decidedly greater extent than are the remaining two; in other words, it is, although not purely so, a crossed spinal paralysis, and thus illustrates the fact upon which Marie, among others, has particularly insisted as early as 1892, namely, that when poliomyelitis involves one lower and one upper extremity, the paralysis is more frequently crossed than unilateral or hemiplegic in type. In our case, all four extremities being involved, we cannot speak, of course, of a crossed spinal paralysis in the classic sense, but, nevertheless, the relations are preserved as regards distribution of proportionate degrees of paralysis. In addition to a crossed paralysis there exists in this case a crossed paresis.

The age at which this disease came on, the patient being actually in his fortieth year, is a feature of considerable interest. As far as I have been able to ascertain, there is no case on record of poliomyelitis in the adult in which the affection appeared later than in the thirty-third year; such was the age of the patient presented by Huet and Lejonne before the Neurological Society of Paris at the meet-

ing of May, 1906.

A fact to be wondered at is that the patient has survived this virulent invasion, being given the meningitic character of the initial phase, and the rapid involvement of almost the entire musculature of the body, even to the muscles of the neck; a feature closely suggesting Landry's paralysis. It is remarkable that the process should have stopped just short of invading the bulbar centres.

Of cases which at all resemble ours, literature affords but very few examples. Brief consideration may be given to the following cases carefully re-

ported within the last two years.

In the case presented by Huxt and Leionne, the patient, a man of thirty-three, had had for a whole week previous to the onset of the paralysis a febrile condition associated with severe headache. Then there suddenly appeared a paralysis of the left lower extremity, and three or four days later the left and then the right upper extremities rapidly became disabled. There were no objective sensory disturbances, but the patient complained of pains along the entire length of the spine, especially at the nape of the neck and in the lumbosacral region. In the lower pain, this tenderness being found along the course of the anterior crural and sciatic nerves on the left side and limited to that of the sciatic on the right side.

Raymond and Lejonne report the case of a young woman, of twenty-two years, who, after twenty-four hours of high fever and violent headache, noticed on awaking that she had lost completely the use of the right lower One or two days later the left limb also became disabled, and at the same time the patient began to experilocalized, not radiating over the whole extremity, and lasted for fully six weeks. There was at no time any appreciable disturbance of objective sensibility, but there did exist at all times a marked muscular tenderness in the On the other hand, the nerve trunks were totally insensitive to pressure. The organic reflexes remained intact throughout. Lumbar puncture was not performed, but the

simply from the clinical picture, to the existence of a meningoradiculitis in addition to the poliomyelitis,

More recently, Claude and Chartier have produced the detailed history of the interesting case which follows:

A young girl of seventeen, who, for a year past, had been employed as saleswoman in a large department store, constantly standing therefore and often exhausted at the end of her day's work, was taken suddenly ill with high fever, headache, rhachialgia, and mild bronchitic symptoms. This condition having lasted five days, the patient, feeling somewhat better, decided to leave her bed, but had to resume it at once, owing to her extreme weakness. The following morning she awoke to find herself totally incapacitated, having lost the use of all four extremities, of the muscles of the trunk and neck, and being even handicapped as regards respiration. The muscles of the face, pharynx, and larynx alone had escaped. There was some stiffness about the neck which continued for a few days more. Five days after the onset of the paralysis there developed in all four extremities and along the whole spine very severe lancinating pains which kept the patient in a state of constant distress. The slightest pressure upon the muscular masses likewise caused very considerable discomfort, as would also any passive movement of the limbs, flexion more particularly. The subjective sensory phenomena later disappeared, for the most part, but there persisted a marked tenderness on pressure, both in the muscles and in the nerve trunks. There was at no time any appreciable objective disturbance of either superficial or deep sensibility. At the onset of the disease there was retention of urine which lasted two or three days. Lumbar puncture performed at this period revealed the presence of no abnormal

Such are the salient points in the history of this most interesting case, which represents, to the best of our knowledge, the only instance on record of a clinical syndrome analogous to that which we have had the good fortune of bringing to the attention of the Society.

In terminating, I desire to express right here my highest gratitude to Dr. George Lempe, to whose courtesy I owe the privilege of this presentation.

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126 EAST THIRTY-FOURTH STREET.

MALARIA IN GREECE.*

By A. Rose, M. D., New York.

Cardamatis describes a malarial epidemic in Athens:

Towards the east from Athens, between the northeast foot of the Hymettos and the Lykabettos, there are two extensive quarters, Batrachonissi and Ampelokipi, where; since the year 1880, the infantry barracks and many other public and private buildings have been erected. To the east from Ampelokipi there are two other smaller quarters, Goudi and Kandrebiati. These outskirts of Athens, which are hilly, have a surface of 550 acres, and are 85 to 134 metres over the surface of the sea; they are crossed by two rivers and some rivulets which confluent and form the Ilissus. The latter, assuming only after heavy rains a formidable size, crosses the whole described landscape and runs into the Phaleron. The geological condition of the soil is about the same as that of the Attic soil in general. Batrachonissi has very friable, loose marl; Ampelokipi, Athenic slate, covered with a deep layer of diluvium; in Goudi there are sporadic layers of red muddy ground. On account of this geological condition the landscape described is, in consequence of the permeability of the layer of diluvium, dry on the surface and only much infiltrated after heavy rain, except Goudi, with it rocky ground, here the ground water is less deep under the surface. In general, water is found evervwhere in small depth; the inhabitants draw it from wells, make use of it to water the garden, and as it is without any after taste, for drinking and cooking. With the dryness of the soil on the one hand and its chemical condition on the other hand, the vegetation is in general poor, only in Ampelokipi and in Goudi somewhat more cultivation is done; here there are vegetable, flower gardens, orchards, orange and wine plantations; in some parts cereals are raised, especially barley.

In the year 1901 an epidemy or rather a pandemy of malaria broke out in these quarters; about two thirds of the inhabitants and the soldiers in their barracks were attacked. Of ninety-two men of the company of telegraphists, stationed at Goudi, sev-

enty-nine took sick with malaria.

The epidemy began during the last ten days of the month of July (middle temperature at time time 27.82° C., 82.08° F.) in Ampelokipi and Batrachonissi, and spread also among the neighboring population. It is evident that the confluence of and stagnation of water from a number of rivulets was

the cause of this epidemy. At first the cases of malaria appeared sporadically, but they became numerous after continual rain during the ten days of the first part of the month of August, and attained their maximum of intensity with the 20th day of August (middle temperature 24.21° C., 75.60° F.), until the end of the month September (average temperature 23.82° C., 75° F., during the first ten days, and 20.85° C., 69.68° F., during the last ten days of this month); with the first days of the month of October (average temperature 19.51° C., 67.8° F.) new attacks became less numerous, while relapses were frequent. A shower of rain, on October 12th, lasting twelve hours and thirty seconds, with 13.3 mm. precipitation, caused a rapid sinking of temperature of the atmosphere to 12.55° C., 54.5° F. Cases of malaria of first invasion became more and more scarce and ceased almost completely during the month of November.

The malarial epidemics which appeared in the same localities during the years 1902 and 1903 were

of much less intensity.

Investigations revealed that it was only one species of mosquito, namely, Anopheles superpictus, which multiplied in the epidemic zone. It was found that the principal place where the development of innumerable swarms of this kind of mosquito happened was a branch of the Ilissus, named Phlebes, which had been dry during about twenty years, but had been running again in intervals during spring, summer, and autumn of the year 1901. The same was the case with other branches of the Ilissus passing through Goudi and Ampelokipi, and which, on account of the unevenness of their beds, formed, after heavy rains during the month of August, small swamps upon which the mosquitoes prospered. According to the observation of physicians and inhabitants there had been at no time in former years such an enormous number of cubicides. As a rule, it is very dry during the summer in Athens, while the contrary was the case during the summer of

The superpicti which had developed during the spring did well in immense numbers during the summer and autumn, thanks to the rainfalls during June and August, in consequence of which the Ilissus had water stagnating within and alongside of the riverbed, affording protection to myriads of mosquitoes.

Besides the excessive rain which preceded the development of the epidemy, there happened to be another factor, namely, extensive digging of ground which had been done for the construction of several

new roads.

During the two following years, 1902 and 1903, there had been some rain during the spring and summer, and a considerable number of mosquitoes were observed, but the malaria epidemy was of much less intensity.

During the spring of the year 1904 it was also rainy, and mosquitoes developed correspondingly, but they disappeared almost completely during the summer; it was perhaps that north winds, which reigned during this season, drove them far away from the city. It was noticed that relapses were numerous in the epidemic zone of the succeeding years, attacks of first invasion, however scarce, con-

[&]quot;This article is a continuation of Dr. Rose's article on Malaria in Green, public of in the Fanorial of April 11, 382-381, 168 which the reader is referred. The author takes this opportunity to correct an error of his in the first article. It was not Dr. Cardamatis, hit Pr. Sabba, who was the feather of its Sp. Dr. Cardamatis was and is the principal cooperator and the general secretary of the society.

trary to what had been the case during the epidemic years 1901, 1902, and 1903, while the greatest multiplication of mosquitoes happened during the summer months. The rise and fall during the epidemics corresponded with the maximum and the minimum of the development of the mosquitoes.

126 East Thirty-fourth Street.

PROSTITUTION. By J. L. Nascher, M. D., New York.

In Dr. Knopf's article, Some Thoughts on the Ætiology, Prophylaxis, and Treatment of the Social Ill, he omits several factors which, while not prominent in New York, are both predisposing and exciting causes of prostitution elsewhere.

In comparison with the great cities of Europe there is little prostitution in this city, and most of

that is a social evil and not a social "ill."

Dr. Knopf's distinction is, apparently, that it is an evil when the woman is knowingly and wilfully vicious, and it is an ill when the woman is unconsciously vicious through lack of proper education (including vicious surroundings) or lack of the inherent modesty of woman, or unwillingly vicious through physical defects, weak character, or want.

In this city there are very few women who become prostitutes on account of insufficient wages; indeed, few New York city girls become prostitutes unless brought up amid vicious surroundings. Most of the women found on the streets and in vile resorts are from smaller towns and villages, girls who could not resist importunate lovers, women deserted by their husbands, or who left their husbands, many who had been prostitutes elsewhere. Laxity on the part of the immigration authorities is responsible for the large number of foreign, notably French, prostitutes. These are sent to private houses of ill repute, all over the country, and after they have learnt the language they come to New York.

The stage is responsible for much prostitution here, and burlesque companies are hotbeds of vice. Of fourteen girls of a burlesque company stranded last December, four are now prostitutes. change from the farm to the stage, from the quiet humdrum existence of the country to the life and excitement of the city, produces a corresponding change in the girl who can stand it. A manager of one of these companies said: "After a country girl has stood the ordeal of two or three performances, she plunges into all the vices of the most hardened. Child labor is a negligible factor in this city as a cause of prostitution, and the numerous articles published on the subject of child labor in the South during the past three years have brought about better conditions everywhere. True, many girls become world wise and precocious in stores, shops, and factories, but that same wisdom saves them from fall when beset by temptation. Far more exposed are those who follow certain vocations which bring them in solitary and intimate contact with men. I might mention the manicurist, the cloak model, even the pretty typewriter who is alone in the office with her employer,

An investigation of the subject will probably

show that social and not economic conditions are responsible for most of the prostitution in New York. The predisposing causes are lack of proper education, vicious surroundings, and occasionally an inherent vicious disposition. The exciting causes in the vicious or "evil" are, the desire for pleasure or the gratification of erotic desires. In the "ill," the desertion of a lover or husband is the most frequent cause. Shame or pique is often followed by an abandon from which there is no recall.

How do conditions here compare with those abroad? Statistics in Scotland a few years ago showed that in eight counties from twelve to sixteen per cent. of births were illegitimate. The causes for this lack of chastity are intemperance and poverty. I had occasion to see these conditions while visiting the wynds and closes of Edinburgh two years ago. There were whole families occupying single rooms, families occupying adjoining rooms separated by a sheet, children drinking liquor in a public house (liquor store); a girl about sixteen years old so scantily attired that parts of her body were exposed, drunk; another one, no older and apparently pregnant, drinking with several other women on a street corner. The use of alcohol from childhood dulls the moral sensibilities, and the women do not resist their lovers' embraces. But outside of the seaports, Glasgow and Leith, etc., there is little prostitution in Scotland. (I speak here of professional prostitutes.)

In London there are three districts in which this class congregates. Near the docks are the old, haggard wretches; in Leicester Square are the French and Belgian importations, with a few English girls, the district at night being like the "Tenderloin" in New York. About the Elephant and Castle section were many women driven to their calling through want. Here economic conditions

were responsible for the social ill.

An attractive girl, about eighteen years old, earned ten shillings a week, and was obliged to contribute twelve shillings toward the household expenses. She went out Saturday nights and would make a couple of half crowns, getting as much in an hour as she earned in three days. She would not do this every day, as she was, she said, a respectable working girl. Her parents knew what her wages were, but never asked her where she got the rest. She told me lots of working girls were obliged to do the same as she did. While the curse of drink is responsible for much of the poverty in the British capital, the economic conditions are responsible for prostitution.

The low moral tone prevalent in Paris can be ascribed to two causes. The constant use of alcohol in the form of wine, from infancy, blunts the moral sense and dulls or destroys the instinctive female modesty. Pornographs, as readily accessible to the young as good novels are here, inflame the mind, stimulate the imagination, and arouse erotic desires. Alcohol and immoral literature, pictures and conversation form the predisposing causes. The government is responsible for the other. It licenses the houses of ill fame and the prostitutes, thereby giving them a recognized standing with certain rights. It takes away the stigma which attaches to prostitution, removing one of the most potent restraining influences upon women. The

demoralizing effect of legalized prostitution, as seen in Paris, is the best argument against state control or any other measure by which this vice may

be legalized.

Dr. Knopf evidently does not believe in the existence of born prostitutes. The daughter of a former school teacher in this city during early childhood evinced a fondness for playing with the genitals of her pets. Later she evinced the same tendency toward boys. She was repeatedly punished for this and for masturbation before she was ten years old. She left home shortly after puberty, and was found in a house of ill fame. The mother confessed that she had similar tendencies during her own childhood. In Paris I saw a similar precocious child who accompanied her mother, a prostitute, to a dive.

In Vienna most of the women of this class are either Hungarians or Viennese. The former are reared for the purpose and are inmates of houses. The latter, who secure patrons on the streets, in the parks, or cafés, take up this life to obtain the pleasures of the table, the bed, and the ball room. few are driven to it through want. Modesty and morality are not regarded as highly there as here, and a fallen woman can rehabilitate herself. The father of an illegitimate child must support the mother and child, and if unmarried cannot marry so long as she remains single and faithful to him. This feature saves many girls who under similar circumstances here would become prostitutes. Vienna, as in Paris, it is an "evil" and not an "ill." The women take up the vocation, knowing its immoral nature, yet willing to bear the stigma and risk the dangers for the pleasures to be derived.

In considering ætiological factors we must consider not only social and economic conditions and physical defects, but also racial traits, national conceptions of morality, the tendencies of vocations, the effect of alcohol as a factor, the educational facilities by which girls can learn the dangers of

prostitution.

Dr. Knopf suggests three methods for treating the social ill—segregation, shelter for those willing to reform, and treatment of venereal diseases. The last has really no bearing upon the subject of suppression or repression of prostitution. The social evil would exist if there were no such diseases as gonorrhoea and syphilis, and the existence of these diseases alone brings the subject, which belongs to the realm of the sociologist, under the physician's notice. There are several shelters which a fallen woman willing to reform can go to. But few go voluntarily, fewer are reformed, and very few stay reformed. The girl who has been able to make five or ten dollars a night by prostitution will not long remain in a situation where she can earn no more in a week

Segregation is neither curative nor preventive. The women congregate in districts where they are most likely to find the men who seek them. The visitor stopping at a Tenderloin hotel finds the women near his hotel, while the seaman will find his choice near the docks. No law and no force will bring the sailor to the Tenderloin in search of a woman who will dispense her favors, nor drive the up town women to the docks. Probably the most

efficacious method of dealing with the problem is to work on the causes of prostitution.

The treatment must be preventive, not curative. Whatever may have been the causes which drove the woman to prostitution, once a confirmed prostitute she does not want to be cured. There may be moments of shame, remorse, contrition, she may go to a home for fallen women, but sooner or later she will be obliged to decide between, on the one side, a boss, ten dollars a week, nine hours a day work, restraint, and fear of exposure; on the other, no master, five or ten dollars a night, no work, no restraint, pleasure, and abandon.

There are undoubtedly cases of girls who have reformed and remained reformed, but the few successes are probably due to the individual efforts of women who carefully select the cases, a woman taking one girl under her protection and restoring her

to respectability.

One of the most prolific causes of the social ill is the desertion of the pregnant girl by her faithless lover. Were there a law compelling him to support his child and its mother while she remains single and chaste, it would keep many of these unfortunates from going on the street. The present law against bastardy is ineffectual. I believe it has been decided that when a woman accepts money from a man who enjoyed her favors she is classed as a professional prostitute. The present of a dollar or two, "to buy candy with," should not be allowed as a defense in bastardy cases, to show that the girl accepted money for her favors, and is hence a prostitute, without rights before the law.

A woman known to lead an immoral life or suffering from a venereal disease should not be permitted to work in a store, shop, or factory where other women are employed. This should not, however, work to the detriment of the woman who is trying to lead a virtuous life after a life of shame.

There should be severe punishment, not a fine, but imprisonment, for the employer, foreman, or superior who assails an employee's virtue, though it be with her consent. This is a potent factor in the ætiology of prostitution among working girls.

Bad housing, emphasized as a factor in the causation of the social ill, is really of less importance in this connection than the racial traits of the dwellers. In the Ghetto, the most congested district in the world, containing many houses unfit for human habitation, prostitution among the Jewish girls is rare. The twenty-second chapter of Deuteronomy is impressed upon the children, boys and girls alike, as soon as they are able to understand its import. Here we see the practical results of religious education.

The debasing effect of alcohol upon the moral sense, as seen in Scotland and France and to a lesser extent in all wine and liquor drinking countries, is not presented to the public in a practical manner. Cut out the religious features and show the hygienic benefits of temperance or at least moderation. This duty should devolve upon medical societies and not upon church temperance and Father Mathew societies.

In this materialistic age men are more concerned about their bodies than about their souls, and the physician is better able to curb intemperance by sound advice than the minister who insists upon a

In the final analysis of the subject presented by Dr. Knopf we find the causes to be (1) improper education, (2) physical defects, (3) faulty social conditions, (4) economic conditions, (5) inherent viciousness.

The treatment indicated would be (1) proper religious and hygienic education, (2) medical treatment, (3) laws remedying the faults stringently enforced. The economic conditions adjust themselves or depend upon Providence for adjustment. Neither priest, physician, nor lawmaker can supply good crops and prosperity. As for the inherently vicious, they will remain in spite of all repressive or suppressive measures, and there are enough of this class to supply the demand of those who require their services.

A word about the pander. There is no law by which this contemptible fellow can be reached. Living on the earnings of the prostitute, driving her out to support him, a tyrant among women and a coward among men, he crushes by force any desire his victim may express to leave her vocation. Fear of his vengeance deters many of the fallen women from seeking an opportunity to reform. Yet he is above the law.

In asking that a more charitable view be taken of those who make efforts to return to respectability, let me recall the words of One who met a woman which was a sinner: "Thy sins are forgiven.
Thy faith hath saved thee."

119 EAST SEVENTY-SIXTH STREET.

HOW PLAGUE IS SPREADING IN VENEZUELA AND TRINIDAD.*

By James F. Donnelly, M. D., New York.

After examining carefully all probable sources I have come to the conclusion that it is shipping that has brought the plague to Venezuela and Trinidad.

It is my opinion that probably in the first instance the disease was brought from the Malabar Coast, India, either by immigrants, merchandise, rats, or other vermin, or by a chartered ship having been in the trade with India.

While we are not so interested in the question as to whence Venezuela received infection, we certainly are concerned in the controversy regarding

the infectious character of the plague.

In February of 1908, while on the Malabar Coast, the Parel Commission advanced the theory that plague is not infectious in the ordinary sense of the word, and that no disinfection or isolation of plague patients is necessary. The Public Health Department received the announcement of this decision with coldness, as it was pointed out that hitherto it had been firmly believed that the spread of plague could only be prevented by the segregation of patients, avoidance of contact with them, and thorough di intection, and that the balance of testimony was in favor of the efficacy of these precautions.

I prefer to be on the safe side, destroying all germs as a preventive measure until this point is more thoroughly investigated; and think the wiser

part for the United States is to take no chances, relax no precautions at any of her seaports until our knowledge of the nature of the plague is greatly increased.

Life is too valuable to be risked in support of a theory, and it will be generally admitted that the removal of any means tending to safeguard it should be undertaken only after the fullest and most care-

ful consideration.

The quarantine imposed by President Castro against La Guayra, which was not very effective, has been removed; and people are now free to go from La Guayra to any part of the Republic, carrying the plague with them; and now that we are in the summer months the disease will spread all over Venezuela unless some good foreign country comes to the rescue, as nothing is being done now to check it by the Venezuelan government.

However, the United States Sanitary Department on the Canal Zone is taking extraordinary measures to prevent the introduction and spread of bubonic plague in the zone by the extermination of rats, and other vermin, and I do not think the United States should be greatly alarmed by the presence of plague in South American ports, for energetic measures have been enforced under the direction of the U. S. Public Health and Marine Hospital Service and Dr. Doty, of the port of New York.

556 FIFTH AVENUE.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVI.—How do you treat acute articular rheumatism?

(Closed July 15, 1908.)

LXXVII.—How do you treat varicose ulcer? (Answers

due not later than August 15, 1908.)

LXXVIII.—How do you treat acute coryza? (Answers due not later than September 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not requires) that the answers be short; if practicable, no one answer to contain more than six hundred

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish.

All papers contributed become the property of the Jounnal.

The prize of \$25 for the best essay submitted in answer to question LXXV has been accurated to Dr. P. A. Smithe, of Enid, Oklahoma, whose article appeared on page 166.

PRIZE QUESTION LXXV.

THE TREATMENT OF CHOLFRA INFANTUM. (Concluded from page 216.)

Dr. L. F. MacKen ic, of Wellileet, Mass., terres:

To properly treat this disease we must bear in mind that it is an acute intoxication occurring in hot weather and affecting not only the stomach and intestines but the system in general. That artificially fed infants are more liable to it than those who are breast fed, and, that any derangement of the alimentary canal is a powerful predisposing factor; that improper food, impure air, overcrowding, and had hygienic conditions are its forerunners; that the depressant effect of the toxines is chiefly exerted on the heart, nerve centres, and vasomotor nerves of the intestine; and that, in consequence of the latter, the intestinal capillaries are dilated, permitting a great outpouring of serum into the bowel, resulting in rapid loss of body fluid.

The treatment may therefore be considered under two heads: 1. Prophylactic. 2. Management of the

attack.

I. Prophylasis.—Very briefly this consists of an abundance of fresh air, pure food, in quantity, quality, and character suited to the age and condition of the infant, and attention to the sanitary condition of its surroundings. Bathing twice daily, oftener on hot days, with cool water, attention to excoriations around the buttocks, and immediate removal of soiled diapers or clothing are necessary. Garments should be light, loose fitting, and of some woolen material, and an abdominal binder worn. Weaning in hot weather is to be forbidden, and any derangement of the bowels, however slight, promptly attended to.

2. Management of the attack.—In so acute and rapidly progressive an affection as this remedial measures, to be effective, must be immediate and energetic, as the tendency is to a fatal termination

in spite of our best efforts.

The indications for treatment are: I. Control the vomiting and diarrhoea; 2, supply fluid to take the place of that lost; 3, combat the depressant effect of the toxines; 4, control fever and relieve other

symptoms present.

I. Stop all food for twenty-four hours and clear the stomach and bowel of offending material. There is no time to wait for drugs to do this, even if retained; so at once wash the stomach with sterilized normal salt solution at 100° F., and flush the colon with a similar solution at 80° F. After this give calomel 2 to 5 grains, in divided doses, to clear the small intestine and in four to six hours again flush the colon. Counterirritation to the abdomen with a light mustard plaster or cloths wrung out of hot mustard water-two tablespoonfuls to the gallonshould be applied and covered with oil silk. Creosote or carbolic acid, one half minim to the drachm of lime water, by the mouth every two hours, have a sedative and antifermentative effect in the stomach. Bismuth subnitrate, 10 to 20 grs., with resorcin, 1/2 to I gr., or sodium salicylate, I to 2 grs., are useful for the same purpose. The bismuth has the advantage of soothing the bowel and checking diarrhœa. Dover's powder is a useful addition to this if the bowel has been cleared and no drowsiness or stupor is present. Opium in any form is contraindicated, till the bowel has been cleared. After the lapse of twenty-four hours albumen water, and rice or barley with raw beef juice may be given in small quantifies at frequent intervals and the quantity cautiously increased, at the same time lengthening the period between feeding

2. To supply fluid and allay thirst hypodermoclysis must be relied on. Eight ounces or more of sterile normal salt solution in divided doses are to be introduced, into the buttocks, abdominal wall, or back near the scapula, in each twelve hours under

strict aseptic precautions. Boiled water in small quantities or small pieces of cracked ice may be given frequently by the mouth and salt solution gently thrown into the colon, some of which will be absorbed.

3. To control restlessness, check peristalsis, after the bowel has been cleared, stimulate the vasomotor nerves of the intestine and regulate the heart and respiration. Morphine, atropine, alcohol, strychnine are the best drugs: Morphine sulphate, 1/100 gr., and atrophine sulphate, 1/800 gr., should be given hypodermically to a child of one year and repeated every hour till relief is obtained. Alcohol in the form of good brandy or whiskey is stimulating, sedative, and saves tissue waste in the process of combustion. They may be given hypodermically or by the mouth, and from one half to one ounce used in twenty-four hours. Strychnine sulphate, 1/150 gr., every four to six hours subcutaneously is a powerful stimulant and is best reserved till signs of collapse appear.

4. For fever employ cold applications to the head and cool sponging with water to which alcohol may be added. If the fever is high use the graduate bath for ten to thirty minutes reducing the temperature of the water to 80° F, and flush the colon with water at 70° to 80° F. Antipyretic drugs

should never be given.

When collapse comes on the temperature becomes subnormal and the extremities cold. Stimulation should be active and food if taken should be warmed. Measures to maintain body heat must be employed. Flush the colon with water at 110° F. and place the child in a hot mustard pack or, bath, using gentle friction at the same time. When removed from this wrap it in hot blankets and surround these with hot water bottles.

Throughout the attack the child should be kept in a large, cool, well ventilated room, and be disturbed as little as possible. To avoid unnecessary handling it should lie on a bed or pillow rather than

the nurse's lap.

If the infant be breast fed the interval between nursings is to be lengthened to four hours, and the time of nursing shortened. Thin gruels with a little raw beef juice and plenty of boiled water should be given to supply the deficiency in food and fluid.

If the child survives the stage of collapse and reaction sets in there is danger of a relapse or that a chronic diarrhoa will develop. Careful regulation of the diet is therefore essential for some time, the quantity and quality being cautiously increased. Milk in any form should be prohibited till convalescence is well established and even then added, with great care, to the food, its proportion being gradually increased. Tonics, hygienic measures, and massage tend to hasten recovery. Laxatives should be avoided for a long time.

Dr. A. Griffin, of Valdosta, Ga., remarks:

Cholera infantum is a disease of such short duration, terminating either fatally, in recovery, or lapsing into a condition of ileocolitis, that the resources at our command for combating this most dreaded disease of infancy are very limited. Treatment must be begun early and directed to the individual case.

It is much easier, in my judgment, to do too much than too little. In private practice, and especially when the mother nurses the child, it is oftentimes difficult to make the family understand that the child is not being starved. Therefore, about the first essential, in the management of the case, is to get the family under control. The first thing I tell the family when called to a case of cholera infantum is that the diet (usually milk) is the cause of the child's illness. I usually ask the mother or nurse if the child does not vomit the milk, curdled, immediately after nursing. The answer almost invariably is that it does. I then tell them that as the milk is disagreeing with the child, which they can see as well as I can, it is absolutely necessary that we take it from the breast or bottle, whichever it may be, for at least twenty-four hours. I try to impress upon the family that there is no danger of the child "starving" in that length of time. With this preliminary preparation of the family there is usually no trouble in managing the diet of my patient, which I consider the most important part of the treatment. The first thing to do is to stop the milk until vomiting ceases. To quench the thirst and at the same time supply the patient with as much nourishment as it can retain, barley water or rice water, may be given when the stomach will retain them. A form of nourishment that I have found to answer as well, if not better than any other, and less often vomited is made by pouring boiling water over toasted bread and allowing to stand for an hour, and then give ice cold in small quantities frequently repeated. One teaspoonful is given, and if retained is repeated in thirty minutes, and if not retained is repeated in one hour. The quantity is increased as the stomach will tolerate it. No other nourishment is allowed for twenty-four house or longer, depending upon the condition of the patient. The milk diet should never be resumed so long as there is vomiting, nor for several hours afterward. Milk is also very sparingly given, so long as there is

The colon is irrigated three or four times in the twenty-four hours with a soft rubber catheter. A saline solution is used, and if there is high temperature, say 104° F. or 105° F., cold water is used, which serves a double purpose—that of cleansing the bowel and reducing the temperature.

If the case is one where there is great prostration with a normal or subnormal temperature, the water is used as hot as the child can well bear it.

Cold sponging serves a better purpose in reducing temperature than any other means in my hands. A temperature of 105° F, or above, that fails to yield to cold sponging, I use the ice pack with.

The cases with a blue surface and subnormal temperature are given the hot mustard bath and put in the hot pack.

As a stimulant, brandy with cracked ice is given when the stomach will tolerate it. If it is vomited, it is then given hypodermatically. Twenty minims to a child one year old, in desperate cases, can be given with safety every two hours. Strychnine in 1/500 gr. doses, hypodermically, every four hours, the given with safety every two hours and submertially that it is a submertial to the safety every four hours.

mically every three or four hours, acts well in my hands. The dose here given is for a child one year

The aim of the physician in the management of cholera infantum is to sustain the vital forces of his patient, eliminate the poisons, and prevent new ones from forming. The last essential is almost solely dependent upon the proper management of the diet.

Dr. John Purman, of Homestead, Pa., observes:

The treatment of cholera infantum is prophylactic, hygienic, dietetic, and medicinal. The true purpose of therapeutics is not only to restore the balance of health in the individual, but to reach much further and aim at perfection, for at the head of all forms of therapy stands preventive treatment. To prevent infection in cholera infantum requires absolute cleanliness of the child; more especially its food and care in its preparation. Milk should be sterilized and pasteurized. During the hot months pure cold water should be given freely to young children, the body protected by proper clothing, and as extreme changes from heat to cold open the way to infection, they should be avoided.

The hygiene of such patients demands careful consideration. They require the maximum of quiet, a uniform temperature, the utmost cleanliness, simplicity of diet, freedom from irritants of all sorts, and the least possible disturbance. The value of fresh air cannot be overestimated. For several years I have urged upon mothers in crowded quarters the value of taking children when ill with this and other gastrointestinal diseases to the country or parks, and keep them there, if only from early morning until late in the evening. These points are high, quiet, cool, and shady. Those who acted on this advice were delighted with the results. An open work hammock or light willow couch in the shade of a tree, with its refreshing breezes during the day, is far superior from a hygienic standpoint in the treatment of this disease than a dwelling with modern conveniences.

If the feeding of infants as now admitted is more important than any other agent in growth, development and repair, how much more essential is a correct understanding of the subject when the digestive organs are deranged or completely disabled by disease? Dietetic regulation is capable of overcoming a large group of disorders which when they persist pass into serious diseases. In cholera infantum neither nourishment nor water should be given (for from eight to twelve or even twenty-four hours) until the stomach ceases to be rebellious. When this point has been passed, water or ice should be given freely, but the diet should be of the easiest digestible character, with no requirement on the part of the normal functions for chemical changes; liquid strained farinaceous decoctions exclusively for the first acute stages; later the condition of the patient will determine the propriety of the administration of other articles of food, such as jellies without sugar, beef or mutton broths with farinaceous decoctions, egg albumoses, or alcoholic and

The medicinal indications are to clear out the gastrointestinal canal, check fermentation, and eliminate the toxines. Nature attempts to do this

by producing emesis and diarrhea. The most efficient remedy is calomel given in fractional doses (1/10 to 1/4 grain) every half hour for from six to ten or even twenty-four hours. It not only accomplishes all that the other remedies (magnesia, castor oil, or salts) do, but it is not so likely to be vomited, in fact it has a tendency to stay it. It stimulates the cells of the liver, the great compensatory organ of the abdominal viscera, to increased activity; equalizes the portal circulation by inviting the excess flow from the intestines to that organ, hence is more efficient in eliminating the toxines. Wash out the large intestines by high normal saline injections; this, at the same time, reduces temperature, replaces a certain amount of fluid in the blood and tissues, which have been lost through frequent vomiting and intestinal discharges. It flushes the kidneys, which are quite likely to become congested. If the temperature is high, tepid or cold water should be used, but in cases of extreme prostration, hot irrigations and hot baths (108° to 110° F.) are demanded. I doubt the propriety of hypodermoclysis, except in threatened collapse. It is seldom necessary to use the stomach tube; shock of it to the little patient is very great, but if vomiting persists for twentyfour hours, it may be necessary. If stimulants are demanded strychnine and brandy should be given and external heat applied. To check fermentation, bismuth subgallate (5 to 15 grains), combined with mercury with chalk (1/8 grain) has seemed to be When the stools are very green and excoriating, lactic acid (in 2 to 5 drops doses) diluted with water has been beneficial. In our effort to clear out the intestinal canal and check fermentation we at the same time aid in eliminating from the circulation the toxines that cause fever, convulsions, collapse, and death. After the intestinal tract has been thoroughly cleansed, if there is pain or loss of sleep, tenesmus, or cardiac weakness, I do not hesitate to administer a dose or two of opium, preferably morphine (1/50 to 1/30 grain) hypodermically. I would not, however, leave opiates in the hands of nurse or mother to be given in repeated doses. Astringents should be deferred until the acute stage has passed, as they might tend to prevent elimination.

The fact for the physician to keep in mind is that cholera infantum is a disease in which it is easy to do too little, but it is far easier to kill the patient in the hurry and haste of fighting the disease. When the acute symptoms have subsided, great care is still required, and both the mother and nurse must be impressed with the fact that diet is far more important than drugs. I have had no experience with serum or vaccine therapy in this disease, and space will not permit the consideration of the treatment of sequelæ.

Dr. Hans G. Baumgard, of New York, states:

Cholera infantum is mentioned along with summer diarrhœa, gastrointestinal catarrh, gastroenteritis, as a synonym of acute gastroenteric intoxication. It is but a severe type of gastroenteritis. Since the ætiology of the disease has been definitely settled as of bacterial origin, the treatment resolves itself into a, prophylactic; b, dietetic; c, medicinal and mechanical treatment.

A word more as to the ætiology, for one can only properly treat cholera infantum with a correct understanding of it. Milk is the key note; for no better culture medium can be imagined for the growth of bacteria. Add to this unhygienic surroundings and a continued minimum temperature of 60° F, and the bacteria flourish. Nature has showed us the way; the diarrhea is but the safety valve by means of which the body gets rid of the bacteria and the products of their growth. To stop the diarrhea is as unwise as to prevent the safety valve of an engine to properly functionate.

Taking up the division of treatment as mentioned. we first take up prophylaxis. Cleanliness is the great secret. Clean bottles, clean nipples, and, above all, clean, pure milk. The supply of pure milk to the poor, as conducted in New York, Boston, Rochester, etc., on a large scale has done wonders to lessen the number of victims. To be doubly sure, have all milk heated to 212° F. for one hour. Attend to all minor derangements of the stomach or bowels promptly. Avoid weaning in the summer months as much as possible. Breast feeding is a good guarantee, although breast fed infants are by no means exempt from the disease. Pay strict attention to the intervals of feeding and the quantity, for be the quality of the milk ever so good, too much will do harm. Rather cut down the amount of feeding and add boiled water to the diet list during the summer months.

b. Dietetic Treatment.-We have seen what a splendid culture medium milk is for the growth of bacteria, hence the first thing to do in a case of cholera infantum is to stop all milk. And I wish to be emphatic, because mothers will come and say, although explicit written instructions had been given: "O, doctor, I thought I could give the baby whey," or, "I only added a tablespoonful to the bar-ley gruel." There is no difference whether a teaspoonful be given or a pint, the crime is in giving milk. The diet should consist of barley water, this to be given in amounts according to the age of the infant. Oatmeal or rice gruel may be added. In older children vegetable soups may be given after the second or third day, also the volk of an egg beaten in with rice or oatmeal gruel. When the child's bowels move but once a day, and not more than the ordinary amount of mucus is present, the regular diet can be resumed very cautiously. Errors in this respect are sure to be followed by a

c. Medicinal and Mechanical Treatment.-The one drug that has given me the best satisfaction in these cases is calomel. The dose should be liberal, I grain twice daily for an infant of six months. This should be kept up until the diarrhœa subsides and then salol in 1/4, 1/2, or I grain doses twice daily will prove valuable as an intestinal antiseptic. Mechanically we get rid of the bacteria and their toxines by irrigations of the colon. A quart and a half of water, temperature 104° F., is injected into the colon three or four times daily, according to the severity of the case. Irrigation of the colon can be kept up for weeks without harm, gradually reducing to once daily. Vomiting, which is quite a frequent symptom, is treated by stomach washing, which can be performed readily, even in an infant a few

weeks old. The toxines thus resecreted by the stomach are effectually removed. Plain warm water, a rubber catheter, No. 16 French, with a funnel attached or connected with an irrigator, is all that is necessary. For stimulation no drugs are indicated, but weak tea sweetened with a little sugar will be found very effective as a stimulant. In desperate cases, where the tissues are like parchment and the system almost dried out from the removal of fluids, prompt hypodermoclysis of normal saline solution often saves a hopeless case.

Therapeutical Aotes.

Cardiospasm.—This is a name applied to a spasmodic contraction of the cardiac extremity of the stomach, and is, perhaps, a more frequently undiagnosticated condition than has been thought (Journal of the American Medical Association for July 11, 1908). Dr. Charles A. Wingerter, of Wheeling, W. Va., in the West Virginia Medical Journal, December, 1907, describes this condition. It occurs in "two forms: as a transitory paroxysmal affection lasting a few hours or even a couple of days, or as a chronic condition which may extend over a number of years." The acute cramp is short and painful, and is difficult to diagnosticate. The chronic type of cardiospasm is a more serious affection, as it interferes with the general nutrition of the patient and soon makes him an invalid. The author lays stress on the order of the symptoms as diagnostic, viz., early spasmodic pain, later regurgitation, and still later, retention of food a greater length of time after the meal before the regurgitation takes place. The pain comes on suddenly, and often radiates to the back or neck. In the intervals the patient is apparently well. After some weeks this spasm of the cardia causes a dilatation of the lower end of the œsophagus. From this time on the pain, distress, and regurgitation are more or less continuous, and emaciation begins. Soft food may still pass through the narrowed cardia, and if enough liquid and soft food is taken, the nutrition may keep fairly good and the regurgitation from the diverticulum may even become less frequent. The reaction of this regurgitated food is always alkaline, it is not acid, showing that it did not come from the stomach.

The cause of cardiospasm may be an ulceration, a new 'growth, hyperchlorhydria, or hyperæsthesia of the mucous membrane at the cardia. This, of course, may occur with neurasthenic and hysterical patients, but is probably often present when patients are considered neurasthenic and may be the cause of the neurasthenia. It occurs in both sexes and at any age. In the treatment of this condition, of course, if possible all local irritation must be removed, as gastritis or hyperchlorhydria. Some patients have the spasm of this muscle as a neurosis, especially when certain articles of food are eaten, particularly when by some previous experience they have found that such and such a food was followed by this udden pain and perhaps regurgitation, Such patients need aggestive treatment, as, if the patient can be made not to expect the attack, almost any food may be taken without harm. A spasm being present, morphine or codeine will stop it. Antipyrine has been recommended, and some patients do well with bromides. In its primary stage, no tangible cause being found, the patient should be treated as a neurotic.

Keratin Injection for Cirrhosis of the Liver.— Good results have been obtained by Zypkin in the treatment of cirrhosis of the liver by the hypodermic injection of a solution of keratin of the following composition:

The treatment is said to be useful in the treatment of sclerosis of other organs, such as the kidneys and heart, and a scientific explanation of the action of keratin on the constituents of the tissues is given.

—Wiener klinische Wochenschrift, 1907, No. 24;
Les nouveaux remèdes, July 8, 1908.

Paste Dentifrice.—The following is a simple combination that may be recommended where conditions warrant its use:

| \mathbf{R} | Potassium chlorate, | 3v | |
|--------------|--|----|---|
| | Medicinal soap basis (pure Castile soap),3ii | | |
| | Calcium carbonate, | | |
| | Oil of peppermint,gtt. | | |
| | Oil of cloves,gt. | 1V | 2 |
| 3.6 | Glycerin, enough to make a paste. | | |

Gargle for Quinsy.—According to Journal de médecine de Paris for June 27, 1908, Guisez uses the following gargle in the treatment of amygdalitis:

| \mathbf{R} | Carbolic acid, | xv; |
|--------------|----------------------|-------|
| | lycerin, | |
| | Tenthol,gr | . v; |
| | Cherry laurel water, | . 3v. |
| M. | | |

Sig.: A tablespoonful to be dissolved in a glassful of hot water and used as a gargle morning and evening.

Carron Oil for Alleviating the Pain of Acute Dermatitis is recommended by Sabouraud (Bulletin général de thérapeutique, June 15.1908), especially in cases where the skin affection has been produced by the free use of drugs like oil of turpentine and the bleaching compounds that are used in laundries.

Guaiacol in the Treatment of Pulmonary Tuberculosis.—The following methods of administering guanacol are cited in La Clinique for July 3d:

| Pills: |
|---|
| B Guaiacol, crystalline,gr xxxv |
| Tannin, |
| Extract of cinchona, |
| M. Ft. pil. xxiv. |
| Sig.: One to three pills every three hours. |
| Cachets: |
| B Guaiacol, crystalline, |
| Calcium triphosphate, |
| M. Ft. cachet xxiv. |
| Simon One attended to the Author |

- Solution in oil:

 B Guaiacol, crystalline, 5iiss;
 Codliver oil, Oil.
- Sig.: One tablespoonful two to four times a day.
 - Almond off, sterilized at 238 Page 1. La equal parts.
- Sig Give forty to titty drops in about three ounces of warm water as an enema daily.

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MINERS' NYSTAGMUS.

The president of the British Medical Association, Mr. Simeon Snell, F. R. C. S. Edin., made this the chief scientific topic touched upon in his address at the recent annual meeting, held in Sheffield. address appears in the British Medical Journal for August 1st, and advance sheets have kindly been sent to us. Mr. Snell, who is an ophthalmologist, regards nystagmus as preeminently a disease of coal miners--indeed, almost exclusively a disease of such workmen. He has had exceptional opportunities of studying it, for Sheffield, the field of his activities, is the centre of a great coal mining industry as well as the seat of famous manufactures in metals, notably the production of cutlery, which has made it conspicuous as the scene of development of another occupation disease, grinders' phthisis.

Mr. Snell believes that nystagmus as seen in coal miners is the product of a particular form of eye strain. Much of the work of the miners, it seems, requires them to crawl prostrate along low excavations and at the same time to keep constant watch of the roof of the particular excavation in which they are at work. Hence there is an almost constant strain on the muscles that roll the eyeballs upward, and nystagmus is apt to be the result. He does not go into the matter of the mechanism of the nervous genesis of nystagmus, as Gowers and others have done (see the next article). He thinks that the great liability to nystagmus on the part of miners might largely be done away with if provision could be made for enabling them to advance erect in their

work, but he fears that considerations of an economical character will continue to stand in the way of the adoption of such a protective measure.

Fire damp, as all the world knows, is a source of danger against which the miners must always be on guard. So special is the observation requisite to detecting the presence of this fatal gas in small amounts that in the English mines men known as "deputies" or "firemen" are depended upon to precede the miners at stated times, to detect the presence of fire damp, which they do by observing whether there is or is not a visual appearance known as a "cap" over the oil flame of the safety lamp. It appears that these "deputies" have often in their inspections failed to notice the warning "cap," and that a fatal explosion has occurred soon afterward. In that event it has occasionally happened that a "deputy" has been blamed and even punished for dereliction of duty, but Mr. Snell is inclined to believe that it is oftener on account of incapacity than by reason of carelessness that a "deputy" has failed to detect danger, for he finds that these employees themselves are prone to contract a degree of nystagmus which virtually precludes their perception of the "cap." The whole subject is certainly one of great practical interest to everybody concerned in coal mining.

THE MECHANISM OF NYSTAGMUS.

"The precise origin of nystagmus is still obscure" writes Sir William Gowers (Proceedings of the Royal Medical Society, June). That the oscillation of the eveballs which constitutes the symptom obviously depends on the alternate contractions of the opposite muscles has been grasped for some time, and the movement when slow and wide in range in the horizontal plane is seen to best advantage. How does this alternation come about? Sherrington's observations on automatic centres are of value in the interpretation of nystagmus. Thus, in his spinal animal, agonist and antagonist muscle groups pass into rapidly alternating automatic movements due in large part at least to the fact that the spinal centres contain a mechanism which, if unrestrained, automatically develops an alternate contraction of opposing muscles. These alternate contractions, Gowers says, seem to be essentially the same as those presented in well marked nystagmus. In the case of horizontal nystagmus, the external rectus moves the eye outward, and just before it reaches its full degree of contraction it suddenly ceases to contract, and at the same time its opponent, the internal rectus, contracts, and brings the eve back, a little more slowly. But, just before it reaches the middle position, this muscle in turn ceases to contract and the external rectus resumes its action, and so on, in continued automatic alternation.

This leads Gowers to ask if nystagmus is really a muscle reflex alternation between the antagonistic ocular muscles. Difficulties spring up, however. Neural spindles are a necessary part of the mechanism, and these, it has been thought, are absent in the ocular muscles. But Buzzard has recently disproved this. The spinal animal is an animal without a will, so to speak. But this does not seem to be the rule with disorders which show nystagmus, for here the lesions appear to be located in the midbrain, the pons, and the cerebellum and its connections. A midbrain ocular centre seems needed to combine and coordinate the various ocular movements so that binocular vision shall result, and Gowers believes that nystagmus depends on a disorder of such a midbrain centre, and that, although at first it may occur only when the voluntary impulse energizes the centre, the reciprocal action that is most disturbed may display an independence of the will and even opposition to it, so far as the direction of the quicker movement is concerned. The disturbance of the muscle reflex action, he suggests, is due to some insubordination of part of this midbrain centre.

PROPHYLAXIS IN SURGERY.

This was the title of the address in surgery delivered at the recent annual meeting of the British Medical Association by Mr. R. J. Pye-Smith, consulting surgeon to the Sheffield Royal Hospital. From a perusal of the advance proof slips which have kindly been furnished to us we infer that the address must have been most interesting to those who heard it read, chiefly because of the multiplicity of directions in which, as the author pointed out, surgery is really preventive in its objects, a variety that might not readily occur to one who had not made some special study of the subject. In a certain sense, of course, the aim of all surgery, as of all medicine, is prophylactic, but perhaps we are apt to overlook the immediate ills that it has for its object to prevent.

Surgical prophylaxis is directed, not only against the evils that are likely to happen if a certain procedure is not carried out, but also against such faults in the procedure itself as may render it vain or even destructive. It is in the direction last mentioned that asepticism, Lister's grand achievement, stands forth as the commanding feature. It is now little more than a platitude to remark that Listerism has opened new fields to surgery, yet it is only within the memory of many men who are now living that this new domain has been made over to the

surgeon, and most of us little realize the extent to which asepticism pervades the surgical work of the present time.

The great things to prevent in connection with a surgical operation, as Mr. Pye-Smith reminds us, are pain, shock, hæmorrhage, and septic infection. As regards pain, we have now so many and such various means of producing general or local anæsthesia that only an infinitesimal risk need be incurred in its induction and maintenance, though we still, as he remarks, need something better than morphine to allay the pain that so often follows recovery from the effects of the anæsthetic. To prevent or lessen shock, we must not carry to excess the fasting prescribed as a preliminary to anæsthetization, and we must take care that the subsequent exhausting vomiting be reduced to a minimum; we should administer the anæsthetic before the patient is brought into the operating room, so as to spare him the consternation which is almost inseparable from a sight that to him must be formidable; we should guard against all unnecessary chilling of his person, as when too large a surface of his body is exposed at once in procedures for disinfecting the parts surrounding the field of operation or too long a time is devoted to those processes or avoidable delay is suffered to occur for any other reason; and we should prevent unnecessary loss of blood. Hæmorrhage we can almost always guard against by the use of a sufficient number of hæmostatic clamps. Septic infection is generally to be prevented by strict adherence to the rules of Listerism. Though we cannot prevent a tumor, we can by judicious intervention often prevent its grave consequences, such as its continued growth, its pressure upon important parts, and its malignant degeneration, as in the case of fibromatous uterine growths. These are some of the ways in which surgery acts prophylactically, and many others were pointed out in the address.

THE PARASITIC AMŒBÆ.

The study of protozoan parasites by bacteriological methods is in every way desirable. For a long time this end seemed impossible of attainment, until Novy and MacNeal succeeded in cultivating Trypanosoma Lewisi, in 1903. In 1904 Musgrave and Clegg published the results of their attempts to cultivate Amaba coli, and in 1906 Leonard Rogers succeeded in demonstrating developmental forms of Leishmania Donovani in test tubes. These successes point the way to future developments in the line of the study of the parasitic protozoa in vitro.

In the February number of the Journal of Med-

ical Research there is an article by Dr. Ernest Linwood Walker on the parasitic amcebæ of the intestinal tracts of man and other animals, in which he reviews the question of the cultivation of these organisms on artificial media, their methods of reproduction, their nomenclature, and their distinctive characteristics. He finds that the essential requirements in the cultivation of amcebe on artificial media are a solid medium, which is slightly alkaline in reaction; the presence of living bacteria in the culture, on which the amcebæ may feed; and moisture, oxygen, and a temperature of from 20° to 25° C. (68° to 77° F.).

The author describes a most ingenious method of cultivating amœbæ on cover glasses. He spreads the agar medium on a clean cover glass and allows it to harden; he then plants the organisms and mounts the cover glass on a hanging drop slide sealed with vaseline. In this way the entire life history of the organisms may be watched, with a twelfth inch oil immersion lens if desired. The cover glass may be removed at any time during the development of the amœbæ, and the organisms may be fixed and stained. For the purpose of fixation, Zenker's fluid has given the best results, and for staining, Mallory's chloride of iron hæmatoxylin has been found most satisfactory.

By this method Dr. Walker has been able to elucidate many points in the life histories of the parasitic amœbæ. 'The schematic life history, as represented in a drawing, starts with an individual possessing amæboid movements. This individual divides into two individuals, probably by amitotic division, possibly by caryocinesis. One of these individuals may become encysted; the other may reproduce by the formation of spores. If the latter method occurs, the spores, which at first appear as fine refractive granules, gradually increase in size, and are extruded in from twenty-four to forty-eight hours. Each spore develops into an individual which is possessed of amœboid movements and goes through the same life cycle. From the encysted stage, which all amœbæ show at some time, the organisms become amœboid individuals.

Walker has thrown doubt on the accuracy of the observations of Schaudinn, who divided the parasitic amœbæ of man into Entamæba coli (nonpathogenic) and Entamæba histolytica (pathogenic). He believes that there is but one species, although he subsequently describes an organism which he calls Amæba hominis, which is different in its cultural characteristics from Amæba coli. He points out that the characters of the encysted stage of the parasites are of more value in determining species than the number of pseudopoda and the other characteristics of the amœboid stage.

From a study of forty-four cultures of parasitic amœbæ the author concludes that there are ten well defined species: Amæba coli, Amæba hominis, Amæba cobaye, Amæba musculi, Amæba ranæ, Amæba gallopavonis, Amæba muris, Amæba intestinalis, Amæba enterica, and Amæba fæcalis. The latter amæba has a very extended range of hosts. The question of pathogenic species can finally be solved, according to the author, only by the correlation of cultural, morphological, experimental, and anatomical studies.

PHYSICAL EXERTION BY CON-SUMPTIVES.

There is a widespread feeling in the profession to the effect that many a consumptive has seriously impaired his chances of recovery by injudicious horseback and other exercise. No doubt the feeling is well founded, but we must not suffer ourselves to fall into the belief that the "lunger" needs to become a lifelong loafer. What we should do, and what sanatorium supervision actually does, is to discriminate between the cases in which physical exertion is allowable or even advantageous and those in which, for a time at least, it is detrimental. This was clearly pointed out in the address in medicine delivered at the recent meeting of the British Medical Association by Dr. James Kingston Fowler. dean of the Faculty of Medicine of the University of London. The address, of which we have been favored with advance proof slips, dealt with many topics of great interest, chiefly those connected with the so called "vaccine" treatment of infectious diseases, and only incidentally with the question of work for consumptives, but that is such a vital matter for those who have to earn their living that we single it out for mention here.

Dr. Fowler tells us that a system of graduated labor devised by Dr. M. S. Paterson has for three years been in operation at the Frimley Sanatorium of the Brompton Hospital. In the course of two vears and a half the patients, to the number of 344. built a reservoir 108 feet long, fifty-eight feet wide, and thirteen and a half feet deep, capable of holding half a million gallons of water. In the excavation they had to remove 4,175 tons of earth and convey it to points of varying distance in baskets or barrows, mix and lav a thousand tons of concrete, and perform much other labor of a lighter character. He reports that at the present time 253 of these patients are earning their living, nine are not at work, eight have died, and seventy-four have failed to report. Speaking of the general run of the old patients, he says: "No one who has watched the change in the physical condition which in the course of six months or less occurs in these patients when

daily engaged in graduated labor, a change so great that at the end of their treatment they look more like navvies than consumptives, can imagine that a like effect can ever be produced by the administration of any drug."

It is largely with the aid of attention to the opsonic index, as we understand it, that this system of graduated labor has been carried out with such happy results. Dr. Fowler does not go into details with regard to this point, but refers us to Dr. Paterson's original exposition of the plan in a paper read before the Medical Society of London and published in the Lancet for January 25, 1908 (abstracted in our issue for February 15th, page 321). The accomplishment of such an enormous piece of work by sick men-sick with a disease which but a few years ago was almost universally regarded as hopeless-is certainly a striking proof of our advance in the management of pulmonary consumption, and it goes far to justify Dr. Fowler's contention that medicine has progressed as much as surgery in recent years.

Aews Items.

Plague in the Azores.—According to press dispatches, bubonic plague is spreading in Terceira Island. Twelve deaths were reported between July 27th and August 4th.

Personal.—Dr. Charles A. L. Reed, of Cincinnati, was recently made a Chevalier of the Legion of Honor by the Government of France. Dr. Reed is also a candidate for the Legion States Secret

The Pennsylvania State Board of Medical Examiners awarded certificates, which will allow the recipients to practice medicine in Pennsylvania, to 362 candidates out of a total of 395 who presented themselves for the examinations.

The Pennsylvania State Dental Examining Board has just granted license to practice dentistry to one hundred and seventy-six candidates after the annual examinations, held in Philadelphia and Pittsburgh. Thirty-six candidates failed to pass the examinations.

A New Hospital for Tarrytown, N. Y.—Mr. John D. Rockefeller has contributed to the building fund of the new Tarrytown Hospital the sum of \$25,000. The money is given on condition that the people of Tarrytown raise \$50,000 more.

A New Permanent Ward on the Boston Floating Hospital.—A new permanent ward with twenty beds was opened on the Boston Floating Hospital recently. When all these beds are occupied there will be one hundred and twenty permanent patients in the hospital.

A Tuberculosis Hospital in Rensselaer County, N. Y. Y. Y. An appropriation of \$25,000 has been made by the Renselaer County Board of Supervisors for the erection of a hospital for the treatment of advanced cases of tuberculosis. The institution will accommodate about sixty-five patients.

Contagious Diseases in Chicago.—During the week ending July 25, 1908, the following cases of transmissible diseases were reported to the Department of Health: Diphtheria, 55; scarlet fever, 40; measles, 38; typhoid fever, 21; whooping cough. 37; tuberculosis, 48; chickenpox, 1;

A Military Hot Springs Hospital in the Philippines.—
We are the The Wilton, in our that the military hospital at Camp Eldridge, Laguna, has been officially designated as a sanatorium for the special treatment of disnished by thermal springs.

Charitable Bequests.—By the will of Elizabeth Norris, the Home of the Merciful Savior for Crippled Children, of Philadelphia, receives \$10,000. The Home of the Merciful Savior is also mentioned as a contingent legatee. By the will of Angust Riedel, \$9,000 is bequeathed to the German Protestant Home for the Aged, at Lawndale, Pa.

The Des Moines Valley, Ia., Medical Association elected the following officers at its seventh annual meeting, which was held recently: President, Dr. L. A. Rogers, of Oskaloosa; first vice president, Dr. F. T. Stevens, of Mount Pleasant; second vice president, Dr. C. B. Powell, of Albia; secretary and treasurer, Dr. Fred Bowles, of

The Southwestern Medical Alumni Association, which is the alumni association of the medical department of the Southwestern University, Dallas, Tex., was organized recently, with the following officers: President, Dr. Sessler Hoss, of Muskogee, Okla.; vice president, Dr. W. B. Correll, Dallas, Tex.; secretary and treasurer, Dr. J. H. Block, of Dallas, Tex.

The Health of Michigan.—During the month of June, 1908, the following cases of communicable diseases were reported to the State Department of Health: Pneumonia, 84 cases; tuberculosis, 55 cases and 205 deaths; typhoid fever, 74 cases; diphtheria, 115 cases; meningitis, 46 cases and 52 deaths; whooping cough, 80 cases; scarlet fever, 162 cases; measles, 542 cases; smallpox, 124 cases.

The South Piedmont Medical Society held its sixth stated meeting in Lynchburg, Va., recently, and elected the following officers: President, Dr. H. B. Mohr, of Houston; first vice president, Dr. G. W. Cocke, of Danville; second vice president, Dr. W. L. Williams, of Brookneal; third vice president, Dr. J. A. Owen, of South Boston; treasurer, Dr. J. L. Kent, of Lynchburg. The next meeting will be held in November.

The Health of Pittsburgh.—During the week ending July 25, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 39 cases, 5 deaths; scarlet fever, 11 cases, 0 deaths; diphtheria, 8 cases, 0 deaths: measles, 40 cases, 7 deaths; whooping cough, 5 cases, 2 deaths; pulmonary tuberculosis, 22 cases, 10 deaths. The total deaths for the week numbered 163 in an estimated population of 565,000, corresponding to an annual death rate of 15,00 in 1,000 of population.

Hæmatological Tests on Arctic Explorers.—It is reported that the crew of the Peary Arctic steamer Roose-velt will be subjected to certain blood tests, with a view of obtaining some data regarding the effect of climatic conditions on the blood corpuscles. The tests, according to reports in the Halifax newspapers, are to be conducted by Dr. George M. Randall, of Lowell, Mass., who will go to Sydney for that purpose. Biological examinations will be made of the blood of various members of the crew before they sail, and further tests will be made on their return from the polar regions. Dr. Randall represents the American Hæmatological Association of Washington.

Civil Service Examinations to be Held in the Fall of gos.—Examinations under the rules of the United States Civil Service Commission will be held soon for the following positions: Physician in the Indian Service; Physician in the Isthmian Canal Service; Acting Assistant Surgeon in the Public Health and Marine Hospital Service; Surgeon in the Coast and Geodetic Survey; Trained Nurse in the Indian Service; Trained Nurse in the Isthmian Canal Service; and Trained Nurse in the Philippine Service. Application forms and information in regard to these examinations may be obtained by addressing the United States Civil Service Commission, Washington, D. C.

The Mortality of Baltimore.—During the week ending uses 1, 1908, there were reported to the Department of Health of Baltimore 200 deaths from all causes, as compared with 255 for the corresponding period in 1907. The annual death rate in 1,000 of population was 16,40 for the white population, 24.00 for the colored, and 17.61 for the total white and colored. The principal causes of death were: Typhoid fever, 6; whooping cough, 5; scarlet fever, 1; diphtheria, 2; consumption, 28; cancer, 9; organic heart disease, 10; pneumonia, 6; Bright's disease, 9; diarrhea and enteritis (infants), 38; diarrhea and enteritis (adults), 6; congenital debility, 18; old age, 1; suicides, 2; accidents, 9.

The Washington State Medical Association.—The annual meeting of this association will be held in Walka on September 7th, Sth. and oth Among those who have promised papers are Dr. J. C. Bloodgood, of Baltimore; Dr. J. R. Pennington, of Chicago; Dr. Paul Gronerud, of Chicago; Dr. H. D. Niles, of Salt Lake, Utah; and Dr. R. C. Coffey, of Portland, Ore. Every effort is being made to make this meeting one of the most successful in the history of the organization.

Two New Hospital Ships for the Navy.—It is reported that Surgeon General Rivey of the United States Navy will recommend that the next congress be requested to make an appropriation for the construction of two modern hospital ships, large enough to accommodate all the sick of any fleet to which they may be attached, and provide patients with the comforts and expert treatment to be had in a large hospital. The value of the hospital ship is being demonstrated by the Relief, which is accompanying the Atlantic battieship fleet on its voyage around the world.

Medical College Merger.—Announcement is made of the amalgamation of the Louisville Hospital and College of Medicine, the Kentucky School of Medicine, and the Medical Department of the University of Louisville, the new institution to be known as the Medical Department of the University of Louisville. The merging of these three medical schools, which has been agitated for several months, gives to Louisville one of the largest and best equipped medical schools in the South. A committee has been appointed to rearrange the faculty for the new institution.

Atlanta, Ga., Sanitary and Tuberculosis Society.—A

Atlanta, Ga., Sanitary and Tuberculosis Society.—A meeting of this society was held on the evening of July 31st. The new constitution was read, and will be adopted at the next meeting of the society. A committee, composed of Dr. J. L. Campbell, Dr. Claude Smith, and Dr. E. C. Thrash, was appointed to present to the senate resolutions on the need of a State sanatorium for the treatment of tuberculosis patients. Dr. Thrash read a paper entitled What the State Can Do to Prevent Tuberculosis, and Dr. Smith read a paper entitled What the Municipality Can Do to Prevent Tuberculosis.

A Medical Library in Nashville, Tenn.—A medical library, consisting of over four thousand volumes, will soon be opened to the physicians of Nashville and the surrounding country. Three thousand volumes were donated by the late Dr. Richard Douglas, and the other 1,400 volumes were obtained by Dr. M. M. Cullom. The meetings of the Nashville Academy of Medicine will hereafter be held in this library, which is in the Carnegie Library Building, and the weekly meetings of the scientific societies will also be held in the library, thus making it a medical centre for the city. Arrangements are being made for a series of popular lectures at the library during the winter. The committee in charge of the library work consists of Dr. W. D. Haggard, chairman, Dr. M. M. Cullom, Dr. R. E. Fort, and Dr. Holland M. Tigert.

Vital Statistics of New York.—During the week ending July 25, 1908, there were reported to the Department of Health 1,508 deaths from all causes, as compared with 1,507 for the preceding week, and 1,489 for the corresponding period in 1907. Of the total number of deaths 799 were in Manhattan, 146 in the Bronx, 481 in Brooklyn, 93 in Queens, and 49 in Richmond. The annual death rate in 1,000 of population was 18,50 for the whole city, as against a death rate of 22.05 for the corresponding period in 1907. The death rates for the five boroughs were as follows: Manhattan, 18,18; the Bronx, 23,25; Brooklyn, 16,81; Queens, 20,86; Richmond, 33,33. The total number of deaths of children under five years of age was 730, of which 424 were due to diarrhoad diseases. There were 2,630 births.

The Playground Association of America will hold its second annual congress in New York during the week of September 7th. President Roosevelt is honorary president and Dr. Luther Halsey Gulick, director of physical culture in the New York public schools, is president of the association. Mayor McClellan has been appointed honorary president of the congress, and invitations have been issued to the mayors of all the larger cities of the United States. The meetings will be held in the American Museum of Natural History. A great harvest festival will be held in Central Park, similar to the play festival held in Chicago in

1607, which will serve to demonstrate the value of the work and the interest taken in it. The programme will include addresses by Governor Hughes, Mr. Jacob Riis, Superintendent Maxwell, Mr. Joseph Lee. of Boston, and Dr. Woods Hutchingon.

The Mortality of Chicago.—During the week ending July 25, 1908, there were reported to the Department of Health 513 deaths from all causes, as compared with 526 for the preceding week and 548 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.35, as against 12.66 for the preceding week. Of the total number of deaths, 126 were due to diarrhoad diseases, of which eighty-six per cent. were of children under two years of age. The principal causes of death were: Apoplexy, 5; Bright's disease, 39; bronchitis, 5; cancer, 26; consumption. 49; convulsions, 5; diphtheria, 6; heart diseases, 34; intestinal diseases, acute, 126; measles, 2; nervous diseases, 24; pneumonia, 21; scarlet fever, 2; suicide, 7; sunstroke, 1; tetanns, 3; typholif fever, 5; violence (other than suicide), 42; whooping cough, 2; all other causes, 109.

Infectious Diseases in New York:

We are indefted; the Invent of Records of the Department of Health for the todiscent statement of new cases and deaths reported for the two weeks ending August 1, 1008;

| | La | 1 25- | 1 22 ! | |
|--------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmoralis | | | 4 1 | 154 |
| Diphthera | | | | |
| Measi's | | | | |
| Scarlet fever | 131 | 9 | 123 | 4 |
| Smally v | | | | |
| Varicella | | | 14 | |
| Ty hort ty to a constant | | - 5 | | |
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Assembly of Kentucky recently made an appropriation for the purpose of encouraging the establishment and maintenance by private contributions of sanatoria for the care and treatment of the tuberculous. The bill provides, we learn from Charities and the Commons, that any sanatorium established by private contributions, which is not to be operated for profit, shall be entitled to receive annually from the State a sum equal to twenty per cent. of the amount involved in establishing and equipping it. It is further provided that no sanatorium shall receive in any one year an amount of money in excess of \$350 a year for each bed maintained, and that it shall not be entitled to receive aid unless it is actually established, is receiving and caring for patients, and has been in actual operation for a period of six months. The General Assembly passed another bill authorizing the establishment of a State sanatorium for consumptives to be maintained wholly by the State, but this measure was vetoed by the governor, on the ground of economy.

Philadelphia Bureau of Health Statistics.-During the month of June, 1908, in the Division of Medical Inspection, 1,871 inspections were made, exclusive of schools; 980 funigations were ordered; 30 cases were referred for special diagnosis; 5.190 visits were made to schools; 317 children were excluded from school; 141 cultures were taken; 100 injections of antitoxine were given; and 213 persons were vaccinated. In the Division of Vital Statistics 1,748 deaths, 2,954 births, and 1,180 marriages were recorded. In the Division of Milk Inspection 10,251 inspections were made of 238,241 quarts of milk, of which 234 quarts were condemned. Five specimens were examined chemically, and 1,258 were examined microscopically. In the Division of Meat and Cattle Inspection 2,829 inspections were made; 52 were found unsanitary; 281 pieces of dressed meat were condemned; 984 postmortem examinations were made; and 200 carcasses were condemned. In the Division of Disinfection 245 fumigations were done for scarlet fever, 287 for diphtheria. 53 for typhoid fever. 250 for tuberculosis, and 149 for miscellaneous diseases. Thirteen schools were fumigated. In the Bacteriological Laboratory 800 cultures were examined for the presence of bacillus diphtheriæ; 288 specimens of blood were examined for the serum diagnosis of typhoid fever; 1,258 specimens of milk were exemined; 150 specimens of sputum were examined; and 2,372,500 units of antitoxine were distributed.

Tuberculosis Exhibits at County Fairs .- A novel feature in the modern crusade against tuberculosis will be the holding of tuberculosis exhibits at the various county fairs throughout the State of New York. The State Charities Aid Association of New York is actively engaged in the preparation of six exhibits, which are soon to be started on tours through the State to be exhibited at thirty-six different county fairs. In addition to the pictures, literature words, see here photographs will be averaged. erature, models, etc., large phonographs will be employed having special records which will give much information on the subject of the cause and prevention of tuberculosis Each exhibit will be in charge of trained experts prepared to give any information desired by the public. Every phase of the disease will be dealt with in a thoroughly scientific manner, and at the same time the subject will be presented with a vividness that will awaken interest. In the State of New York there were last year 14,406 deaths from tuberculosis, and it is said that the disease is almost as preva lent, in proportion to the population, in the small towns and rural districts of the State as in the large cities. It is the purpose of these traveling exhibits to arouse the people to a realization of the extent of tuberculosis in the State and to show them how it may be cured if taken in time and how it may be prevented.

The Health of Philadelphia.—During the week ending July 25, 1908, the following cases of transmissible diseases were reported to the Burcau of Health: Malarial fever, I case, o deaths; typhoid fever, 44 cases, 4 deaths; scarlet fever, 19 cases, 4 deaths; chickenpox, 6 cases, o deaths; diphtheria, 46 cases, 6 deaths; cerebrospinal meningitis, case, 0 deaths; measles, 61 cases, 2 deaths; whooping cough, 46 cases, 11 deaths; pulmonary tuberculosis, 90 cases, 58 deaths; pneumonia, 22 cases, 19 deaths; erysipelas, 2 cases, I death; puerperal fever, 3 cases, 1 death; ryspletas, 2 cases, 0 deaths; cancer, 20 cases, 20 deaths; mumps, 5 cases, 0 deaths; mumps, 5 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 5; diarrhæa and enteritis, under two years of age. 87; tetanus, 1; dysentery, 4; cholera morbus, 2. The total deaths numbered 502 in a population of 1.532.738, corresponding to an annual mortality of 17.00 in 1.000 of population. The total infant mortality of 17.00 in 1.000 of population. The total infant mortality was 170; under one year of age, 139; between one and two years of age, 31. There were 43 still births, 20 males and 14 females. The total precipitation was 3.06 inches. The thermometer registered over 80° every day, and on hve days it was above 85°. There were 6 deaths from heat and sunstroke, 5 adults and 1 minor.

The Irish Women's Health Association was recently organized by the Countess of Aberdeen. As its name implies, it is intended to improve the physical conditions of the people by local organizations which are being formed in every town and village in Ireland. These organizations are composed of public spirited women of all classes, who are willing to devote some of their time to practical work of Ireland, provide nourishing food for the children, teach habits of cleanliness of person, clothing and habitations; teach the necessity of proper ventilation and the advantages of fresh air and frequent bathing; to instruct housewives and young women how to prepare food so as to secure the greatest degree of nourishment; to provide for in the markets; to prevent and punish the sale of impure or tainted fish, meat, milk, and other supplies; to have all milk inspected; to have all bakeries inspected; to secure the enforcement of the sanitary laws; to establish dispenwhere it is needed, and to do various other things for the physical welfare of the community. Lady Aberdeen is at present devoting her attention to educating the people on the question of tuberculosis. Tuberculosis exhibits have been held in more than sixty towns and villages, and the lectures which accompanied them were listened to by about one sixth of the entire population of Ireland. To aid in the campaign against tuberculosis a bill has been intro-duced into parliament providing for the establishment of eparate hospitals for the treatment of tuberculosis patients. A general supervision over the milk trade is exercised by the officials, and all physicians are required under a heavy

Dith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL. July 30, 1908.

The Occurrence of Infantile Paralysis in Massachusetts

in 1907, By Robert W. Lovett.
Osteosarcoma of the Knee Joint,
By Edville Gerhardt Abbott and Thomas Jayne

The Abuse of Alcohol in the Treatment of Children's Diseases, By Charles W. Townsend, A Modification of the Drigalski-Conradi Litmus Lactose

Agar, for the Isolation of Bacillus Typhosus, By DONALD GREGG. 1. The Occurrence of Infantile Paralysis in

Massachusetts in 1907.—Lovett says that the evi-

dence as to the actiology of the disease may be summed up as follows: The sudden febrile onset and the character of the onset suggest infection, and there is a general impression that the disease is infectious; but the case is not proved by positive bacteriological data, so far collected, and most bacteriological examinations are negative. But in this case negative evidence does not disprove the theory of infection, for the organism present, if one exists, may liberate a toxine and disappear. The seasonal occurrence, the age of the children selected most commonly, and the frequent association of intestinal disturbance with the onset suggest some intestinal infection as the possible source of the disturbance. It must be remembered that the disease follows the curve of summer diarrhoea as to age and season, and follows the curve of cerebrospinal meningitis as to neither. From the evidence at our disposal, it seems reasonable to suspect that some bacillus, probably an anaerobic one, reaches the intestines in milk and there liberates a toxine which is absorbed and carried to the spinal cells by the blood current. Hence, the findings in the cerebrospinal fluid withdrawn by lumbar puncture are negative in most cases. But it cannot be regarded as certain that infantile paralysis is always caused by the same organism, nor even that it is a pathological entity. It may be simply the clinical expression of the reaction of the spinal cord to one of several causes, of which infection may well be one. A similar pathological condition has been seen to arise from lead poisoning from the experimental injection of bacteria in rabbits and from the injectine of toxine in guinea pigs. Allowance must also be made for the possible influence of traumatism, dampness, overfatigue, the exanthemata, and foci of pvogenic infection as possi-

ble causes of infantile paralysis, or a disease indis-

tinguishable from it. At present we must observe and study and collect material, remembering that

we may be dealing (1) with a specific infectious

disease; (2) with an infection due to one of several organisms, or (3) with a disease of more than one

origin, not always necessarily infectious. As to

contagion, the data contained are not sufficient to establish this characteristic, although the distribu-

tion of the disease, its spread from foci, the involve-

ment of contiguous towns, the spread along lines of

most frequent travel, and the very suggestive histories given may well warrant us in suspecting it and collecting further data, and no harm could arise from the isolation of such cases from other chil-

dren during the acute attack.

Osteosarcoma of the Knee Joint.-Abbott and Burrage, from their experience, think that a radical measure, such as an amputation, for the central variety of sarcoma of the knee joint, is advised for the following reasons: Early and high amputation give the largest percentage of recoveries without recurrence. Treatment by the use of toxines, which seems to be a useful adjunct, but alone, according to present statistics, gives only fifteen per cent. of cures in all varieties, cannot be entirely depended upon. Immediate death following operation seldom occurs if the previous condition of the patient is fair. Resection is of doubtful benefit, and, in cases where there is so much at stake, should not be attempted.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 1, 1908.

The Borderline of Laryngology, Rhinology, and Otol-By HANAU W. LOEB. Middle Ear Sclerosis, or Atrophic Middle Ear Catarrh,

Psychotherapy,
Aneurysm of the Heart. With Report of a Case Associated with Mediastinopericarditis.

By J. B. McElroy. By JOHN B. DEAVER. Chronic Pancreatitis Pancreatitis in Its Relation to Gallstone Disease

7. May Not Drinking Water, When Polluted with Sewage, be One Medium of Dissemination of the Tubercle Bacillus?

By Samuer G Dryon.

The Treatment of Inflammation,

By JAMES EDWARD POWER. 9. Interstitial Gingivitis, By Edward Cornelius Briggs. 10. Physics of Physical Signs, with Special Reference to the Respiratory Murmur, By H. D. ARNOLD. II. Remissions in Pernicious Anæmia,

By Walter L. Bierring.

12. Pallagra: Its Occurrence in This Country; Report of a Case, By R. Harliefe Bellamy.

The Association of Age and Incipient Cataract with
Normal Pathological Blood Pressure. A Study of

these Conditions in Four Hundred Men above Sixty Years of Age, By D. W. Greene.

Middle Ear Sclerosis, or Atrophic Middle Ear Catarrh.—Bryant remarks that treatment should be directed to the correction of the systemic primary cause of the disturbed tympanic blood sup-Most important are general hygiene and systemic tonics, rest, and correcting any local cause of the general nervous disturbance. Also to the nasopharynx in order to remove the causes of disturbed tympanic blood supply; the nasopharynx must be put in as perfect physiological condition as possible. Furthermore, to the tympanic or tubal cause of altered tympanic blood supply which must be improved by local medical and surgical means; the tube must have its function completely restored; external mechanical obstructions to its action must be removed and astringents applied to the lining membrane. It should be directed to the substitution of normal cell elements for the pathological results of the sclerotic process; it is desirable to stimulate the tympanum violently in order to excite a reaction by which new blood vessels are formed and the circulation is restored, part of the sclerotic tissue absorbed, and the normal tissue stimulated. And finally to the restoration of the functions of the various parts of the sound conducting mechanism. To this end we have at our disposal the various forms of massage and inflation. These are all good if used with caution. The indications for their use are restoration of normal mobility to these parts. Counter indication is the hypermobility due to stretching of the connective tissue beyond its limit of elastic recovery.

3. Psychotherapy. — Barker remarks psychotherapy has had such a "yellow streak" in it that many medical men have refrained from utilizing to the full the good in it. This is one reason why it is desirable that conservative, scientifically trained men should work with it and let us know their experience concerning its advantages on the one hand and its limitations and dangers on the other. Its use should be preceded in every case by the making of an accurate diagnosis by our best methods. It is no cure all, but in certain cases it is indispensable. and with all patients it is a valuable supplement to other forms of therapy.

5. Chronic Pancreatitis.—Deaver states that chronic pancreatitis may be subdivided into the interlobular and the interacinar forms. For the purpose of the surgeon it is sufficient to state that the most frequent form is the interlobular, and that it is this form with which we have to deal in the pancreatitis complicating disease of the biliary passages. The interacinar form is due to systemic conditions not yet understood, and is therefore correspondingly unfavorable to direct or local attack. The ætiology of chronic pancreatitis is of the utmost importance. There is no doubt that its most frequent cause is some interference with the free discharge of the pancreatic secretion, either associated or unassociated with an ascending infection. As by far the most common cause of such obstruction is the lodgment of a gallstone in the ampulla of Vater, or other part of the common duct, the frequent association of the conditions is at once explained. The occurrence under such circumstances of a pancreatitis, either acute or chronic, is not inevitable, but it is very common. But gallstones are not the only indirect result. There may be an infection, as shown by the bile, congestion, and an inflammation of the gallbladder, or some cholecystitis, as evidenced in a shrunken and distorted gallbladder, or pericholecystic adhesions. Duct obstruction plus infection furnishes the most likely cause of chronic pancreatitis; either factor alone is sufficient to cause this condition. The rôle of infection alone is also demonstrable in those cases in which a chronic pancreatitis follows on a long standing gastroduodenal catarrh. Blocking of the pancreatic ducts by calculi in them or by new growths of the common duct or the ampulla of Vater may be mentioned as among the rarer causes of chronic pancreatitis. In considering the symptomatology we must remember that the symptoms are caused in three ways, and may thus be divided into three groups: 1. Those which depend on the local lesion, i. e., the local manifestations of disease in the upper abdomen. 2. Those which come as a result of the interference with pancreatic secretion, i. e., a form of indigestion. 3. Those depending on interference with the internal secretion of the pancreas-shown principally in the occurrence of diabetes and in the pancreatic reaction in the urine. The choice of operation in dealing with chronic pancreatitis resolves itself into a decision between simple drainage of the biliary ducts or a cholecystenterostomy. When gallstones are found in conjunction with pancreatic disease, or when the latter is found during a gallstone

operation, drainage is indicated by the biliary condition to be sufficient. Thus, if we have stones in the choledochus, a choledochostomy should be performed in the usual manner. The operation of cholecystostomy is to be preferred when we find a pancreatitis the result of a still active infection of the bile ducts or when the pancreatitis is discovered in its incipient or catarrhal stage. Cholecystenterostomy is indicated when the pancreatic condition is well advanced and we wish to procure permanent drainage. Moderate anæmia and glycosuria are not contraindications to operation in pancreatic cases, as both are often greatly benefited when the metabolism of the body is restored to its normal status. His results in chronic pancreatitis have been such as to encourage him to further operative work in this direction. The immediate mortality is still quite high, due in large part to the extremely weakened condition of the patients, the grave associated conditions, and especially the tendency in those patients in whom we find both jaundice and a pancreatic lesion, to uncontrollable

hæmorrhage. 6. Pancreatitis in Its Relation to Gallstone Disease.—Haggard writes that the acute type is so sudden and severe in its onset, attended with such agonizing pain and followed by such extreme prostration, that it has been denominated "the pancreatic drama." The pulse is rapid with rise of temperature. Vomiting occurs at once and is persistent. First, the stomach contents are regurgitated, and then the intestinal, simulating acute obstruction, although gas is passed. The lips are livid, the extremities cold, the entire body of a cyanotic leaden hue. Dyspnœa is often present, and constant splitting backache has been observed. The pain is excruciating, paroxysmal, and deep seated, and is uncontrollable with ordinary doses of morphine. Collapse is extreme. Tenderness is diffuse, and the whole picture is that of "the acute abdomen." There is some epigastric induration in the first twenty-four hours, but the consecutive distention soon obliterates it. There is no glycosuria. Erdman and Thayer found no sugar in five cases each. Patients die in collapse in forty-eight to seventy-two hours. This type occurs oftenest at about the age of fifty, in fleshy subjects addicted to alcohol. The laboratory examinations of the urine and fæces are so laborious and consume so much precious time in the acute cases and are really so inconclusive that it does not seem wise to delay exploration to have them made. The distinctive tissue change is fat necrosis. It results (when there is obstruction) from penetration, into the tissues adjacent, of pancreatic juice and certain ferments, which split the fat into its component fatty acid and glycerin. The latter is absorbed and the former unites with the lime salts to form yellowish white, nonelevated, opaque spots about the size of a millet seed that look like droplets of candle grease. Fat necrosis points as unerringly to the pancreas as jaundice does to the liver. There is also marked The colon and omentum are gorged In the omentum there have been observed clumps as large as sausages. In the subacute or suppurative form the onset is less sudden and severe. Chill, fever, and leucocytosis are present, and an epigastric tumor gradually develops. Although constipation is the rule, fatty stools and occasionally fragments of necrotic tissue may appear. A less violent course is pursued, sometimes ending in resolution. These cases frequently terminate in suppuration, which burrows in a bizarre way. Operation is not so immediately necessary in the subacute cases unless suppuration demands evacuation. Chronic pancreatitis occurs in individuals with previous painful epigastric attacks, which often declare their gallstone origin. There is midline tenderness, slight fulness, pain referred to the left side, to the kidney, and left scapular region. There is extreme loss of weight, which, with the pigmentation of the skin, frequently gives rise to the inference of malignant disease. Jaundice is com-monly present, and may exist for many months. Nearly all cases of so called catarrhal jaundice are in reality pancreatic catarrh or actual chronic pan-The intense irritation of the skin in jaundice is indicative of pancreatic and not biliary origin. The common duct is surrounded in the lower third of its course by the head of the pancreas in sixty-two per cent., which when swollen produces obstructive jaundice. In thirty-eight per cent. the duct runs behind the pancreas and, although it might be enlarged, no pressure jaundice results. The operative indication for the acute cases is unmistakable. Incision of the acutely inflamed pancreas with drainage often suffices. The peritonæum should also be drained when there is that peculiar beef broth serum present. If the patient's condition permits the complicating gallstones should be rapidly removed, and drainage instituted. In the chronic cases drainage of the bile passages, while indirect, is most effective. It is an anomalous illustration of a palliative operation being also a curative one. A thorough search with finger and probe after the removal of the obvious stones is essential to insure none being left. It is especially difficult to detect them in the pancreatic portion of the duct. The common duct is best drained temporarily with a catheter introduced up to the junction. Permanent drainage is to be established by cholecystenterostomy if there are no gallstones. The duo-denum, instead of the colon, is undoubtedly more desirable, as it delivers the bile into its natural channel, where it is physiologically needed.

MEDICAL RECORD August 1, 1908.

- Tuberculosis in Connecticut, Especially in Rural Connecticut.

 By Stephen J. Maner.

 Autochthonous Urethral Calculi; Report of a Case.

 By HARRY ATWOOD FOWLER.

- By HARRY ATWOOD FOWLER.

 Aid in Œsophageal Obstruction. Report of Cases,
 By Jesse S. Myer.

 Surgical Technique Without the Use of Antiseptics;
 with Report of Forty-one Consecutive Successful
 Abdominal Operations, By William H. Dukeman.

 Epilepsy in Private Practice, Especially that from Reflex Causes,
 By Charles G. Polk.
- Tuberculosis in Connecticut, Especially in Rural Connecticut.-Maher remarks that tuberculosis was a disease of the Indians of Connecticut before the white man came. Human tuberculosis has occurred in all parts of rural Connecticut-high-

land and lowland and plain. There is considerable evidence to show that in rural Connecticut human tuberculosis occurs most frequently in badly drained districts, and in houses with damp cellars. The reports received do not support the view that in rural Connecticut cases of consumption occur frequently in close proximity to unsanitary barns or coops. While the preponderance of testimony is that in rural Connecticut only a minority of cases of consumption have been followed by other cases in the same house or the same family, the evidence in favor of the hypothesis of "consumption houses" and "consumptive families" is often very striking and is deserving of careful consideration. The density of the population of the counties of Connecticut bears no relation to the tuberculosis death rate of said counties. There has been a very marked decline in the tuberculosis death rate for the past fifty years. and this decline was as steep but not as regular before the discovery of the tubercle bacillus as it has been since.

Autochthonous Urethral Calculi.-Fowler describes the treatment thus: A small calculus in the penile urethra can sometimes be removed with the urethral forceps. In one such case, where the stone was freely movable behind a narrow point of the canal, he was able to fix the calculus by pressure on the urethra behind it, and remove it with the urethral forceps. Great care must be taken to avoid injury to the urethral wall, particularly in the presence of infection. In one such case reported gangrene and extensive sloughing of the urethra followed the removal of a small calculus impacted in the penile urethra. Attempts to crush the stone by pressure from without should never be made. If the stone cannot be readily removed by the forceps, it is safer to do an external perineal urethrotomy and remove the stone by displacing it backward. If this does not succeed one should then cut down on the stone, remove it, dilate the urethra, and suture, leaving the perineal wound open for drainage until the wound in the penile urethra has completely healed. For all large stones in the deeper urethra external perineal urethrotomy is the operation of choice. It will rarely be necessary to open the bladder above the pubes. In some cases of a small stone in the prostatic urethra it is possible to push it back into the bladder and remove it with a lithotrite.

5. Epilepsy. - Polk, in speaking treatment of epilepsy, observes that our present limited knowledge of the ease it must be largely experimental, physician studying each case and noting the results of the several courses of treatment. Passing to the hygienic treatment of the patient, it may be said that this is at least of equal importance with the medicinal. A course of treatment along comprehensive lines should be mapped out, and the patient be required to give reports as to his adherence to it. A copy of the following rules may be given him, they do not cover every case, but there can be no mistake in the observance of them: Have meals regularly, with the last meal of the day early and light. Do not eat until there is a sense of fulness. Do not eat peas, beans, veal, much meat, or cereals. A vegetable diet is the best. Fish and milk are permissible. Use as little salt in the food as possible, and forego tea and coffee. Do not eat much at one sitting. Keep the bowels free and the intestinal tract aseptic by the use of some antifermentative like salol or betanaphthol. Flush the colon frequently. Take warm salt baths, not remaining in the water sufficiently long to fatigue. Sleep with the head high, and keep the feet warm at all times, and especially at night. See that any defects in the eyes are corrected, and do not use the eyes a long time without resting. If glasses are worn, have the frames straightened at regular intervals. Take as much outdoor exercise as possible without fatiguing. Spinal douches and massage should be taken regularly. If seizures come early in the day take 15 grains of sodium bromide before retiring.

BRITISH MEDICAL JOURNAL

July 18, 1908.

Professor Bier's Treatment by Means of Induced Hypersemia, By H. F. WATERHOUSE. Remarks on Nasal Obstruction, By W. G. SPENCER.

Hyperæmia,

Remarks on Nasal Obstruction,

The Treatment of Otitic Cerebellar Abscess, with Remarks upon Three Successful Cases,

By D. R. PATERSON. (Science Committee of the British Medical Association.

Report CVII.)
Some Complications of Chronic Otorrhoa,
By H. H. B. CUNNINGHAM.
Remarks on Iritis, with Special Reference to GonorBy W. M. BEAUMONT.
By W. M. Children,

6. On a Little Known Type of Amblyopia in Children,
By S. M. BEAUMONT.

7. Medical Inspection of Schools. Some Notes on Organization,
By W. L. EDWARDS.

8. On Action of Arsenic on the Red Blood Corpuscles, and a Theory of the Blood Defect in Pernicious Angelia. Anæmia. By J. A. GUNN.

 Induced Hyperæmia (Bier's Treatment).— Waterhouse gives his experience with and conclusions regarding Bier's treatment by means of induced hyperæmia. He looks on inflammation as an attempt on the part of Nature to rid the tissues of the microbic invaders that attack any part of the body. Inflammation may almost be said to have, as its main function, that of excreting microbes. Bier's treatment has as its object the artificial stimulation of this excretory function by the production of a hyperæmia (venous or arterial), thus employing to the greatest available extent the antimicrobic action of the blood. The living tissues are aided in their struggle against microbic invasion, an increase in the volume of blood circulating through an inflamed part being, because of the antimicrobic action of the blood, a valued help to the issues in their contest with the invading bacteria. Bier's treatment should be entirely painless, and if pain is already present this should be mitigated, certainly after the treatment has been employed for a few minutes. Of the five cardinal signs of inflammation—heat, redness, swelling, pain, and impaired function-Bier's treatment increases the three former, and diminishes the two latter. The objects to be attained are: I. Arrest of the infective process or at least its mitigation. 2. Prevention of suppuration in many cases in which this is threatened. 3. Diminution of pain. 4. Avoidance of operative treatment in many cases, or, when this is not possible, the substitution of a less severe and less mutilating operation than would otherwise be necessary is permitted; thus, a few

small incisions are sufficient instead of many and extensive. 5. Saving of time owing to hastening the eliminating processes in cases in which suppuration and necrosis are unavoidable, as in carbuncle. 6. Increase in the antimicrobic action of the circulating blood owing chiefly to the greater quantity circulating in the diseased area. 7. Stimulation of process of repair, as shown very frequently by the success attending its use in cases of delayed union of fractures. Three methods are employed: I. Elastic constriction, the oldest and still the most frequently made use of. In general the bandage should be applied for nine hours on and three hours off in chronic cases in adults. After removal of the bandage the congested part is elevated and the area covered by the bandage sponged with seventy per cent. alcohol. Acute cases cannot stand too long an application. If suppuration has taken place prior to the application of the bandage, it is essential that vent be given to the pus. Bier's treatment is powerless to effect the absorption of pus already formed. Large, free incisions are not called for, however, and squeezing the abscess cavity should never be performed. In joint tuberculosis good results are attained by combining Bier's method with the use of a ten per cent, iodoform glycerin emulsion. 2. The second method of application of Bier's treatment is the partial vacuum or cupping glass method. This cannot be employed continuouslyone hour twice a day is usually sufficient. Suction causes a very marked hyperæmia, which is partly at first arterial, but in the main venous. It is used chiefly for affections of the trunk, but the results are far less striking than are observed in the extremities by the use of elastic constriction. 3. Of the third method of Bier—that of the induction of hyperæmia by means of hot air—the writer has had but little experience. In this method the part, naturally an extremity, is enclosed in a chamber heated artificially to 200° to 250° F. In conclusion, the writer cites twenty cases in which the treatment was employed with advantage.

2. Nasal Obstruction.-Spencer takes up the question of nasal obstruction under the following heads: 1. Adenoid vegetations. The writer prefers the removal of adenoids by means of forceps followed by the ring knife. Adenoids are produced by a persistent habit of mouth breathing, resulting usually from neglected and recurring catarrhal infection. 2. Congenital nasopharyngeal obstruction. Defective development of the base of the skull may cause a false appearance of adenoidism. Abnormally narrow posterior nares is another form of congenital obstruction. 3. Nasopharyngeal polypi (a) lymphadenomatous and cystic nasopharyngeal growths. Old adenoids tend to become ædematous and cystic. (b) Myxomatous nasopharyngeal polypus. These grow from some point around the posterior nares, and can be safely removed either with a snare or forceps. (c) Fibrous nasopharyngeal polypus. This grows from the fibrocartilaginous covering of the base of the skull, and may grow to a large size before being recognized. It is identified by its having a limited but fixed attachment to bone. It should be removed by doing preliminary laryngotomy and plugging the pharynx, all in dividing the soil palate and retracting each

half. The base of the tumor is outlined by the cautery and the tumor detached by raspatories. (d) Inoperable congenital tumors in connection with the hypophysical region of the skull, dermoid cysts, teratomata, etc. 4. Nasal polypi. Benign polypi are started by a local hypertrophy of the normal submucous tissue, by proliferation of the original tissue cells, accompanied by an increased vascularity. The earliest stage is commonly seen over the end of a turbinal bone, forming the sessile hypertrophy. When there is added the saturation and separation of the connective tissue fibres by serum, a mucous polypus forms. In the early stages simple treatment-washes, tannin, alcoholmay cause subsidence. Fibrous nasal polypi usually occur in boys before or soon after puberty, and if not attended to cause the so called "frog face." 5. Abnormalities of the nasal septum cause nasal obstruction, and treatment should be directed to the relief of that condition. Deviations and spurs of the septum are not otherwise important. 6. Acquired nasal obstruction is produced in particular by syphilis, and is most difficult to relieve.

LANCET

July 18. 1008.

The Ætiology of Pulmonary Tuberculosis (Cavendish Lecture), By Sir W. Whitla. Inborn Errors of Metabolism (Croonian Lectures, III),

Observations on the Opsonic Index in Tuberculosis,
By D. L. SMITH, J. A. D. RADCLIFFE, D. ELDER, and
A. CROSSLEY.
Blood Pressure in Neurasthenic States and the Effects
of Certain Forms of Treatment Theorem.

of Certain Forms of Treatment Thereon

By E. D. MACNAMARA. By W. O. MEEK. A Case of Osteomalacia, A Case of Diphtheritic Paralysis Treated by Injections of the Antidiphtheritic Serum of Roux By G. S. Middleton.

2. Errors of Metabolism. — Garrod, in the third of his Croonian lectures, takes up the subject of cystinuria. The liability to the formation of calculi composed of cystin and to other urinary disorders such as cystitis, gives the study of cystinuria a practical as well as a theoretical importance. A distinct odor of sulphuretted hydrogen is given off from such urines when they decompose. The deposits of crystalline cystin which are thrown down are not very abundant, but may often be seen with the naked eye to consist of glancing crystals. der the microscope these appear as hexagonal plates, the edges of which usually show paired inequalities of length. Fresh crystals are deposited after the urine has been passed, especially on addition of acetic acid. The ready solubility of cystin in ammonia affords a means of identifying the crystals, which are insoluble in acetic acid. The urinary crystals which are most likely to be mistaken for the hexagons of cystin are the almost colorless plates of uric acid deposited from feebly pigmented urines. The cessation of deposits must not be taken to mean that a patient has ceased to excrete cystin, for the addition of acetic acid may cause their deposition. Even in acid urine cystin is by no means insoluble But there is reason to believe that the excretion of cystin may be actually suspended, at least for a time. Possibly the error of sulphur metabolism persists, although the form of its manifestation is changed, and in such cases some other interme-

diate product than cystin itself may come to excre-In the fæces of cystinurics no cystin can be The error of metabolism, of which cystinuria is a manifestation, is clearly a far more complex one than that which underlies alkaptonuria and far less uniform in character. Although the excretion of cystin in the urine is apparently a constant feature, and is that by which it has always hitherto been recognized, yet cystin is by no means the only protein fraction which is implicated, and in some cases other aminoacids or their derivatives are to be found in the urine. The commonest of these are the diamines cadaverin and putrescin. More rarely leucin and tyrosin are excreted unchanged. So that cases of cystinuria differ widely among themselves not only in the number of protein fractions which are implicated, but also in their behavior as regards the individual fractions. The cases can be classified along the following lines: 1. In some no diamines and no primary protein fractions other than cystin have been found in the urine. some the urine has contained cadaverin or putrescin, or both, in addition to cystin, but the excretion of diamines is apt to occur in an intermittent manner. 3. In a very few cases leucin or tyrosin or both have been excreted with or without diamines. 4. In one case cystin was present in the urine, but no diamine, leucin, or tyrosin. When diaminoacids were given by the mouth the corresponding diamines were ex-As regards the disturbance of sulphur metabolism in cystinuria it is certain that only a portion of the total cystin of the proteins broken down is excreted as such, and that the error is in no sense complete. Cystinurics always excrete neutral sulphur and sulphates other than that contained in the cystin. It is probable that the unchanged cystin is excreted at the expense of the sulphates rather than at that of the neutral sulphur. The question as to whether the excretion of cystin is influenced by the amount of protein in the diet is not as yet settled.

3. Opsonic Index in Pulmonary Tuberculosis. -Smith, Elder, Radcliffe, and Crossley have studied the opsonic index in cases of pulmonary tuberculosis, and find that they can classify the cases into three groups, as follows: I (Those showing extreme and rapid oscillations in opsonic power). In cases of this type it was thought that as even at rest the autoinoculations were so marked the results of tuberculin treatment would probably be unfavorable. 2 (Those with persistently high level indices). Injections of tuberculin were not given here, as it was considered it would not be possible to improve the patient's opsonic power and the risk of inducing a negative phase would have been incurred. 3 (Those with low indices). Injections of tuberculin were instituted in these cases and apparently with excellent results. The writers also found that the agglutinins and opsonins in pulmonary tuberculosis follow a similar course, but that the opsonic estimations are more delicate and record much slighter varia-

Blood Pressure in Neurasthenia.--Macnamara has studied the blood pressure in various neurasthenic states, and summarizes his conclusions as follows: 1. In many cases of neurasthenia there is an alteration of the level of the blood pressure from

the normal, the level being sometimes higher and sometimes lower than the normal. 2. Patients who show such alterations and who undergo certain sorts of treatment manifest, in some cases, at the end of a course of treatment a level of pressure different from that which existed before treatment began. If the pressure at the commencement be abnormally high it will probably descend, while if it be abnormally low it will probably ascend. 3. The number of patients whose blood pressure is different at the end of their course of treatment from that which it was before treatment began is greater among those without a family history of nervous instability than among those with such a history. 4. In a very large majority of cases the application of high frequency currents produces a lowering of blood pressure, while the static bath (+ charge) and massage produce a raising of pressure. The discharging of a patient charged with static electricity results as often in a rise as in a fall of blood pressure. application of the faradic current tends rather to lower than to raise the blood pressure, and the galvanic current cannot be said to effect much change in either direction. 5. It is difficult to institute treatment with any confidence that there will be at the end of the course such an alteration as might perhaps have been expected from a knowledge of the alteration that is likely to follow each application of the therapeutic agent employed, though we may look for a change of level, when the level was at the commencement abnormal, to one that is nearer the normal. 6. There is no evidence that the differences of variation of level before and after treatment which may sometimes be noted can be correlated with improvement in health.

BERLINER KLINISCHE WOCHENSCHRIFT June 22. 1908.

Subcutaneous Permanent Drainage of the Ventricle of the Brain in Hydrocephalus, By Fedor Krause. The Cutaneous Inoculation of Tuberculin According to von Pirquet with Reference to the Diagnosis and Prognosis of Tuberculosis,

By Ziesche.

By Ziesche. Concerning Glycosuria Experimentally Produced by Cauterization and the Formation of Eschars on the Cauterization and the Formation.

Inner Surface of the Intestine,

By F. EICHLER and H. SILBERGLEIT.

Little's Disease and Luxation of the Hip,

By Gustav A. Wollenberg.

By RICHARD MÜHSAM.

Implantation Carcinoma of the Abdomen, By A. Tile.
Concerning the Palpation of the Normal Pylorus and
of the Normal Greater Curvature, and Concerning a
New Acoustic Phenomenon, the Expiratory Cooing,
By THEODOR HAUSMANN.

The Action of Drugs on the Blood Serum, By Jacob Schwarzmann.
The Cure of Chronic Bronchitis by Respiratory Gym-

By H. KNOPF. 10. Examination and Treatment Under Water in Gynæcology and Obstetrics,

11. Concerning the Provision of Hospitals and Infirmaries
By B. Laquer.

The Methods of Military Sanitation in 1906 and 1907. By G. SCHMIDT.

3. Glycosuria Experimentally Produced by Cauterization and the Formation of Eschars on the Inner Surface of the Intestine.-Eichler and Silbergleit allege to have shown by their experiments that injury to the mucous membrane of the duodenum produces glycosuria, with a constancy

and with an amount of excretion of sugar such as has never been described in connection with any analogous irritation, a fact which is of considerable

interest in experimental work.

4. Little's Disease and Luxation of the Hip.
-Wollenberg has collated the reported cases of Little's disease, which he has divided into two groups, those without and those with luxation or subluxation of the hip. He then reports four cases of Little's disease, the first a boy, four years of age, with double congenital flatfloot; the second a boy of three, with ulnar club hand; the third with coxa vara of high degree on the left side; the fourth with a supernumerary thumb on the right hand; the fifth with hydrocephalus. Finally he concludes that the cases of luxation of the hip in consequence of Little's disease show that the mechanical origin of a hip luxation is possible, the same as a mechanically produced paralytic luxation, and also that with this mechanically produced luxation similar changes may take place in the acetabulum as those observed in congenital luxation of the hip.

Torsion of the Pedicle of the Gallbladder. -Mühsam reports a case in which the diagnosis of empyema of the gallbladder was made from the symptoms produced by a torsion of its neck, and a laparotomy was performed. The patient made a good recovery. The only treatment in such a condition as that here described consists in extirpation of

the gallbladder.

9. Cure of Chronic Bronchitis by Respiratory Gymnastics.—Knopf says that all expectorants whose utility are unquestioned have more or less unpleasant after effects, and that the methodically practised deepening of the respiration is not only the most certain, but also the only entirely harmless expectorant.

II. Books for Hospitals .- Laquer urges the saying of Lichtenberg, "Books can make the reader neither bad nor good, but can make him worse or better," and that books for the reading of hospital patients or convalescents should be carefully se-

lected.

June 20, 1908.

The Consequences of Syphilis,
By Waldvogel and Suessenguth,
Eczema and Asthma,
By Leo Langstein. By Leo Langstein.

Eczema and Asthma, By Leo Langste Concerning Metalymphæmic Cirrhosis of the Liver,

Contribution to the Knowledge of the Antagonistic Contribution to the Knowledge of the Analysis Action of Adrenalin and the Lymphagogues, By Zdzislaw Tomaszewski and G. Willenko. Histology and Classification of Landry's Paralysis, By A. Münzer.

Cardiac Movement and Cardiac Contraction.

By EUGEN REHFISCH. A Further Contribution to the Article "Acute Yellow Atrophy of the Liver from Syphilis,

By Paul Benno.

By Paul Benno.

Contribution to the Question of the Advantages of Diphtheric Antitoxine, By Philipp Blumenthal.

Concerning Isolated Paralysis of the External Rectus with Coincident Purulent Inflammation of the Middle By Alfred Peyser.

Stasis Hyperæmia in Fixed Flat Foot,

By GUSTAVE MUSCAT. Recent Works Concerning the Manner of Infection with Tuberculosis, By H. Beitske.

3. Metalymphæmic Cirrhosis of the Liver .--Mosse reports a case in which he ascribes as the

probable cause of the cirrhosis of the liver the injury to the cells of the parenchyma of the liver by the dead and dying lymphocytes produced by the treatment with x rays.

5. Landry's Paralysis.—Münzer alleges that with clinical unity this disease presents an anatomical dualism, one class showing the lesions of acute poliomyelitis, the other those of acute polyneuritis. He reports a case in which the anatomical changes of acute poliomyelitis were very marked.

7. Acute Yellow Atrophy of the Liver from Syphilis.—Bendig reports a case of this nature and also two cases of severe jaundice during the

secondary stage of acquired syphilis.

9. Paralysis of the External Rectus Associated with Purulent Otitis Media.-Peyser reports a case in which purulent otitis media followed an attack of scarlet fever in a twelve year old girl. A tumor appeared before the right ear, with slight swelling of the right upper lid and paralysis of the external rectus. The subperiosteal abscess was opened, and a thorough mastoid operation performed. The paralysis of the external rectus gradually improved. In another case, a boy eighteen years old, paresis of the left abduces appeared after a mastoid operation on the right ear. He also had marked choked discs in both eyes. These conditions disappeared without treatment.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT. June 23, 1908.

Concerning Chondrotomy of the First Rib in Commencing Tuberculosis at the Apex,

Diagnostic Vaccinations with a Tuberculin Free from

By LEBER and STEINHARTER. Fat, Ovarial Antibodies and Osteomalacia, By FRANKEL.

Contribution to the Treatment with Oophorin, By HIRSCHBERG.

The Question of the Acute Dilatation of the Heart from Overexertion, By Moritz. Diseases of the Lachrymal Canal and their Treatment,

By Enslin. Feeding with Drawn Off Mother's Milk, By VON STARCK.

An Aid in the Examination of Urine, By HOFFMANN.

9. A Case of Perityphlitis Typhosa, By HOKE.
10. Total Resection of the Sternum and Operative Cure of a Pulmonary Cavity, The Dermatotherapeutic Valuation of Static Electricity

According to Suchier (concluded), By J. Obituary of Dr. Gregor Schmitt of Würzburg. By JESIONEK.

1. Chondrotomy of the First Rib in Commencing Tuberculosis of the Apex.-Seidel considers this form of treatment suitable in all cases of tuberculous catarrh of the apex in adults and young people who have a demonstrable stenosis of the upper aperture; in all cases of tuberculous catarrh of the apex in older adults even when no marked stenosis of the upper aperture of the thorax can be recognized in case ossification of the cartilage of the first rib is met with and movement of the ring of the first ribs is difficult; in cases of tuberculous catarrh of the apex in adults in whom the thorax is comparatively well formed, when, in spite of internal treatment, complete disappearance of the catarrh cannot be brought about. Autopsies have shown that the ring of the first ribs may be so small as to cause compression of the tissues at the apex. Chondrotomy must be considered simply as one among

many means with which to combat this disease, it

does not take the place of the others.

2. Diagnostic Vaccinations with Tuberculin Free from Fat.—Leber and Steinharter, after an experience with 350 cases, recommend a tuberculin from which the fat has been removed for use for diagnostic purposes.

4. Oophorin .- Hirschberg recommends oophorin, a preparation of ovarian substance, to be given women at the climacteric age and also to younger women who are suffering from amenorrhœa.

6. Diseases of the Lachrymal Canal.—Enslin pleads for a greater extension of the benefits to be obtained from an extirpation of the lachrymal sac as the treatment for dacryocystitis.

10. Resection of the Sternum.—Siegel reports a case in which he resected the entire sternum from a woman, twenty-six years old, on account of tuberculosis and secured the repair of a cavity in the lung. The patient made a good recovery.

AMERICAN JOURNAL OF OBSTETRICS.

July, 1908.

The General Administration of Anæsthetics,
By J. M. Bally.
Immediate versus Deferred Operation for Intraabdominal Hæmorrhage Due to Tubal Pregnancy,
By J. E. Janvrin.
Immediate versus Deferred Operation for Intraabdominal Hæmorrhage Due to Tubal Pregnancy,
By E. E. Monroomery.
Immediate versus Deferred Operation for Intrablement of the Company of th

4. Immediate versus Deferred Operation for Intraabdomi-nal Hæmorhhage Due to Tubal Pregnancy,

The Time to Operate in Intraabdominal Hæmorrhage
Due to Tubal Pregnancy,
By W. P. MANTON.
Forty-one Cases of Tubal Pregnancy with Two Deaths,
By A. Lapthorn Smith.

Immediate versus Deferred Operation for Intraabdomi-nal Hæmorrhage Due to Tubal Pregnancy,

By H. J. BOLDT. By P. FINDLAY. Pernicious Anæmia and Pregnancy, Suggestions in Teaching Gynæcology with the Demonstration of Special (Mechanical) Charts as an Aid in this Work,
 By J. A. Sampson.
 Hospital Gynæcology,
 By R. L. DICKINSON.
 Hospital Histories,
 Secured Parents of Conventions for Public of Parents of the Discontinuous for Public of Parents of Public of Parents of Public of

stration of Special (Mechanical) Charts as an Aid in this Work, By J. A. Sampson, 10. Hospital Gynæcology, By R. L. Dickinson. 11. Hospital Histories, By R. L. Dickinson. 12. Second Report on Operations for Relief of Pelvic Diseases of Insane Women, Including 411 Patients,

Intrapelvic (Subpelvic) versus Abdominal Method of Dealing with Mechanical Obstruction to Delivery in Cases of Confinement,
 The Indications for Cassarean Section, By B. C. Hirst.

Immediate versus Deferred Operation for Intraabdominal Hæmorrhage Due to Tubal Pregnancy.- Janvrin assumes that the question referred only to operative treatment. Practically every case of extrauterine pregnancy is at first tubal and in its early stage is unruptured. The author recalled the fact that he had advised, in 1886, for such cases abdominal section and removal of the unruptured tube with its contents as soon as the diagnosis could be made. The symptoms of ruptured tubal pregnancy are now so well known that diagnosis is not usually difficult. The author's preference is for abdominal section as soon as the rupture is determined, for the mother's life is in danger as soon as the hæmorrhage begins. fœtus and placenta being retained, become a source of danger as foreign bodies. The only excuse for delay in a condition of this character would be the

inability to obtain a competent surgeon. This, however, would not usually necessitate a delay of more than a few hours. If an operation is done at once, the danger from intestinal and other adhesions would also be obviated. If an operation is deferred, shock and loss of power for reaction are additional factors which must be considered.

5. The Time to Operate in Intraabdominal Hæmorrhage Due to Tubal Pregnancy.-Manton considers five conditions of this accident: 1. The fulminating cases, with excessive hæmorrhage from rupture of the tube or expulsion of the ovum from the ostium abdominale, with profound shock and collapse. 2. Those in which there are repeated attacks of pain, with faintness, vomiting, and shock, but without excessive bleeding, as in tubal abortion. 3. Those in which rupture has occurred and an hæmatocele has been walled off from the general peritoneal cavity. 4. Those in which the blood has been more or less absorbed, the products of conception and exudate remaining. 5. Those in which the products of conception have escaped from the tube and continue to develop. In determining the course to be pursued when hæmorrhage has occurred, rare judgment fortified by experience is essential. Accumulated experience demonstrates that if there is free blood in the peritoneal cavity the sooner an operation is undertaken the better the chances for rescuing the patient. The management of this condition demonstrates literally that "the man that wandereth out of the way of understanding shall remain in the congregation of the dead.

14. The Indications for Cæsarean Section .-Hirst says that women with a conjugata vera of eight centimetres can be delivered safely and easily during the last month of gestation who would require Cæsarean section or pubiotomy at term. The mortality of premature infants is little higher than those born at term in unobstructed labors. There need be no dread of Cæsarean section after hours of labor pains if the operative and aseptic technique is good. The author has performed seventy-seven Cæsarean sections, under many conditions of labor, with five deaths. His technique consists in cleansing the vulva and vagina thoroughly, packing the vagina with sterile gauze, covering the abdomen with a rubber dam, delivering the uterus from the abdominal cavity, and packing of the abdominal cavity with gauze. The uterus having been evacuated, its walls are united with four interrupted sutures of Pagenstecher's thread of the finest size. The myometrium is then united with a double tier suture of chromicized gut, and the peritonæum with a double laced suture of catgut. The uterus is then returned to the abdominal cavity, the toilet of the peritonæum made, and the abdominal wound closed. Such a technique makes Cæsarean section comparatively safe at any stage. If there is serious infection, with gangrene of the vulva or sloughing of the vagina, the Pono operation can be performed.

EDINBURGH MEDICAL JOURNAL

By T. S. CLOUSTON. Blood and Mind, Some Points of Interest in the Surgery of the Ear, Nose, and Throat. By A. LOGAN TURNER and J. S. FRASER. On the Diagnostic Limitations of the Kee gartin, 1 Free Hydrochloric Acid in the Stomach Contents, By FRANCIS I. BOYD.

Arterial Structure and Arterial Function,

By WILLIAM RUSSELL. I. Blood and Mind .- Clouston, in the Harveian Oration, remarks that the relationship of the bloodvessels and the blood to mental disease has attracted much attention of late years in the United Kingdom and in Italy particularly. Dr. Rutherford M'Phail, in 1884, made a careful investigation into the condition of the blood in mental disease, and his conclusions are very important and definite in regard to the manner in which it is affected in the different forms of insanity. He found that in the patients who suffered from the acuter types of the disease and in the demented class, as well as in general paralysis, the blood was deficient in hæmoglobin and in the number of red and white corpuscles. In the patients who improved in mind, their blood also improved during their asylum residence, and when fully recovered it attained the normal standard. He also found that certain tonics, notably iron, quinine, and strychnine, had a marked effect in improving the quality of the blood. Anæmia he found to be present in a very considerable proportion of melancholics, and to remedy this is one of the first aims of the physician. There are certain cases also where delusional states arise as the result of certain heart diseases and of anæmia. All the great clinicists in psychiatry have directed attention to the condition of the blood in mental disease and have connected abnormal conditions of blood with the mental disturbances, but Dr. John Macpherson was the first to extend and definitize our views as to the great part which toxines and autointoxication play in the ætiology of certain insanities. Clouston believes that the relationship of blood and mind is not all on one side. His experience of mental disease would be a greatly mistaken one, he remarks, if it was not the case that the normally energizing mental cell has a marked effect on the quality of the blood and on the tone of the capillaries and arterioles for good. On the other hand, no one who has seen the pallor, the bad color of the skin, the sunken eye, and the unresistiveness against cold of the man depressed by bad news, and who has seen the same man a month after he has had good news and prosperity has come to him, without observing the mental effects on his blood of the restored cortical action. His blood has "thickened." and his cerebral capillaries and arterioles have resumed their normal tone through the stimulation of his mental cortex. There can be little doubt that general mental activity is stimulated by certain constituents of the blood, and that it is retarded by the existence of others. The consensus of opinion among brain workers tends towards the view that light animal foods, such as fish, milk, eggs, and fruits, are the diets on which they can do the best

THE PRACTITIONER.

Health Resorts and Climates for Children.

By I W Caser
Change of Air in Young Adult Life and Early Middle
I: F P Witness

The Treatment of Pulmonary Tuberculosis,
By A. Latham.

The Evolution of the Preventorium, By W. EWART,

By F. ENGELMANN.

By QUINTON,

By G. MACDONALD.

The Ems Treatment of Respiratory Catarrhs, By A. VOGLER. 10. Spa Treatment of Affections of the Heart,

10. Spa Treatment of Gout,

11. The Treatment of Gout,

12. The Zander Method of Treatment,

13. The Configuration, Meteorology, and General Health

of the Midland Counties of England,

By P. Horton Smith Hartley,

14. The Climate and Health Resorts of the South Coast,

By A. G. R. Foulerton,

By J. T. C. Nash.

Theraceutically,

15. The East Coast Climate,
16. The English Spas Considered Therapeutically,
17. Bath,
18. Harrogate,
19. A Note on Church Stretton,
20. Llandrindod,
21. Llandrindod,
22. By W. WILLIAMS.
23. By W. WILLIAMS.

18. Harrogate,
19. A Note on Church Stretton,
20. Llandrindod, The Climate and Health Resorts of Scotland,

By F. J. CHARTERIS. 22. The Climate and Health Resorts of Ireland,

The Influence of Great Altitudes,
The Three Estoriis,
Gibraltar, Algeciras, Ronda,
The Italian and Swiss Lakes,
By G. H. Brandt.
By W. Turner.
By W. Turner.
By E. C. Hort. 24. The Three Estorils, 25. Gibraltar, Algeciras, Ronda,

25. Ghraitar, Algedras, Rollda,
26. The Italian and Swiss Lakes,
27. The Italian Mediterranean Sea Coast,
28. Health with Pleasure in Norway,
29. Some Renal Spas,
30. France, Belgium, Gernade,
31. Health Pearett in Connede,
32. Health Pearett in Connede,
33. Health Pearett in Connede,
34. Health Pearett in Connede,
35. Health Pearett in Connede,
36. Health Pearett in Connede,
37. Health Pearett in Connede,
38. Health Pearett in Co

31. Health Resorts in Canada,

By A. Macphail. By J. A. Coutts. By F. Lishman. The West Indies, 33. The Canaries, 34. Voyages to the East, By A. CHAPLIN. By H. E. L. CANNEY.

35. Egypt and North Africa, 36. Health and Travel in South Africa,
By C. M. Murray and W. A. Hayes.

I. The Climates Suitable for the Aged .-Weber asserts that the climatic management of old age demands much more careful consideration than does that of any other period of life, for the defects of old age are superadded to the requirements of constitution and morbid disposition. The conditions which are especially to be considered are the changes in the system of circulation, reduction in size and power of the muscular system, diminished acuteness in perception and transmission in the nervous system. In general, old age is characterized by diminished resisting power. The winter and early spring should therefore be spent in climates where there are warmth, sunshine, absence of high wind, mental exhilaration, pure air and water, good hygienic arrangements, and judicious medical advice. Among the desirable localities mentioned are Egypt, Algeria, the western and eastern Rivieras, Abbazia on the Adriatic, the Ionian Islands, Pau in southwest France, and some of the lower Alps. In the United Kingdom there are various desirable resorts in the southeast, south and southwest coasts of England and Ireland. Out of door living and pure air at all times are the great

2. Health Resorts and Climates for Children. -Carr observes that spas and health resorts play a small part in the treatment of disease in early life. Climate is, however, a matter of vital importance t the growing tissues of a child, with his tendency toward nutritional disease. A good climate is next in importance to proper and sufficient food. For children in ordinary health it is of practical importance, especially for those living in cities, to spend the vacation where it will give the best return in health. For such diseases as nephritis or tuberculosis the same climate which would benefit an adult would benefit a child. For chronic bronchitis the winter should be spent in a warm and moist climate, like the Canaries or Algiers. For children with heart disease a dry, bracing climate should be selected. For scrofulous children sea air is preferable, or the saline springs, or the sulphur waters. In the summer the country is to be preferred to the sea shore, and a farm house with good sanitary arrangements is infinitely better than a fashionable

hotel by the sea. 3. Change of Air in Young Adult Life and Early Middle Life.-Weber thinks change of air has cured many a disease, with or without a doctor's help. The most satisfactory results from such treatment come to brain workers from the beginning of adult life to middle life. The principal factors which produce the beneficial effect are more open air life, more muscular exercise, and mental factors. Open air life in a hilly country may be said to prevent cholelithiasis. The sedentary life in cities favors gastrointestinal troubles, circulatory troubles, liver disorders, mitral disease, and pulmonary emphysema. Open air exercise tends to remedy such conditions. A place for exercise should be selected where there is a form of exercise congenial to the individual, be it golf or cricket, hunting or fishing, swimming or cycling. Walking in a hilly country, especially amid beautiful natural conditions, is to be especially recommended. Change of air is not without danger in many physical disorders. It should, therefore, be recommended only after thorough consideration of all the factors in a given case.

8. Climate and the Nose.—Macdonald says the influence of atmospheric and other environmental states upon the function of the nose are very interesting, also that their influence as part factors in the induction of pathological conditions is highly important. The mechanism for regulating the supply of heat and water is found in the erectile tissue. In dry, cold, mountain air the nose passages become exceptionally free, the moisture secreted exceeding the requirements for saturation. In a low state of the barometer the nose becomes "stuffy," and in damp weather the turbinals are erect when they should be partially empty. Anything which favors engorgement of the veins, such as feeble heart action, chronic bronchitis, kidney disease, etc., will cause corresponding turgidity of the nasal erectile tissue. Light produces collapse of the erectile tissue. Smoke and fear have the same effect. Irritants of any kind act similarly unless their use is prolonged. Obstructive conditions of the nose are benefited by a dry atmosphere. Irritability of the nasal mucous membrane is usually more troublesome by the sea and in windy places, while the atrophic conditions are better in moist localities. The sense of smell is very susceptible to changes of climate, but it varies greatly with the general health, the digestion, and the mental equilibrium.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK:

Meeting of March 16, 1908.

The President, Dr. Robert T. Morris, in the Chair.

The Death of Dr. Farquhar Ferguson.—The following report was presented and adopted:—

Dr. Farquhar Ferguson, known to most of us as Dr. Frank Ferguson, one of the incorporators and charter members of this association, died, after a protracted and painful illness, on December 14, 1907, at Atlantic City, N. J., where he had spent the

greater part of several preceding years.

Dr. Ferguson was of Scotch descent, and was born in 1852 in Sidney, Cape Breton Island, Canada. He received his preliminary education at Sidney Academy. At an age when many of us are well along in our medical studies Dr. Ferguson could speak only his mother tongue, Gaelic. He acquired by laborious effort an extraordinary command of the English language. How successful he was in this direction, we leave to those who have heard him in conversation, in the lecture hall, and at professional meetings. He had the unusual faculty of expressing his thoughts in the simplest phraseology and with the most complete lucidity, and his sentences were delivered with a most fascinating burr. Coming to New York shortly after his majority, his first medical training was in the New York Hospital, in the capacity of an orderly. Later, under rather adverse conditions, he matriculated at the Long Island College Hospital, whence he was graduated in 1880. In that institution, from 1883 to 1887, he occupied with distinguished honor the chair of histology and pathological anatomy. From 1883 to 1888 he was pathologist to the New York Hospital, where a few years before he was an orderly. He was also professor of pathology and clinical medicine at the New York Postgraduate Medical School, pathologist to St. Luke's Hospital, the House of Relief (Chambers Street Hospital), and Bloomingdale Asylum, consulting pathologist to the New York Board of Health, and attending physician to the Columbus Hospital. His society affiliations were numerous. He was a member of the Academy of Medicine, the Pathological Society, the Society of Medical Jurisprudence, the German Medical Society, the Physicians' Mutual Aid Association, the New York County Medical Association, and others. He married in 1890 Miss Juliana Armour, of New York, who, with seven children, survives him.

Dr. Ferguson was an indefatigable worker. He was a macroscopical pathologist and a microscopist of great ability, and at the same time a clinician of extraordinary acumen. It has always seemed to the writers, however, that his chief claim for lasting distinction was in his unusual talent for teaching. He was one of the chosen few who have the capability to clearly and convincingly transfer the results of personal knowledge, observation, and experience to the student mind, and it is one of the happiest memories of one of the undersigned that he was privi-

leged to enjoy close intimacy with and instruc-tion from this master intellect. As a man, Dr. Ferguson was clean, straightforward, honest, and upright; as a friend, he was genial, sincere, and charming; as a teacher, he won the respect, esteem, and affection of his students; as a practitioner, he was conscientious, painstaking, and discriminating. As an example of unwearying diligence and indomitable perseverance, in the face of what to many of us would seem insuperable obstacles, his life was surely an object lesson of no small import.

Here's rosemary-that's for remembrance; Here's pansies-that's for thoughts. (Signed) HUBERT ARROWSMITH, WILLIAM H. PORTER, - Committee. FREDERIC E. SONDERN,

Fracture of the Pelvis .- Dr. Archer W. Jag-GER reported a very rare case, one of fracture of the ischium from indirect violence. The patient, a man fifty years of age, with no history of any disease, in the summer of 1907 had a fall which occasioned a considerable amount of pain in the gluteal region and which incapacitated him for work for three days. After that he was apparently as well as ever. In January, 1908, while walking on the street one day, he stumbled, and, despite all efforts to regain his balance, fell prone, at full length. Upon rising he experienced a sharp pain in the upper and inner aspect of the left thigh and gluteal region, but was able to walk to his destination. There he had to sit down, and was obliged to sit on the edge of the chair. On the following morning, when Dr. Jagger first saw him, the thigh was found to be partially flexed on the leg and very painful. Upon grasping the muscles on the inner aspect of the upper part of the thigh and making pressure over the insertion of the adductor magnus, distinct crepitus was obtained. The diagnosis made was fracture of the ischium, and this was confirmed by an x ray examination. The patient was kept in bed for two weeks, and made a good recovery without further treatment. In connection with the case Dr. Jagger presented a number of x ray pictures.

The President remarked that the case, so far as

he knew, was a unique one.

Dr. Ransford E. Van Giesen said that seventeen or eighteen years ago he had had a case which resembled this in the fact that after meeting with the accident the patient was able to walk a considerable distance, when suddenly he became completely incapacitated. In his case, however, the fracture was not one of the pelvis, but a fracture of the neck of the femur within the capsule.

Progressive Locomotor Ataxia.

The Relations of Tabes and Paresis.-This topic was treated by Dr. J. RAMSAY HUNT. The importance of the relation between the two diseases, he said, was not merely clinical, but had a much deeper significance, as touching upon the underlying nature and ætiology of both. The question to be considered when the two occurred together was, Is this to be regarded as a mere coincidence, or are the two affections essentially the same in nature, differing only in their localization? The essential factor in the production of the degeneration of nerve structures (the posterior roots and posterior salis was antecedent syphilis—variously estimated at from sixty to ninety per cent. of the cases. This was not syphilis in the ordinary acceptance of the term, but, presumably, a toxic state resulting, the so called parasyphilis or metasyphilis. In paresis also, in which the degeneration occurred in the association and projection neurones of the cerebral cortex, there was the same antecedent history of syphilis—this occurring, according to Mendel, in seventy-five per cent. of the cases. This relation to syphilis constituted an important bond of union between these two affections, so frequently found associated. In cases where they were thus associated, sometimes one, and sometimes the other appeared first, and in still other instances the two occurred simultaneously. Taboparesis, as it was called clinically, was so frequently met with that the combina-The number tion could not be merely accidental. of cases of tabes resulting in paresis, however, was much smaller than of those of paresis developing into tabes. Among 164 cases of locomotor ataxia treated in the nervous clinic at Cornell University Medical College during the past six years, only sixteen presented the mental or somatic symptoms of general paresis.

As to the pathology of taboparesis, while opin-

ions had differed considerably heretofore, at the present time the weight of pathological evidence tended to regard the lesions as similar in nature to those occurring in simple tabes or uncomplicated paresis. It was interesting to note that in certain cases of tabes, which had presented no demonstrable mental symptoms during life, pathological changes were found in the cerebral cortex which were histologically similar to those found in paresis, only much less marked in degree. The existence of such alterations in the cortex of tabetics was a further evidence of the intimate kinship existing between the two affections. Such findings might also be regarded as furnishing the anatomical basis for a group of tabetic cases which presented very mild symptoms of mental change and deterioration. In these, paresis might be said to be present, but in a slumbering state. In comparatively rare instances other forms of mental alienation, such as paranoia, manic, depressive insanity, dementia præcox, and mental states following drug addiction, were found associated with tabes. The fact was also to be emphasized that in the course of tabes mild mental aberrations might develop upon a neurasthenic basis which were entirely curable by appropriate therapeutic measures; and such conditions were likely to be the cause of great anxiety on account of their resemblance to the clinical picture observed in the earlier stage of paresis-the so called præparesis. This resemblance might be so close that the subsequent course of the case would alone furnish a satisfactory solution of the question. Having mentioned the various groups of cases as given by Nageotte, which presented nearly every possible transition and combination, from simple tabes to paresis, Dr. Hunt

ble transitions and combinations of the spinal cord and cortical localization were found clinically. The Bladder in Tabes was the title of a paper by Dr. J. BEXILLY SOUTH (to be published).

stated, in conclusion, that it might be said that tabes,

paresis, and taboparesis did not differ essentially in

ætiology, nature, or pathology, and that all possi-

Laryngeal Involvement in Tabes.—This paper was read by Dr. W. FREUDENTHAL, who said that for the past three years he had been examining the larynx in all the cases of locomotor ataxia coming under his observation at the Montefiore Home and elsewhere, a very large number in all. He described the various abnormal conditions met with and stated that his investigations justified the conclusion that laryngeal involvement was much more frequent

than had heretofore been supposed. Present Methods of Treatment.-This paper was read by Dr. S. WACHSMANN. In the management of any affection, he said, it was always well to bear in mind that it was not the disease which was to be treated, but the patient, and, as regarded locomotor ataxia, he had become more and more convinced that our efforts ought to be directed more toward aiding the patient in his battle against the malady than to exhausting our skill in trying to stop a pathological process which, while slow, was apparently irresistible. Although the majority of authors seemed to agree upon the assumption that all true cases of tabes were due to syphilis, occasionally there were still heard dissenting opinions, based upon theoretical considerations and absence of corresponding findings in the history or autopsies. On account of the overwhelming frequency of clearly syphilitic cases, it had been the practice, at the Montefiore Home, to give a course of antisyphilitic treatment at the outset in all instances; but he was not prepared to state with any degree of accuracy that this treatment had ever staved the pathological process, or produced an appreciable improvement in the patient's condition. Besides antisyphilitic treatment, there were very few means of attacking the process, these being mostly of a nature tending to tone up the constitution and thus enable the system to resist the progress of the dis-Among them were hydriatic and electric treatment, and there seemed to him to be little doubt that both these agencies had repeatedly produced at least temporary relief, so that the process became stationary for a considerable number of years. This opinion, however, could not claim the indisputable correctness of statistic evidence, since it was well known that cases sometimes became stationary without any treatment. Of all electrical applications, sparks from the static machine had seemed to be followed by the best results. Massage was contraindicated in all cases of tabes, as the muscular tone was apt to be so greatly diminished that it could not respond to the manipulations, and vigorous massages had been known to produce tears in the muscles, and other accidents. The exceptions to the rule against massage were malformations, such as contractures of the toes from lack of exercise, and static œdema. Here, careful manipulations might be of service, but the massage should be applied only to the joints and distal circulation-

As it was an unsatisfactory task to attack the pathological process, we had to do the next best thing, namely, combat the symptoms, just as we sometimes treated hyperpyrexia if we could not eliminate the cause of the pus. The most distressing features of the disease which required treatment might be grouped as follows: The sensory

symptoms, the paralytic, the spasmodic, and the ataxic. In addition, we had to consider the genitourinary symptoms. As to the sensory symptoms, it was not so much the anæsthesias which needed attention as the paræsthesias and hyperæsthesia. The trophic lesions were either ulcers or changes in the joints or bones (including spontaneous fractures), and these required surgical or orthopædic treatment. The Hessing corset and all apparatus of similar intent were to be condemned because they destroyed whatever was left of muscular energy by reducing the muscles of the trunk to inactivity; but the hypotonic conditions of recurvation of the knee and drop foot were benefited by suitable orthopædic appliances, which prevented stretching of the weakened muscles without immobilizing them. The pain especially needed alleviation, and among the innumerable drugs which had been employed only a few had stood the test. For the lancinating pains the following combination had proved invaluable at the Montefiore Home: Antipyrine, 10 grains; acetanilide, 5 grains; caffeine citrate, 2 grains. It was most agreeably administered with an effervescing powder. The girdle pains and the various neuralgias, as well as intercostal pains, as a rule, yielded most readily to the salicylates, especially aspirin in repeated doses of 10 grains. Heat and cold (sometimes one, sometimes the other) had the best effect when used in the form of hydriatic applications. Gastric crises were best treated by means of repeated doses of cerium oxalate (2 to 3 grains), the external application of heat, and, if possible, lavage; while the intestinal crises, usually occurring in the shape of explosive diarrhoea following prolonged constipation, mostly required opium in the form of suppositories. The very troublesome urinary incontinence the speaker had seen improved in one or two instances by lumbar puncture. The eye symptoms (muscular palsies and optic atrophy) were usually treated by strychnine and large doses of iodides.

The ataxia, or incoordination, could not be treated by drugs, but was favorally influenced by total abstinence from tobacco and alcohol. The actual treatment of this symptom was a systematic development of the deep muscular and articular senibility. Efforts in that direction had long been made by various authorities, but the best results had now been obtained by the elaborate and very ingenious system of reeducation devised by Frenkel. This method depended to a great extent on the intelligence and will power of the patient, for without his cooperation the physician would fail in his efforts to teach the tabetic again to use his muscles properly. The attempts of the patient to gain and retain his equilibrium required in the beginning great effort on his part, as indicated by a rapid increase in the number of heart beats and respirations-apparently a purely psychic phenomenon. Great care therefore had to be taken not to overtax the heart. After patients had learned how to stand, they learned to raise the feet successively, and then how to walk and how to turn. Later on, they learned to stand and walk without the aid of sight. When the ataxia had affected the upper extremities a similar method was applicable, cleverly designed apparatus and tools being employed. While Dr. Wachsmann

did not hesitate to recognize the great value of the Frenkel method, he said he would like to add that its only merit consisted in the well systematized course of lessons which made it more interesting and attractive both for the physician and for the patient. In reality we did not need strips of linoleum with mysterious lines, footprints, and geometrical figures, or, again, apparatus or tools, as patients could be instructed without these. In closing, he invited any who might be interested in getting an idea of the practical application of Frenkel's method to visit the Montefiore Home and see the exercises.

At Dr. Wachsmann's request Dr. E. A. FRUCHT-HANDLER then gave a demonstration of two female tabetic patients who had been taught by the Frenkel method. They walked and turned readily, even with the eyes closed, and it was stated that one of them, a young woman of twenty-three, who had had the locomotor ataxia for four years, was able to

walk three miles alone.

Dr. A. D. ROCKWELL said that undoubtedly the chief cause was syphilis, and that if all cases of syphilis could be properly treated, we should see much less of tabes than now. He did not think much could be done to affect the diseased process, but agreed with Dr. Wachsmann that a great deal could be done to relieve the symptoms. The static spark he had found useless for treating pain, and for this purpose he was accustomed to rely upon two agencies, the galvanic current in great strength and heat and light in the form of the arc light. The ultra violet ray, which he had experimented with by request, he had found of no benefit whatever.

Dr. W. B. PRITCHARD said that at the present day the consensus, both among alienists and among neurologists, was in agreement with the views expressed by Dr. Hunt. Paresis was the superior equivalent of tabes, as tabes was the inferior equivalent of paresis. Paresis of late seemed to be somewhat different from what it was formerly, and more and more frequently we saw in the medical journals the question, Is paresis curable? The duration of the disease used to be set down as three years, but now we met with cases which lasted ten or twelve years. Also, the grandiose conceptions which were once regarded as such a constant and prominent characteristic of the affection were often found to be entirely lacking. As to tabes, there did not appear to be much change, but, at the same time, within the last few years it had seemed to him that more anomalous cases were met with. He could not assent to the view that syphilis was the universal cause of the disease, as he had seen a number of cases in which he was as sure as of anything in medicine that syphilis was not a factor. Larvngeal crises (to which he would confine stridulous coughing and voice changes) were rare in his experience, and he could recall but three instances. In the treatment the personal equation, as Dr. Wachsmann had said, was all important, dominating the whole situation. The Frenkel method he considered a marvel of conscientious study and patient labor, to which he had never seen anything else approach, but the trouble with it was that it was too perfect, too scientific. It was impossible to carry out all the elaborate details set down. Before Frenkel had devised

his system there had been courses of exercises for tabetics, and there was a great deal of value in the principle.

Dr. H. G. PIFFARD said that, while the static spark sometimes relieved pain, it also gave pain. As to the ultra violet ray, nothing could be expected of it as it could not even penetrate the skin. In two cases of tabes he had employed with very gratifying results a method which was wholly new, namely, the use of the d'Arsonval high frequency currents. The first patient was a man, fifty-three years old, who had been obliged to give up business, both on account of ataxia and on account of mental failure. At the end of two months his pains were decidedly improved, and instead of coming in a cab he walked from and to his house with one cane. He was then able to close up his affairs and go to Europe, and he was advised to consult Frenkel in Switzerland. The second case was in a man, about forty years of age, who had hypotonia of the muscles of the lower limbs and occasional pains, though these were not very severe. He came about three times a week for two months, at the end of which time the ataxic gait had greatly improved and the pains had for some time been absent. His general health was also much improved, and he was able to give better attention to his business. The treatment was by autocondensation.

Dr. W. M. Leszynsky said that, while the diagnosis of tabes was usually a very simple matter, in exceptional instances it was attended with difficulty. In any alleged case of cure, therefore, the question would arise, Was the diagnosis correct? As most of the cases received at the Montefiore Home had been previously treated outside, and given an antisyphilitic course, it seemed hardly necessary to repeat this in the institution. The opinion was now held that the disease was due to antibodies resulting from syphilis, and not to syphilis itself, and mercury seemed to have no effect upon the existing degeneration. The Frenkel method was very difficult to carry out except in an institution.

Dr. FRUCHTHANDLER said that many of the described by Frankel were really unnecessary, so that the method could be successfully carried out in private practice. All that was required was a large room and a working knowledge on the part of the physician of the principles involved in the system.

Wetters to the Editors.

CONCERNING THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

NEW YORK, Jugust 3, 1908.

To the Editors

The International Congress on Tuberculosis will be held in Washington from September 21st to October 12th. With the exception of those of 1876 and of 1887, it will be the first great international medical congress in the United States. There seems to be no reason why it should not prove a great success, and both the Americans who planned, favored, and prepared it and the Europeans who have been taught to expect great things from America are look-

ing forward to the congress of 1908 as an event of

the first magnitude.

Its objects are the study, prevention, and eradication of tuberculosis, the most formidable enemy of mankind, sapping its vigor and endangering its That is why in all countries both medical men and laymen have combined to search in the medical and social sciences for the root of the great evil and are looking for its gradual extinction. That is also why educated and generous citizens have come forward with financial aid and mean to par-

ticipate in the labors of the congress.

But, after all, a congress of this nature and with this programme must be carried on mainly by the medical profession, and its objects cannot be realized without the cooperation of thousands. Now, these lines have no other purpose but to draw the attention of an ever ready profession, those who have forgotten or delayed, to the fact that only a few weeks more will pass before the congress will be opened. Meanwhile the State of New York, the Empire State, had, until a few weeks ago, furnished fewer than five hundred active members. Five dollars sent to the secretary general, Dr. John S. Fulton, 714 Colorado Building, Washington, D. C., will secure membership, including admission and a copy of the Transactions of the congress. It seems that a mere reminder like this will swell the list of active members, whose duty and right appear to be to prove to the world at large, and particularly to those many foreigners who will visit us on this occasion, that America takes a prominent stand among the countries which value the health and the lives of its citizens. That is why I take the liberty of requesting you to publish this appeal to my professional brethren of this and other States.

President, Fourth Section, International Congress on Tuberculosis.

SNAKES IN IRELAND AND IN ICELAND. ANN AREOR, MICH., August 3, 1908.

To the Editors:

Many besides myself must feel indebted to Dr. Jacobi for his note on the Venerable Bede and the reference to snakes in Ireland. I had a controversy with the snake editor of a medical periodical in the silly season of a few years ago, and should like to suggest now, as I did then, that the use of the phrase comes down from Samuel Johnson, rather than Bede, and should therefore read as you say. On one occasion Johnson said he could repeat the whole chapter from the Natural History of Iceland, translated from the Danish of N. Horrobow, and did so. I had curiosity enough to look up Horrobow's work, a translation of which is in the library of the University of Michigan. You might have said the chapter closed as well as opened with the celebrated phrase, for the whole chapter (lxxiii) is as follows: "Concerning Snakes. No snakes of any kind are to be met with throughout the whole island." Chapter xliii is equally laconic: "There are no owls of any kind in the whole island." I may add that both Horrobow and Boswell are excellent hot weather reading.

GEORGE DOCK.

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Surgery. By John Allan Wyeth, M. D., LL. D. (University of Alabama), President of the New York Academy of Medicine; President of the Faculty of, and Surgeon in Chief to, the New York Polyclinic Medical School and Hospital, etc. With 864 Illustrations. New York: Marion Sims Wyeth & Co., 1908. Pp. viii-816. (Price, \$6.)

The legend of dedication of this handsome volume, to the memory of the late Dr. J. Marion Sims, is appropriately surmounted by a fine engraving of the statue of Dr. Sims which stands in Bryant Park, an artistic tribute which the city owes largely to the enthusiasm of the late Dr. George F. Shrady. Both the statue and the dedication are fitting memorials of a great surgical genius "whose achievements," says Dr. Wyeth, "carried the fame of American

surgery throughout the civilized world."

The work may be regarded as practically a new edition of the author's Textbook on Surgery, which went through three editions, the first of which was published in 1887. It is unnecessary, therefore, to attempt an analytical review of it; the book met at once with a warm welcome, and has ever since maintained its popularity. One of its salient merits has always been the accuracy and teaching efficiency of its pictorial illustrations. This feature is preserved in the volume now under consideration; fifty-seven of the illustrations are in colors, and many new pictures have been added. Another notable characteristic of the work is the amount of attention bestowed on minor surgery, a subject which, though of great importance, is apt to be slurred over in pretentious treatises. The book has been well put abreast of the present state of a constantly advancing branch; if we fail to find mention in it of such topics as the paraffin dam for urinary incontinence in women and castration for prostatic hypertrophy, we must say that we think their consideration has been wisely omitted. Bier's artificial hyperæmia and the treatment of tetanus by means of spinal injections of magnesium sulphate are mentioned in a properly conservative spirit.

It is to be noted that the imprint is that of a new publishing house. We wish the firm all possible success. They have done their work well in this instance, and we particularly commend them for having withstood the present rage for desecrating Latin words by the suppression of diphthongs.

Borderland Studies. Miscellaneous Addresses and Essays Pertaining to Medicine and the Medical Profession, and Their Relations to General Science and Thought. Volume II. By George M. Gould, M. D., Formerly Editor of the Medical News, etc. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. 311.

It is eight years since the first volume of this series appeared, but the various addresses and essays have so little connection among themselves that this volume is quite as readable without its predecessor as it would be with it. Most of the subjects treated of have very little to do with medicine or the medical profession. The first essay, which is the best of the lot, entitled The History of the House; the Struggle for Fresh Air and Light, is, indeed, but very remotely relevant to the second

term of its title.

Dr. Gould is nothing if not earnest, but his earnestness often leads him into intolerance of those who do not agree with him, and this is apt to be manifested by vituperation, the author appearing to take every man for an ass who ventures to dissent from his dicta and to forget the homely old saying that more flies are caught with honey than with vinegar. If the reader will make allowance for this idiosyncrasy, he will take pleasure in reading the

Die Hautkrankheiten. Von Prof. Dr. Jarisch. Zweite, vermehrte und neubearbeite Auflage. Bearbeitet von Prof. Dr. Rudolf Matzenauer. Wien und Leipzig: Alfred Hölder, 1908. Pp. 1110.

The first edition of this book appeared in 1900 as volume xxiv of Nothnagel's Specielle Pathologie und Therapie, and received a warm welcome by the medical profession and the reviewers. Since then its distinguished author has died. In the present edition Professor Matzenauer has preserved the original clinical descriptions and as much of the text as possible. He has carefully and critically revised the sections on pathological anatomy and on treatment. The articles on tuberculides, Röntgen ray dermatitis, pityriasis lichenoides chronica, lichen simplex, and blastomycosis are either entirely 'rewritten or new. On account of careful pruning and the liberal use of closely set type, there are but sixty more page in this than in the previous edition. Part of the economy of space has been dearly bought by omitting fifty-three illustrations, the present edition having but seven.

To produce so thorough a treatise meant the expenditure of a vast amount of time and labor by the author. The result was well worth the work. Unlike many German authors, Jarisch appreciated the fact that there were other observers than his countrymen, and referred to many French, English, and American writers. After each article is placed the literature, arranged alphabetically according to the

names of the authors.

After sixty-three pages on the anatomy of the skin, symptomatology, and general diagnosis, the skin diseases are presented in groups, sometimes on the basis of ætiology, sometimes on that of their pathology, and again simply according to the structure affected, like the hair or the nails. It is well recognized that all attempts at classification of skin diseases are more or less failures. The grouping here adopted leads to some strange combinations. For instance, under folliculides we find acne, acne keloid, and furuncle, while under impetigo are placed farcy, actinomycosis, blastomycosis, and

Many pages are devoted to the discussion of debatable questions. These are interesting and instructive reading, but unusual in a textbook. subject of pathology is presented at length, and the sections on the treatment of the various diseases are for the most part full of helpful advice. While the uses of x rays are indicated, we fail to find mention of radium or the high frequency currents. The subject of the tuberculides is well presented and at length. The use of x rays in the treatment of hipus

vulgaris is advised against, and the warning is given that they not infrequently seem to cause the development of epithelioma on the lupus patches. On the other hand, the Finsen light method is endorsed, and to it is credited a proportion of eighty-five per cent. of cures against one of six and a half per cent. by other methods. Lupus erythematosus is placed among the tuberculides on account of some possible connection between it and lupus vulgaris, though the author, or the editor, admits that such a connection has not been established. The subject of blastomycosis is dismissed with scarcely two pages, and the writings of Dr. J. N. Hyde seem to have been overlooked. It is satisfactory to note that acute pemphigus in infants is regarded as really either the bullous form of impetigo or as due to septic infection. It would be better, it seems to us, if dermatologists would agree to drop the term pemphigus entirely in connection with these cases. It is also interesting to note that our author accepts the prevailing opinion that the lichen ruber acuminatus of Hebra is identical with the pityriasis rubra pilaris of the French.

We take pleasure in commending once more this excellent textbook. It is one of the best and most exhaustive treatises written by a single author, one who was both sane and sound. It is a cause of regret that Professor Jarisch did not live to revise it himself, and enjoy the words of commendation by his fellow workers; but the delicate task of editing another man's book has been well performed by

Professor Matzenauer.

Miscellany.

Pancreatitis Resulting from Gallstone Disease.-William J. Mayo remarks that in acute pancreatitis there is a sudden onset and the pancreatitis is ushered in by agonizing pain in the upper abdomen, with collapse, followed by extreme pros-tration. The pulse becomes quick, there is some elevation of temperature, with nausea, vomiting, and rapid abdominal distension. The acuteness of the symptoms suggest obstruction, which is belied by the ability to secure the passage of flatus. patients are usually elderly, obese, and often have alcoholic histories. On opening the abdomen, the pancreas is found greatly enlarged, softened, and indefinite in outline, with more or less free peritoneal fluid and pea like areas of fat necrosis. If gallstones exist they should be removed quickly and the gallbladder drained. In all cases where free fluid is found in the peritoneal cavity temporary abdominal drainage should be established. Of three acute cases of pancreatitis, two patients recovered, one patient died. Nine patients with subacute cases recovered. Chronic interstitial pancreatitis may extend over years of time without producing such symptoms as readily to distinguish the complication from the original disease, but if its possibility is borne in mind and careful search made, evidence can be elicited to show the nature of the disease, and if pancreatic changes are present it indicates an early resort to surgical interference. Jaundice is one of the most marked symptoms and may last for months or years. The emaciation is more extreme and the

pigmentation of the skin is more marked than in simple, uncomplicated common duct stones. As the antecedent disease is most often gallstones, an early history of this condition can usually be obtained. A distended gallbladder may occur if the biliary passages are normal, but such distension, with jaundice, usually indicates cancer rather than chronic pancreatitis. In a thin patient the enlarged pancreas can sometimes be felt as a hard mass lying transversely across the upper abdomen. Careful examination of the stools gives much important evidence. They are pasty, very large on account of undigested food, and contain quantities of fat. Even if there is no jaundice, the bile, which without pancreatic juice gives only a light yellow color to the stool, is not sufficient to stain the great quantities of fat which are passed off, so that frequent large, light colored, greasy motions, without jaundice, are indicative of pancreatitis. Estimation as to the quantity of stercobilin should be made. Undigested muscle fibre can often be detected in the stool. The presence of chronic interstitial pancreatitis does not greatly influence the prognosis after gallstone operations, although there is undoubtedly a much greater tendency to hæmorrhage than without the pancreatic complications. For this reason the author and his brother have used either the chlorid or lactate of calcium to assist coagulation of the blood before and after operation. They are, however, in doubt as to its actual value. The necessity of clearing out all of the calculi, especially from the common duct, cannot be emphasized too strongly. Stones are especially liable to be lodged under the overhanging head of the enlarged pancreas, so that they may easily be overlooked, as the Mayo brothers have found by experience. As a matter of fact, neither probe nor scoop can be depended on to "feel" a gallstone in this situation, and they have never rested satisfied until they have freely opened the common duct and, if possible, inserted a finger into its lumen, making sure that no gallstone has escaped detection. In the same way, in the majority of cases, the hepatic duct and the entrance to its right and left primary divisions can be searched for calculi having their origin in the gallgladder, but which have been crowded back into the hepatic ducts. After clearing the ducts of stones, a large, malleable probe should be passed through the common duct into the duodenum, so as to secure good, thorough dilatation to permit the escape of any hepatic duct stones which may come down later. Hepatic duct stones, as a rule, are not large, and if free drainage into the duodenum exists, even for a few days, they may find their way out; otherwise they might be retained in the common duct, necessitating a secondary operation. Cholecystostomy or cholecystenterostomy are the indicated procedures. The latter operation has the advantage of equally free drainage and at the same time maintaining the influence of the bile in intestinal digestion. In the Mayos' experience, when the common duct contained stones, the removal of them with temporary external drainage has resulted in the symptomatic cure of the pancreatitis. If there are no stones in the common duct or gallbladder, other things being equal, they have preferred cholecystduodenostomy, and out of twenty-four cholecystenterostomies nine were performed for this cause.-The Journal of the American Medical Association.

Official Rems.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, vellow fever, cholera, and plague have been reported to the surgeon general. United States Public Health and Marine Hospital Service, during the week ending July 31, 1908:

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| Places. | | | Cases | . De ath |
| Places. Illinois-Chicago. Indiana—Fort Wayne. Indiana—Indianapolis. Indiana—La Fayette. Indiana—South Bend. Kassas—Wichita. Louisiana—New Orleans. Ohio—Gineinnati. Ohio—Oringinad. Ohio—Toledo. Washington—Spokane. Wisconsin—La Crosse. | Inty | 11-18 | I | |
| Indiana-Fort Wayne | Tune | 27-July 4 | | |
| Indiana-Indianapolis | July | 12-19 | 17 | |
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| Louisiana-New Orleans | July | 11-18 | I | |
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| Arabia-Aden | Tune | 15-20 | | 9 |
| Brazil-Bahia | lune | 1-30, | 115 | 1 |
| Brazil-Para | Tune | 27-July 4 | 2 | 2 |
| Brazil-Rio de Janeiro | July | 14-21 | 378 | 151 |
| Brazil-Santos | July | 15-21 | | I |
| Canada—Halifax | July | 4-11 | I | |
| China-Foochow | June | 6-13 | | Present |
| China-Nanking | lune | 4-11 | | Epidemic |
| Egypt-Cairo | June | 17-July 1 | 7 | 4 |
| Egypt—Suez | Miay | 27-June 24 | 4 | |
| Algeria—Algiers Arabia—Adem Brazil—Bahia Brazil—Bahia Brazil—Para Brazil—Rio de Janeiro Brazil—Santos Canada—Halifax China—Foochow China—Foochow China—Foochow Lagopt—Cairo Egypt—Cairo Egypt—Cairo Egypt—Garo Italy—Genoa Italy—Genoa Italy—Algerno Japan—Kobe Japan—Kobe Japan—Saka Java—Batavia Java—Batavia Mexico—Aguascalientes Mexico—Mexico City Feru—Limasabon Russia—Moscow | June | 9-23 | | 49 |
| India—Calcutta | May | 31-June 13 | | 25 |
| Italy—Genoa | May | 1-31 | 2 | |
| Italy—Napies | June | 20-July 4 | 12 | 7 |
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| Japan—Robe | June | 13-20 | 4 | |
| Tava Patavia | Man | 0-20 | 13 | 4 |
| Mayico Amazonli nt. | Inly | 31-june 13 | 7 | |
| Mexico-Mexico City | May | ar Tuno 6 | | 16 |
| Peru-Lima | Luna | 31-june 0 | | 10 |
| Portugal-T ishon | Tune | aga Turby 4 | | |
| Russia-Moscow | Tune | 20.27 | 24 | 7 |
| Russia—Odessa | Tune | 20-27 | | , |
| Russia—Riga | Tune | 27-Tuly 11 | 6 | |
| Russia-St. Petersburg | June | 13-27 | 117 | 2: |
| Russia-Warsaw | May | 23 30 | | 7 |
| Siberia-Vladivostock | June | 4-14 | 3 | |
| Spain-Valencia | June | 27-July 4 | 4 | I |
| Straits Settlements-Singap | oreMay | 31-June 13 | | 2 |
| Turkey in Europe-Constan | tinople June | 28-July 5 | | 10 |
| Portugal—Lisbon Russia—Moscow Russia—Odessa Russia—Riga Russia—St. Petersburg Russia—Warsaw Siberia—Vladivostock Spain—Valencia Straits Settlements—Singan Turkey in Lurope-Constar Turkey in Asia—Pagdod | Мау | 16-June 21 | 89 | 19 |
| | | | | |
| Prazil Manage | Tuno | 13.35 | 14 | 11 |
| Renail Page | Tune | 20-27 | 2 | * + |
| Rearil—Pio de Taneiro | Tune | 74-27 | 1 | ~ |
| Cuba—Dajquiri | Tuly | 28 | 2 | 1 |
| Mexico—Laguna | Tune | 27-July 4 | | |
| Brazil—Manaos. Brazil—Para. Brazil—Rio de Janeiro. Cuba—Daiquiri. Mexico—Laguna. Mexico—Veracruz. | July | 14-17 | 2 | |
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| Ceylon—Colombo | · · · · · Inne | 0-13 | | 3 |
| India—Bombay | June | 9-16 | | I |
| India—Calcutta | May | 31-june b | | 52 |
| Ceylon—Colombo. India—Bombay. India—Calcutta India—Rangoon | May | 31-June 13 | | 1.4 |
| | | | | |
| California- Manuela Const | _ | | | |
| Oakland | July | 21 | 1 | I |
| California-Contra Costa C | ounty- | | | |
| Concord | July | 15 | I | I |
| California-Prenois Valley. | July | 24 | I | τ |
| California— Manuela Comer Oakland California—Contra Costa C Concord California—Prenois Valley. Ten miles fr | om Martine: | z. | | |
| | | | | |
| China Canton | Tune | 70-20 | | Present |
| India-Rombay | Tune | 0 22 | | 00 |
| India—Calcutta | May | 31-lune 6. | | 45 |
| India—Rangoon | May | 31-June 13 | | 45 68 |
| Indo China—Saigon | May | 31-June 13 | 30 | 26 |
| Japan-Osaka | June | 0-20 | 2 | |
| Peru-General | June | 20-27 | 53 | 3 16 |
| Peru-Callao | June | 20-27 | I | |
| Turkey in Asia-Bagdad | May | 16-June 21 | 30 | |
| Venezuela-Caracas | July | 18-23 | | Present |
| China—Canton . India—Bombay . India—Calcutta . India—Rangoon . Indo China—Saigon . Iappan—Osaka . Peru—Genera . Turkey in | July | 18-23 | | Present |
| Public Health and | Marine 1 | Hospital S | ervic | 0. |
| rubiic meann and | Maine 1 | rroshitar 9 | CI VIL | |

Official list of changes of stations and duties of com-missioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 30, 1508:

BAILLY, C. WILLIAMS, Acting Assistant Surgeon. Granted leave of absence for seven days, from July 28, 1008

BAIRD, W. A., Acting Assistant Surgeon. Granted leave of

absence for sixteen days, from July 10, 1008 Banks, C. E., Surgeon. Granted leave of absence for

twenty days, from August 23, 1908.
Blue, Rupert, Passed Assistant Surgeon. Detailed as a member of a Revenue Cutter Service Retiring Board.

San Francisco, Cal., August 3, 1908.
Brincherhoff, W. R., Director Leprosy Investigation Station. Granted leave of absence for thirty days, from August 3, 1908

BRYAN, WILLIAM M., Assistant Surgeon. Granted leave of absence for one day, July 21, 1908, under paragraph 191 Service Regulations

CARRINGTON, P. M., Surgeon. Granted leave of absence for sixteen days, on account of sickness.

Cobb, J. O., Surgeon. Granted leave of absence for seven

days, from July 29, 1908. Gibson, F. L., Pharmacist. Granted leave of absence for

thirty days, from September 8, 1908, and excused without pay for one month and ten days, from October 8,

GLEASON, C. M., Acting Assistant Surgeon. Granted leave of absence for twenty days, from August 1, 1908.

KENNEDY, S. R., Acting Assistant Surgeon. Granted leave of absence for thirty days, from July 23, 1908.

KING, W. W., Passed Assistant Surgeon. Detailed as a member of a Revenue Cutter Service Retiring Board,

San Francisco, Cal., August 3, 1908. McIntosh, W. P., Surgeon. Granted leave of absence for

one month, from August 14, 1908. Miskimon, Robert, Pharmacist. Gran

Granted an extension of leave of absence for seven days, from July 27, 1908.

SMALL, E. M., Acting Assistant Surgeon. Granted leave of absence for four days, from June 20, 1908. STEARNS, H. H., Acting Assistant Surgeon. Granted leave of absence for one day, on account of sickness, July 13, 1908.

STIMSON, A. M., Passed Assistant Surgeon. Granted leave of absence for one month and fifteen days, from

August 17, 1908. Stoner, J. B., Surgeon. Granted leave of absence for one

day, July 26, 1908. VILLOLDO, P., Acting Assistant Surgeon. Directed to proceed to Cienfuegos, Cuba, for temporary duty, upon completion of which to rejoin his station at Havana.

WATKINS, MCD., Acting Assistant Surgeon. Granted leave of absence for one day, July 29, 1908.

Wertenbaker, C. P., Surgeon. Directed to proceed to Wachapreague and Cape Charles City, Virginia, for the purpose of examining keepers and surfmen of the Life Saving Service

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the Unifed States Army for the week ending July 18, 1908:

GIRARD, J. B., Colonel. Detailed to represent the Medical Department of the Army at the Fifth Pan-American

Medical Congress at Guatemala, August 5th to 10th.

KENDALL, W. P., Major. Ordered from Fort Ethan Allen,
Vermont, to Fort Ontario, N. Y., for temporary duty.

KIKEPATRICK, T. J., Major. Granted leave of absence for
one month, about August 15th.

Moncrief, W. H., Captain. Granted leave of absence for

two months, when services can be spared, with permission to ask extension of one month.

The following named first lieutenants of the Medical Reserve Corps, recently appointed from contract surgeons, with rank from July 7, 1908, were ordered to active duty in the service of the United States, July 28, 1908: E. A. Anderson, J. K. Ashburn, H. C. Bierbower, I. C. Brown, P. D. Brown, W. E. Brown, G. F. Campbell, G. R. Clayton, G. W. Cook, C. W. Cullen, W. O. Cutliffe, O. F. Davis, S. C. De Krafft, A. C. Delacroix, W. F. de Niedmann, C. T. Dulin, H. W. Eliot, J. A. Escobar, E. J. Farrow, Frederick Iladra, W. E. Hall, C. H. Halliday, J. R. Hereford, T. G. Holmes, M. E. Hughes, T. W. Jackson, F. E. Jenkins, E. K. Johnstone, E. C. Jones, G. B. Jones, P. S. Kellogg, J. F. Leeper, J. C. Le Hardy, Robert Lemmon, D. P. McCord, H. C. McLeod, S. B. McPheeters, J. N. Merrick, F. H. Mills, J. R. Monnt, W. H. Myers, J. B. Pascoe, E. W. Patterson, Howard Priest, C. H. Richardson, W. E. Sabin, J. M. Shepherd, R. E. Sievers, J. T. H. Slayter, R. D. The following named first lieutenants of the Medical

Smith, W. H. Smith, F. H. Sparrenberger, S. A. Springwater, G. P. Stallman, A. V. Stephenson, H. W. Stuckey, C. A. Tetrault, J. I. Thorne, C. A. Treuholtz, W. H. Tukey, G. T. Tyler, T. C. Walker, J. M. Wheate.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending August 1, 1908:

BACON, S., Assistant Surgeon. Detached from the Naval Hospital, New Fort Lyon, Colo., and ordered to the South Dakota.

BUTTS, H., Assistant Surgeon. Detached from the Naval Station, Cavite, P. I., and ordered to the Naval Hos-pital, Canacao, P. I.

CHILTON, A. L., Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

Hospital, Philadelphia, Pa.
Crow, G. B., Assistant Surgeon. Ordered to the Naval
Hospital, Norfolk, Va.
KELLY, H. L., Assistant Surgeon. Detached from the Naval
Hospital, Canacao, P. I., and ordered to the Naval
Station, Cavite, P. I.
PAYNE, J. H., Passed Assistant Surgeon. Detached from
the Navy Yard, Boston, Mass., and ordered to the
Salcm when commissioned.

Pheres I. R. Assistant Surgeon. Ordered to the Naval

PHELPS, J. R., Assistant Surgeon. Ordered to the Naval Hospital, Boston, Mass.

Births, Marriages, and Beaths.

Married

FAHY-LEARY.-In New Haven, Connecticut, on Sunday, FAHY—LEARY.—In New Haven, Connecticut, on Sunday, July 13th, Dr. George C. Fahy and Miss Emma Leary. GOTTSCHALK—GLENNY.—In Chester, Pennsylvania, on Tuesday, July 14th, Dr. Leon Gottschalk, of Marcus Hook, Pennsylvania, and Miss Mary Glenny.

MAGILL—HELIBRON.—In Philadelphia, on Wednesday, July 22d, Dr. Isadore D. Magill and Miss Elsie Heilbron.

O'CONNER—TOOHEY.—In Philadelphia, on Tuesday, July 28th Dr. F. W. O'CONNER—TOOHEY.—In Philadelphia, on Tuesday, July 28th Dr. F. W. O'CONNER—TOOHEY.—In Philadelphia, on Tuesday, July

28th, Dr. E. W. O'Conner and Miss Margaret A. Toohey.

Died.

Baker.—In Philadelphia, on Monday, July 27th, Dr. Walter Clement Baker.

BALLOU.--In Gardenville, New York, on Saturday, July

25th, Dr. Edward H. Ballou, aged fifty-four years.

Brown.—In Portland, Oregon, on Monday, July 27th, Dr.

Edward Vincent Brown, of Tarrytown, New York, aged

seventy-one years.
Cook.—In Syracuse, New York, on Wednesday, July 22d, Dr. George W. Cook, aged eighty years. EAST.—In Rochester, on Wednesday, July 22d, Dr. Fred-

erick East, aged fifty-four years.

EVANS.—In Chester, Pennsylvania, on Wednesday, July 29th, Dr. Franklin J. Evans, aged forty-five years.
EVANS.—In Rockland, Maine, on Thursday, July 23d, Dr. Horace Young Evans, of Philadelphia, aged seventy-three

GREENE.-In Chicago, on Monday, July 27th, Dr. Frank

Callin Greene, aged hity-one years.

Jacobson.—In Portsmouth, Virginia, on Tuesday, July 28th, Dr. Louis C. Jacobson.

LAIDLAW.—In New York, on Wednesday, July 29th, Dr. Alexander Hamilton Laidlaw, aged eighty years.

MERVILLE.—In Milwaukee, on Monday, July 27th, Dr. H.

Merville, aged sixty-eight years PAUL.—In Philadelphia, on Friday, July 24th, Dr. James

REA .- In La Fayette. Alabama, on Friday, July 24th, Dr.

Renamin F. Rea, Sr., aged eighty-nine years.
REDICK.—In Silver City, New Mexico, on Monday, July
27th. Dr. Charles A. Redick.
REVNOLDS.—In Mendham, New Jersey, on Sunday, July 26th, Dr. Abraham Moreau Reynolds, aged seventy-nine

SNYDER.—In Brooklyn, New York, on Thursday, July 30th, Dr. William Henry Snyder, aged twenty-three years. STOUT.—In Berlin, New Jersey, on Friday, July 10th, Dr. Daniel M. Stout, aged eighty-two years.

WIST his Youkers, New York, on Sunday, July 20th, Dr. Cower, F. West.

Dr. George E. West.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and Medical News

A Weekly Review of Medicine, Established 1843.

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NEW YORK, AUGUST 15, 1908.

WHOLE NO. 1550.

Original Communications.

LOCAL AND SURGICAL TREATMENT OF CHRONIC DIARRHŒA.

With Description of a New Operation for Irrigating Both the Large and Small Intestines.*

By Samuel G. Gant, M. D., LL. D., New York,

Ex-President, American Proctelogical Society: Professor of Diseas of the Rectum and Anus, New York Postgraduate Medical School and Hospital.

Chronic diarrhœa is of common occurrence, its progress is insidious, and its results far reaching. This class of patients not only suffer from exhaustion and loss of weight brought about as a result of frequent evacuations, but also from nervous phenomena, anæmia, skin eruptions, headache, and other manifestations of intestinal autointoxication and underfeeding.

In recent years I have had unusual opportunities for studying this complaint, and my observations have led me to believe that the primary cause of chronic diarrhea is situated in the colon, and more especially the sigmoid flexure and rectum, very much more frequently than is generally supposed. In some instances disease in the lower bowel is secondary to and induced by pathological lesions of the stomach or small intestine, which excite an irritating discharge that is constantly poured into the colon. It sometimes happens, however, that disease thus produced in the colon and rectum remains to continue the diarrhea after the original cause has been removed.

Usually a proctoscopical or sigmoidoscopical examination will reveal the location and nature of the irritation which excites the frequent stools, but when it does not, if a local or irrigating treatment is substituted for internal medication, and the frequency of the evacuations is diminished, it demonstrates that the cause of the diarrhoa is located in the lower bowel. While endeavoring to make a diagnosis it is well to bear in mind that a chronic diarrheea may be induced by colitis, stricture, benign or malignant tumors which encroach upon the lumen of the gut, foreign bodies, a deviated coccyx, fæcal impactions and adhesions, angulations, or other mechanical obstruction which occludes or keeps the intestine in a state of constant irritation. Of these ætiological factors in chronic diarrhœa, we are at present interested only in colitis.

Colitis is by far the most common cause of this 'Read before the Medical Association of Greater New York, Nov.

 complaint, and it may be catarrhal, tuberculous, dysenteric, syphilitic, or gonorrhœal in character.

Chronic inflammation of the mucosa may excite frequent discharges of mucus, but does not greatly increase the number of daily evacuations; but when the membrane becomes ulcerated the frequency of the stools is immediately increased. When the ulcers are small and far apart, the daily movements will be few; on the other hand, when they are multiple and of large size, the patient will be compelled to spend most of the time in the toilet.

As a general rule, when ulceration is extensive it most frequently involves the sigmoid or the rectum.

If chronic diarrhea, as I believe in the vast majority of cases, is induced by ulcerative lesions situated in the colon, then it appears to me that the usual method of treating this complaint with drugs internally administered is wrong and should be discontinued.

Medicines judiciously used will lessen the number of evacuations and sometimes arrest a violent attack of acute diarrhea by drying up the secretions or preventing peristalsis, but in the chronic form I have rarely known them to effect a permanent cure, but have on many occasions witnessed the return of the diarrhea as soon as the immediate effects of the drugs had worn off.

Chemicals like bismuth and chalk, opiates, intestinal antiseptics, mild astringents, and other remedies so frequently prescribed for the relief of this condition, are harmful to the system in many ways, and patients frequently become addicted to them. For these reasons and because of their ineffectiveness in healing lesions responsible for the frequent stools, they should be discarded in the treatment of chronic diarrhea except in cases where, for any reason, direct treatment of the bowel is refused or found impracticable.

The local treatment of colitis may be nonoperative or surgical. Nonoperative measures, such as controlling the diet, having the patient remain quiet, and colonic irrigation, should be given a fair trial before operative procedures are resorted to. The success of the nonoperative treatment depends mainly upon the thoroughness with which the bowelts cleansed. The frequency of the evacuations diminish as soon as the irrigating fluids hereafter to be named are correctly used. Many physicians and nurses believe it an easy matter to insert a colon tube to administer a high enema or irrigate the intestine. Owing to the obstruction to the passage of the tube offered by the sphincter muscle the rectal valves, O'Beirne's sphincter, the flexures of

the bowel, and the straining of the patient, it is most difficult in many instances to introduce a soft rubber pipe well up in the colon. It does not follow by any means that the tube has reached its destination simply because it disappears within the bowel, for the reason that it not infrequently doubles upon itself within the rectum or sigmoid flexure. When there is difficulty in inserting the pipe it can be done quickly by introducing the proctoscope, locat-

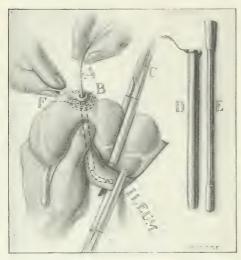


Fig. 1.—Showing method of introducing the catheter into the ileum in the author's colostomy, with an arrangement for irrigating the small intestines.

ing the entrance to the sigmoid, and then pushing it through the instrument and into the colon.

Usually after the bowel has been irrigated for a week, the frequency of evacuations (sometimes ten to thirty) are reduced to one or two daily. In those cases where improvement is less marked, it indicates that there is an enterocolitis, or that the solution is not reaching ulcers situated in the upper part of the large bowel.

The irrigating treatment is usually effective in all varieties of colitis, but naturally takes a longer time to overcome a tuberculous than it does other types

of ulcerative colitis.

Following the treatment of diarrhoea by enteroclysis, there is always a marked improvement in the local and general condition of the patient, irrespective of the nature of the solution employed; apparently much of the benefit derived from this procedure is due to the mechanical effect of the fluid in cleansing the ulcers and freeing the mucosa of toxincs, irritating discharges, and débris. In the beginning the colon should be irrigated twice daily, but later on in proportion as the ulcers heal the treatment should be diminished to one daily or two or three times weekly, according to indications. I have obtained good results following daily irrigation of the bowel with hot and ice water, and solutions containing boric acid, common salt, quinine, ichtigal, form of blued, colonless hadrasts, Lamerra

and soda, silver nitrate, and other remedies too numerous to mention.

When ulceration is slight or moderate in degree, the solutions do well when used very weak, but when it is extensive, as indicated by very frequent evacuations containing pus and blood, they should be used stronger until there is evidence of improvement. When there is considerable bleeding I begin the irrigation with a solution of silver nitrate I to 500, and gradually decrease the amount of silver each day as healing takes place.

The stools of some persons suffering from chronic diarrhea are exceedingly offensive; in such cases, an occasional irrigation with a one or two per cent. solution of ichthyol will serve both to deodorize the movements and to cure the ulcers.

Some patients complain of colic, enterospasm, or general soreness of the bowel at times; under such circumstances much can be done to render them more comfortable and to lessen intestinal irritation by hot abdominal fomentations and the high injection into the colon of 4 oz. (120 c.c.) of warm liquid paraffin or oil containing 20 grains (1.2 grammes) of bismuth, which is allowed to remain in the bowel over night.

When nonoperative measures fail to cure diarrhea after a few weeks' or months' trial, one of the surgical operations devised for the relief and cure of ulcerative lesions of the colon should be performed. Fortunately for this class of sufferers, the surgical procedures commonly resorted to for this purpose are usually effective and involve but little danger. The following operations have been used with more or less success in the treatment of simple and ulcerative colitis inducing chronic diarrhea?

1, Resection of the colon; 2, colostomy; 3, appendicostomy; 4, cæcostomy with irrigation of the small intestine (Gant's operation); and 5, intestinal exclusion.

Resection of all or a part of the colon is occasionally justifiable in the treatment of colitis, and is indicated when the functionating power of the gut is irretrievably lost as the result of exhaustion, extensive ulceration, cicatrices, strictures, or multiple polyps.

I have reported a case of chronic diarrhea of years' standing, caused by colitis and multiple strictures, which was cured by excising the rectum, sigmoid flexure, and the descending and right half of the transverse colons.

From my experience with this and other cases I would not hesitate to remove the entire colon down to the rectum under such circumstances mentioned. In such deplorable cases, colostomy and other methods of treatment do not offer to the patient any hope for permanent relief, while complete cradication of the disease does, and the operation is not nearly so difficult or dangerous as one who has not performed it would believe.

Colostomy has been successfully employed many times in the treatment of chronic diarrhea due to intestinal ulceration, but this procedure has not become popular because of the difficulty experienced masking an artificial anus which will prevent leakage of gas and faces, and further because of the

danger which accompanies the operation for restoring the continuity of the intestines after the colitis has been cured. The colostomy opening may be made at any point along the colon, but by preference the anus should be established high up, in order to insure its being above the disease, otherwise the irrigation may be incomplete and unsuccessful.

In making a colostomy in this class of cases it is not necessary to make a perfect spur, as is done when the operation is performed for the relief of cancer or other disease causing chronic obstruction, because the bowel can be made to heal by frequent flushings in spite of the fact that the fæces pass over the diseased gut. I mention this because it is very much easier to repair a small opening in the bowel made for irrigating purposes than it is to make an end to end or lateral anastomosis and close an artificial anus, where the fæcal current has been completely diverted from its normal course.

The technique of colostomy has been greatly improved (see Gant's Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures, third edition) recently, and patients operated upon by modern methods have a much better control over the artificial anus than was formerly the case, an advantage greatly appreciated by the patient where the opening is to be permanent.

In 1892 Gibson' suggested a novel way of performing right inguinal colostomy, which has been successfully employed in the treatment of ulcerative lesions of the lower bowel. This procedure has met with favor because it permits a thorough bowel irrigation and at the same time in a measure prevents the involuntary escape of fæces.

The main point of vantage in Gibson's operation is to be found in the valvelike arrangement formed by the placing of three layers of Lambert sutures in the cæcum, above and below the opening, which serve to invert the wall of the gut at the sides of the catheter. He leaves the ends of the last tier of stitches long and anchors the cæcum with them.

On one or two occasions I have observed the fæces escape beside the tube on the sides which were not infolded. This has led me to modify this operation by forming a circular cone shaped valve, which is done by introducing three or four sero-muscular purse string sutures, which, when tied, invert the bowel layer by layer equally on all sides of the catheter (Figs. 1 and 2, F).

Appendicostomy at the present writing is the most popular of all the surgical procedures which have thus far been devised for the relief and cure of

chronic diarrhœa.

I have elsewhere (Boston Medical and Surgical Journal, September 6, 1906) reported eight cases of chronic diarrhea of different types treated by appendicostomy and through and through irrigation. Since then I have handled in the same manner twenty-seven other individuals suffering from ulcerative colitis.

One of my earlier patients died as a result of extensive sloughing of the cæcum in the neighborhood of the appendix. In the remaining thirty-four patients the number of daily stools rapidly diminished immediately following inauguration of through and through irrigation, and the general appearance of my patients improved correspond-

ingly. At the end of a week or ten days, with two exceptions, they did not have more than two or three movements daily, and had gained considerable in weight; at the end of from four to twelve weeks they had fully recovered from their diarrhoea and the manifestations arising from the consequent autointoxication. In the two patients referred to who did not do so well I could not get the evacuations below three or four in twenty-four hours, and occasionally, after experiencing discomfort in the centre of the abdomen, they would have what they called an "explosion," which would be followed by the discharge of a large number of soft or fluid movements and gas. A careful study of these subjects and their stools convinced me that they suffered both from catarrh of the small intestine and ulcerative colitis. Due attention was then paid to the treatment of the condition in the small bowel, while irrigation was kept up in the colon, and in a short time both made a satisfactory recovery.

The appendicular outlet was kept open in the different cases for a time varying from five weeks to six months, and in the entire series of cases the diarrhœa did not return after the opening was closed with two exceptions. In both the irrigation had been discontinued within two months of the time of operation. From this experience I have concluded that it is inadvisable to close the opening or remove the appendix sooner than three or six months following the operation. Patients do not insist on early closing, as a rule, because the opening is small, and they are rarely bothered with the involuntary escape of gas and fæces. In some instances the appendicular opening remained free throughout the treatment, but in others it was found necessary to insert a small catheter to keep it from

becoming occluded.

After a cure had been effected, in a few cases the appendicular opening closed spontaneously; in others the aperture was sealed by destroying the mucosa with chemicals, an electrical or a Paquelin cautery, and in the remainder, under local anæsthesia, the appendix was freed, ligated, and excised without entering the free peritoneal cavity, and the wound

closed by plain catgut.

I have called attention to the good points of appendicostomy, but now I wish to point out a few disadvantages of this procedure. When the appendix is small, short, strictured, or is firmly bound down by adhesions, it is useless for irrigating pur-The appendix occasionally has a tendency to slip into the abdomen during postoperative vomiting and early attempts at irrigation. It has been known to become necrotic, and in one case of my own death followed from sloughing of the cæcum at the appendicular attachment, presumably as the result of tension. On account of its small size, the appendicular opening requires considerable attention to prevent its closing. Occasionally considerable time is lost in searching for the appendix and freeing it from neighboring structures.

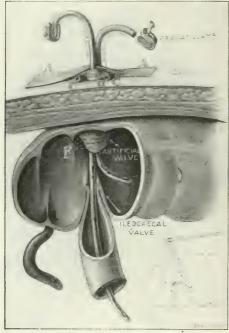
Finally, it may be stated that appendicostomy is not a suitable operation to employ when there are both an ileitis and ulcerative colitis, which play their respective parts in causing the diarrhæa, because this procedure permits of colonic irrigation

only.

Cacostomy. I have successfully employed cacos-

¹Reston Medical and Surgical Journal, exly, 1902

tomy twelve times in the cure of chronic diarrhœa. In six cases the procedure of Gibson, which has already been described, was followed, and in the other six my method was practised. According to my plan, cæcostomy may be resorted to in all cases of chronic diarrhœa which are suitable for appendicostomy and those which are not, because of the diseased or deformed condition of the appendix, and also cases where both the small and large intestines are diseased. Formerly I was greatly prejudiced in favor of appendicostomy, but a larger experience has convinced me that cæcostomy alone, and more especially when employed with small intestine irrigation, has a much wider field of usefulness than is generally believed at the present writing.



The z S every arrange of and methods of holding and closing the catheters in the author's colostomy.

Both excostomy and appendicostomy are desirable procedures because they are effective, are not dangerous, can be performed quickly, and leave few if any undesirable sequelæ.

Personally I have no more hesitancy in advising these operations for the relief of chronic diarrheea

than appendectomy for appendicitis.

I will now for the first time describe what I believe to be a new and effective way of irrigating both the small and large intestine through the same opening in the execum, which, for the want of a better name. I have designated excussions with an arrange most few translation both the large and small intestion of child constitutes.

Broth d cribed, the steps in the technique of this quarter are as follows: First step: Through a two inch intermuscular incision made directly over it the cæcum and the lowermost part of the ileum are withdrawn and the edges of the wound covered with gauze handkerchiefs.

Second step: The execum and ileum are stripped clear and clamped (Fig. 1, C) with forceps covered with rubber tubing, in order to prevent soiling of the wound when the bowel is opened.

Third step: Four seromuscular purse string sutures are inserted on the anterior surface of the excum at or outside the longitudinal band directly opposite the ileoexcal valve (Figs. 1 and 2, F). Using the knife for the outer coats and the scissors for the mucosa, the bowel is quickly opened within the suture line.

Fourth step: The bowel is grasped at the juncture of the large and small intestine and held in such a way that the ileocæcal valve rests between the thumb and fingers (Fig. 1). A Gant catheter guide (Fig. 1, B and D) is then introduced through the opening and directed across the cæcum, where it is guided through the ileocæcal valve into the small intestine by thumb and fingers of the left hand.

Fifth step: The guide is held by an assistant while the obturator (Fig. 1, A) is removed and a No. 12 catheter (Fig. 2, A) is introduced into the small bowel. The guide is then removed and the catheter anchored to the cæcum by a catgut or silk suture to prevent its slipping.

Sixth step: A short piece of rubber tubing of the same size and three inches (Fig. 2) long is introduced beside the catheter into the cæcum for an inch (Fig. 2) or more, when both are fastened together by a narrow band of adhesive plaster, placed around them on a level with the skin (Fig. 2, B).

Seventh step: The intestinal clamps are now removed and the purse string suture is tied, which inverts the edges of the wound about the catheters. Three or four more similar sutures are introduced, the one above the other, each in its turn causing a still further circular infolding of the bowel, all together forming a cone shaped valvular project (Fig. 2, F) all around the catheters, which prevents the escape of gas and fæces.

Eighth step: The execum is scarified and anchored to the abdominal wall by through and through silk sutures, which are tied over pieces of rubber tubing (Fig. 2, C) or by chromicized catgut stitches which include the peritonæum and fascia. The wound in the abdomen is closed by the layer method, after which the catheters are stitched to the skin, or preferably retained in place by a narrow strip of adhesive plaster placed between them and attached to the skin (Fig. 2, A).

Ninth step: Cravat clamps (Fig. 2) are adjusted to the ends of the catheters to prevent leakage, after which the operation is completed by applying the ordinary dry dressings, which are held in place by adhesive strips.

Remarks. One catheter should project further than the other, or they should be identified in some other way, in order that the nurse may know which is in the large and which is in the small intestine when the time for irrigation arrives. In order to avoid the danger of infecting the wound the treat-

ments are not begun until the fifth day, unless there is some special reason for doing so. Any of the irrigating solutions recommended in the nonoperatire treatment of colitis may be used for irrigating the small and large bowel after this operation.

In order to avoid irritation to the bowel and skin it is advisable to occasionally change the catheters. This is done by cutting the adhesive strip holding them together (Fig. 2, B) and withdrawing the one projecting into the colon. The Gant catheter guide is then passed over the other and into the small intestine, where it is held until the old catheter has been removed and a new one inserted, when it is withdrawn.

A short piece of tubing is next introduced into the cæcum and bound with adhesive to the catheter entering the small bowel, and then both are prevented from slipping out by a second adhesive strip

applied as described.

Before finally deciding upon the technique as described, I attempted small intestinal irrigation by passing a silver catheter through the cæcal opening and the ileocæcal valve each time the small bowel was irrigated, to avoid the use of two catheters, but this practice was abandoned as impractical because of the difficulty encountered in locating and passing the valve, and further because the patient cannot carry out this form of irrigation.

After recovery, when spontaneous healing does not follow withdrawal of the catheters, the opening may be closed by cauterization or with sutures without general anæsthesia or the necessity of enter-

ing the peritoneal cavity.

This procedure is also useful in the treatment of conditions other than diarrhoea. It may be emploved to advantage in the treatment of ordinary and pernicious anæmia, autointoxication, ptomaine poisoning, diarrhœa of children, intestinal feeding following operations on the mouth, throat, œsophagus, or stomach, in stricture of the œsophagus or stomach, and gastric ulcer, cancer, or other disturbances of the stomach, where rest is indicated, and also can be used for studying different diseases, to note the amount and character of the intestinal juices and discharges, the nature of the fæces, the effect of direct action of the salines and other cathartics upon the bowel, the results of hot and cold enteroclysis on the blood pressure, and many other interesting problems.

43 WEST FIFTY-SECOND STREET.

THE USE OF THE BRONCHOSCOPE, ŒSOPHA-GOSCOPE, AND GASTROSCOPE.

With Reports of Fourteen Cases.*

BY T. H. HALSTED, M. D., Syracuse, N. Y.,

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So recent and so valuable is the art of bronchoscopy, œsophagoscopy, and gastroscopy that it seemed to the writer that a report, necessarily brief. of the work which he has done along these lines should be of value, because at this stage of development the cumulative experience of various workers will be helpful, in suggesting at least, to what extent

*Read at the meeting of the American Laryngological Association held in Montreal, Can., May (1, 12, 13, 1908)

this method can be applied with safety and benefit. There will be no reference in this paper to the history of the development of this art, though it may be pertinent to say that a number of men in this country, especially Coolidge, Ingals, Mosher, Mayer, Einhorn, Jackson, and Boyce, have done most valuable work, much of it original, in bringing this method to its present state of practical utility.

The work described and cases reported in this paper covers a period of but seven months, and includes eighteen operations on fourteen patients, fourteen times under general anæsthesia, three times under cocaine, once without any anæsthetic. These eighteen operations were all done either as a means of treatment or of diagnosis, and do not include four cesophagoscopies on four young and willing physicians under cocaine, made for experimental purposes, nor a number of direct laryngoscopical examinations made in the office for the purpose of diagnosis as well as to acquire skill in technique. Other experimental and exceedingly valuable work has been on the dog, usually in association with Professor Knowlton, of the physiological department of Syracuse Medical College, and once, the most valuable experience of all, under the direction and instruction of the master of this art in America, Dr. Chevalier Jackson, and his assistant, Dr. Boyce, to whom I cannot sufficiently express my deep sense of gratitude for and appreciation of their generous instruction. I have been assisted in my operations mainly by Dr. J. C. Palmer and Dr. Adelaide Dutcher, and by Dr. J. J. Buettner as anæsthetist. Assistants should be specially trained, as the proper performance of their work is essential to a good result, and I have been fortunate in having good assistants.

The instruments which I have used are those known as Jackson's, having the light at the distal end of the tube, the current supplied by a double dry cell battery, though in the last two cases a transformer, using the city alternating current, was employed. Jackson's instruments, which I have, consist of the separable speculum or spatula, for direct laryngoscopy, two bronchoscopical tubes of 5 and 7 mm. in diameter for upper bronchoscopy, two tracheoscopes for tracheoscopy and lower bronchoscopy, two esophagoscopes, of 7 and 10 mm. in diameter, and one gastroscope, 10 mm. by 80 cm. in length, for the examination of the stomach. The small lamp, no larger than a grain of wheat, has given me surprisingly little trouble, and the blurring of the light by mucus and secretions covering it is easily cleared by the use of the suction pump, swabbing, or the removal of the light carrier and wiping of the lamp, this latter procedure requiring but a fraction of a minute. Among the many advantages of Jackson's instruments over Killian's, in which the light is thrown from the outside down the tube, is the fact that physicians other than the operator car look down the tube and note the findings as well as

the operator himself.

Accessory instruments, consisting of probes. hooks, cannula forceps of various lengths, Mosher's alligator forceps, Coolidge's gauze sponge carriers, suction pump and suction cannulas for removal of fluids and secretions, are necessary. For special cases I had made for myself a spud or he like

curette, used in my first case, a very long galvanocautery electrode, intended to be used in a case of specific web stricture of the larynx. There is a demand, rapidly being met, for a new and complete armamentarium of straight instruments to meet the various conditions that are being encountered.

The general anæsthetic used in most cases was ether, usually preceded by somnoform and atropine to lessen bronchial secretions. While probably, in certain cases, cocaine might be sufficient, yet in æsophagoscopy and gastroscopy the retching against the rigid tube might be disastrous locally by producing perforation, or rupture of a cerebral blood vessel. In the case of a physician on whom I did æsophagoscopy under cocaine, there was produced subconjunctival hæmorrhages through the violent retching. Cocaine is sufficient for direct larvngoscopy in most cases, but in some cases, especially operative, ether is preferable.

Ether was used in all cases where upper bronchoscopy was done, excepting once, when I did it quite satisfactorily under cocaine, and have no doubt it will often be sufficient, as indeed Killian and others have repeatedly shown. In the one case in which I examined the bronchus under cocaine, I had previously examined the same patient under ether and consequently knew what to look for. In her case the ether examination was much the most satisfactory. Rectal anæsthesia should here be the ideal method, but I have had no experience with it.

The patient, excepting for direct laryngoscopy under cocaine, is placed on the back on the table with shoulders projecting and head hanging over and supported in the Boyce position. The correct position of the head and its proper holding are absolutely essential to the proper introduction of the instrument, and an assistant must be trained to do this. In some cases the mouth is best gagged with a tailor's thimble on the assistant's index finger, introduced between the teeth on the left side. In many cases too wide gagging of the mouth interferes seriously with breathing, and in many cases the gag is best dispensed with, but to protect the thin tubular instrument from being bitten and dented, the thimble at least should be constantly held between the teeth. Ferguson's mouth gag was the one used when a gag was employed.

In one case of bronchoscopy, during the act of freeing the bronchus from a plug of mucus, the small gauze sponge became detached from the carrier and was left in the bronchus until a forceps quickly introduced removed it. Since that accident. all sponges have had long white threads attached, the thread wrapped loosely around the carrier. So delicate and so long are the forceps and cotton carriers that the utmost care must be exercised to see that the forceps jaws are properly tempered. Several of mine have been broken while being handled, fortunately not while inside the patient. In working on the larynx or bronchus, one should have instruments ready for an immediate tracheotomy.

While all the cases were of great interest to the writer and all of them warrant an extended report, yet to give a minute report of all would occupy too much time and space. The majority will be given simply in brief outline, some in greater detail. Cases I to VI sen reported at the naceting of the Medical Society of the State of New York in January,

CASE I.—(Esophagoscopy. (Ether.)

Penny Indged for tour and one half years at the cardiac end of the asophagus, in a five year old boy. Obstruction always supposed to be due to congenital stricture. X ray examination revealed forcign body. Operation under fluroscope unsuccessful. Successful removal of penny by

asophagoscopy under ether. Recovery.

Donald C., aged five years, residing in Cortland, N. Y.,
was brought to me by his parents on October 11, 1907, to
have bougies passed to dilate a stricture of the cosophagus which he was supposed to have had from birth. He had considerable difficulty from birth in keeping down milk, and had never taken into the stomach solid food, this always being regurgitated. Between six months and two years of age he had two or three attacks of bronchitis, and wheezed a great deal of the time, the doctor regarding it as asthma. At two years he had a severe attack of dysenas astima. At two years he had a severe attack of dysen-tery. The following winter he coughed and whezeed a great deal, chest filling up when he ate, and relieved on regurgitating his food. At about two and one half years he began having severe pain in the stomach, at times lasting several hours. Months would elapse without these attacks, and again they would continue for several weeks. Had been treated for stomach trouble up to this time.

One consultant said there was a narrowing of the pyloric end of the stomach and suggested gastrojejunostomy. When four years of age he could tell about his swallowing, knowing as soon as he swallowed whether or not the food would be kept down or regurgitated. He could retain liquids, provided he drank them before eating any semi-solid food. Sometimes he would go two or three days without retaining even a drink of water; perhaps he would throw up a piece of food he had eaten several days previous, when he would get relief and could drink nearly a quart of milk, or other liquid. He was constantly hungry, asking at times every five minutes for something to eat. A few weeks before bringing the boy to me the parents had taken him to a well known physician in Buffalo, who made a very careful examination of him, including a chemical examination of the regurgitated food, which he said had not entered the stomach, but had been evidently retained in a pouch. His diagnosis was a congenital stricture of the a pouch. His diagnosis was a congenital stricture of the escophagus, and advised that he be placed in the care of a laryngologist for the passage of esophageal bougies, which was the reason for his being brought to me. A congenital stricture, or narrowing of the esophagus, near the cardiac end of the stomach, had been the almost unanimous diagnosis of the greater number of physicians who attended him or who saw him in consultation at home or in neighboring cities

He was undersized, rather listless and peevish, but in fairly good flesh, teeth so badly decayed that he was practically toothless, nothing abnormal about the throat. gave him a graham cracker, which he readily ate with half a glass of water, and at once began to wheeze. Within two or three minutes he asked for a basin, when the food was regurgitated, not vomited, and the wheezing ceased.

My diagnosis was a stricture at the lower end of the œsophagus with a dilatation or pouch above it, and advised that a radiograph be taken after bismuth and milk had been swallowed, in order to localize if possible the stricture and dilatation. That afternoon Dr. C. E. Coon made an examination with the x ray, after having given him four ounces of milk containing one ounce each of bismuth subnitrate and gum acacia.

On developing the plate, a round body the size of a ten cent piece or penny was revealed opposite the fourth of nfth dorsal vertebræ. The parents were apprised of this, and they returned with the child on October 16th (five days later), when a lateral exposure was made to make sure the foreign body was a round flat body and not a spherical one, such as a marble. This skiagraph showed it to be a flat body, apparently lying in or against the posterior wall of the gullet

The child was put under ether, and under the guidance of the throcope I introduced into the ecophagus a leng Mosher's alligator forceps encased in a soft rubber tubing. the child being in the recumbent position with down hang-ing head. The fluroscope showed plainly the progress of the forceps, and when it reached the foreign body the tub-ing war pulled off, leaving the jaws of the forceps free

The distance from the teeth to the coin was eight and one half inches, or about one inch from the cardiac end of the The forceps was opened when down to the coin, but notwithstanding repeated attempts carefully made, the foreign body could neither be grasped nor felt. We concluded, as we had at first feared might be the case, that cluded, as we had at first feared might be the case, that the coin was probably encysted in the posterior wall of the cesophagus. The child remained one night at the hospital, and the next morning returned home in good condition. I now ordered a set of Jackson's œsophagoscopes and bronchscopes, and during the next three weeks familiarized myself with their use as well as I could. **Casophagoscopy.**—On November 6th the child entered the Women's and Children's Hospital. No food the lightly wars allowed for eighteen house write to the

or liquids were allowed for eighteen hours prior to the operation. Atropine 1/150 grain, was given, and ether adoperation. All opine 1/150 grain, was given, and cutief arministered by Dr. J. J. Buettner. I was assisted by Dr. Dutcher, Dr. Bogart, and Dr. Coon. The child was placed in the dorsal position with head hanging down over the table, mouth held open with the Ferguson mouth gag. The table, mouth held open with the Ferguson mouth gag. esophagoscope, 40 cm. long by 7 mm., was then intro-duced and a careful inspection of the gullet made, gradually extending the tube downward toward the cardia. wall of the esophagus, pinkish in color, was beautifully



t.—Case I Skingraph showing penny Lodged at cardiac end of es phages in a rive year old child. Foreign body present tout and a half years. The Röntgen tube, because of its position, has the win the shadow higher than its actual situation.

illuminated, and at the lower end, about seven inches from the teeth, entered a distinctly enlarged cavity

After more than an hour's searching and using the probe to feel any metallic substance, but without result, I introduced through the tube a right angle curette or spud like in-strument which I had had made for the purpose, and gently curetted or scrapei the posterior wall of the œsophagus at a distance of about eight and one half inches from the teeth, corresponding with the location we had made on the previous fluroscopic examination. This was done very gently and carefully. On removing the spud and drying the surface of the few drops of blood, the edge of the coin was clearly seen. The long tube forceps was now introduced, and on the second introduction the forceps caught the coin frank and previous representations. caught the coin firmly, and penny, tube, and forceps were all removed together

The boy made an uneventful recovery, not regurgitating any food after the second or third day, though ten days after operation he had an attack of acute indigestion There began at once an improvement in his swallowing which has steadily continued, although now six months since the removal of the foreign body, the food swallowed is sometimes returned without apparently entering the stomach. He has gained greatly in his general condition he cats regularly, and seldom complains of being hungry or wanting food between meals. Whether a permanent stricture at the cardiac end of the stomach will remain, time alone will tell, but it is quite possible that as time goes on the thickening may gradually lessen and disap-

The penny had become absorbed to such an extent that it lost twenty-five per cent. in weight, is thinner than a ten cent piece, not more than two thirds of its normal thickness, and in diameter is midway between a ten cent piece and a penny. It had lodged in the posterior wall of the cardiac end of the osophagus probably when the child was six months old, possibly earlier, and had become imbedded or encysted, and had been there for at least four and a half years. At the rate of absorption that had been going on had the child lived, the penny might have been absorbed in twenty years. The x ray was of the greatest value, in fact, without it, it is probable the cause of the obstruction would not have been revealed, because the esophagoscope failed to discover it until the wall covering it was removed

Case II. Power laryngoscopy and tracherscopy. For eign body, fin of a fish, lodged for two weeks in the traches of an eight months old infant. Direct laryngoscopy, tracheotomy, and tracheoscopy under chloroform. Removal of foreign body.

was called in consultation with Dr. Hotaling on De cember 10th to see this baby, with a view to possible intubation, though Dr. Hotaling felt confident that diphtheria was not the cause of the dyspnæa from which the baby had been suffering for nearly a week. Epigastric and episternal recessions were marked, hoarseness on crying no fever, no pseudomembrane in throat. The dyspnœa was not urgent. After a careful examination, a diagnosis of probable foreign body in larynx or trachea was made The parents were urged to take the child to the Women's and Children's Hospital, which was done. An x ray ex amination by Dr. Coon was negative. A culture was negaamination by Dr. Coon was negative. A culture was nega-tive. Steam inhalations were employed, and gave some relief. On December 12th, two days later, the parents consented to an examination and operation, if necessary,

under general anæsthesia.

Operation: Preparations for an immediate tracheotomy were made. The child was given chloroform, and after much difficulty, because of its age (eight months), its undersize (weighing but fifteen pounds), my own inexperience (this being my first attempt to do a direct laryn-goscopy), a beautiful view of the larynx through the sep-arable speculum was obtained. The cords were seen per-fectly, and beyond the chink of the glottis in the trachea was clearly seen a foreign body, located about an inch below the cords and seemingly attached to the right side of the trachea, looking much like a loose piece of cartilage Several times during the examination the dyspinca became so threatening, the heart so weak, and pulse at times almost imperceptible, that I was on the point of opening the trachea, when the breathing would clear up, and the examination and attempt to remove the foreign body through the mouth continued. I was unable to introduce between the mouth comminded. I was unable to introduce between the cords the smallest bronchoscope, the glottic opening being so small, but introduced both the cannula forceps and Mosher's alligator forceps several times and attempted to grasp the foreign body, but always unsuccessfully. Finally, the breathing suddenly became so bad that I did an immediate tracheotomy, with relief to the dyspnœa, but I could not find the foreign body until the small tracheo-scopic tube was carried through the wound into the wind pipe, when it was discovered and removed, proving to be the fin of a fish. A tracheal cannula was inserted and worn for five days, at the end of which time it was removed, and the wound promptly healed, the child making an un-

CASE III.—Direct laryngoscopy (cther) for removal of papilloma of vocal cords, in a boy, nincteen years old.

Operation successful.

I had previously made a number of unsatisfactory at tempts at removal in the old way, under reflected light and cocaine, and later with direct laryngoscopy under cocaine but the boy had such complete lack of control of himselt that not much could be done

By the direct method under ether the papilloma was re-

moved without any difficulty.

C.se IV.—Œsophagoscopy (ether) in a neurotic girl of fourteen for diagnosis of asophageal obstruction. Spasmodic stricture and all symptoms entirely relieved by the examination.

This girl, who was rather anemic and of a marked neurotic temperament, was referred to me because of in ability to swallow solid food for the previous two months. There was no pain, no history of traumatism. The tonsils were enlarged, and there was a large mass of adenoids present. These were removed with relief to the nasal obstruction, but not to obstructed deglutition. Two months later, diagnosticating the condition as probably a hysterical

two months, and at longer intervals with less severity for

the past eighteen months.

A laryngeoscopical examination showed no laryngeal obstruction, no abductor paralysis, and the trachea as far as could be seen showed no obstruction. The difficulty was apparently at the bifurcation of the trachea, or in the mediastinum. There was a fulness of the right lobe of the thyreoid with distinct pulsation, some dulness over the upper part of the chest on both sides in front. No bruit could be detected. The diagnosis of mediastinal pressure upon the lower end of the trachea or bronchi was made, and she was sent to St. Joseph's Hospital for further observation and care. Here she came under the care of Dr. Elsner on the medical side and of myself. Dr. Coon made several skiographs, some of which were unsatisfactory, but he thought he was able to detect a dilatation of the innominate. Dr. Elsner's opinion was that a mediastinal tumor was causing the dyspneae. Inhalations of steam were prescribed every two hours.

A bronchoscopical examination was made under ether on January 18th. The separable speculum was introduced down to the larynx, which was free from obstruction; the bronchoscopical tube was then inserted between the cords, discovering no obstruction here until the bifurcation was reached. At the bifurcation of the trachea, as detected both by the eye and the probe, was a mass of cicatricial tissue which extended into the right bronchus on the right side, and seemingly narrowed the left bronchial opening to a narrow slit, through which the large bronchoscopeal tube could not pass. An inch below the bifurcation in the right bronchus there was a web of cicatricial tissue encircling the circumference of the bronchus and narrowing the calibre of the tube at least a half. The large bronchoscope was removed, and a smaller one inserted and passed through

the narrow opening into the left bronchus.

I was able to demonstrate the bronchial stricture and

I was able to demonstrate the bronchial stricture and the cicatricial tissue at the bifurcation to the eight or ten physicians who were present and who were able to recognize the conditions as clearly as I could. It is possible the left bronchus was narrowed by external pressure as well as by the scar tissue. The diagnosis was syphilitic stricture of both bronchi, with probably some glandular thickening in the mediastinum, which might account for the shadows as shown in the radiograph. I was not aware that I had seen this patient before, but learned at the time of the examination that I had treated her at the dispensary some years previous for some throat affection, the nature of which I had no recollection.

After the examination I looked up the dispensary records and found I had treated her five years ago for syphilitic (tertiary) ulcer on the posterior wall of the nasopharynx, and which had promptly healed under the iodides.

Under mercurial unctions, large doses of the iodides, and inhalations of steam, the patient immediately began to improve, and during the three months she was in the hospital had but one serious and threatening attack of dyspnæa. This was relieved by expelling a large mucilaginous semi-

One month later, under cocaine at my office, with the patient sitting up, upper bronchoscopy was again done, and the strictures again seen. A month later, under ether at the hospital, the patient submitted to a third bronchoscopy, this time with a view to local treatment. The strictures were located as before, the ulcerations covered with a hard scab or crust, exactly like the crusts that form on the anterior part of the nasal septum, were removed by forceps, and a moist gauze sponge and a ten per cent. solution of argyrol applied. There was no reaction, and she left the hospital in two days, and is very mych improved. She is taking 180 grains of potassium iodide daily.

My present plan is to repeat the applications of argyrol under eocaine bronchoscopy, hoping to get rid of the crusts, and when that occurs she will be relieved of her dyspnea almost entirely, and if not dilatation of the stricture will

CASE VII.—Direct laryngoscopy under ether in an eight

months old baby revealed a sharp piece of glass imbedded in largux. Attempt at removal dislodged it, causing its disappearance but not removal. A second operation was refused. Baby in former condition.

The clinical history of this baby, who was a patient of Dr. Werfelman's, was almost exactly that of Case II, and after sensultation a chagnesis of foreign body in the

neurosis, but still uncertain, I advised an desophageal examination. This was done on December 24, 1907, at St Joseph's Hospital, under ether. The desophagus, pale pink in color, with no ulceration, no stenosis, was explored throughout, and nothing that seemed abnormal discovered, beyond a very decided fluttering or thumping, at a point half way down, of the anterior wall of the desophagus against the instrument. This was synchronous with the heart beat, and was visible to the eye and felt against the instrument, and even heard outside the body. On passing this particular point the fluttering stopped. Whether this was an abnormality or of pathological significance I do not know. It is nearly five months since the examination, and the girl has had absolutely no difficulty in swallowing solids as well as liquids since the time of the examination I concluded it was a case of hysterical dysphagia in a highly neurotic young girl, though I dislike to use the term hysterical.

Case V.—Direct larying scopy and upper asophagoscopy

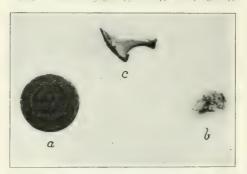


Fig. 2. 2 Some removed from cardiac end of recoplingus (Case I):

b. fin of a fish removed from the trachea of an eight months infant (Case II); c, duck bone removed from right bronchus (Case X).

(cocana) or a girl for suspected foreign body, which was not present but had ben expelled.

An examination was made under cocaine, with the separable speculum, of the larynx, lower pharynx, and upper end of the esophagus of a girl of twenty, giving a history of having swallowed a pin, which she thought was lodged in the throat. An x ray made by Dr. Burch, prior to my examination, was negative. My examination revealed a swelling of the arytenoids, caused possibly by the previous efforts of a physician groping in the dark with forceps to find the pin. The patient remained in the hospital three days, at the end of which time all symptoms and swelling had disappeared.

had disappeared.

CASE VI.—Upper bronchoscopy (ether) for diagnostic purposes. Syphilitic stricture of both bronchi, with ulceration and crusts, rerealed. Second bronchoscopy two months later, under coaine. Third bronchoscopy one month later, under ether, when argyrol was applied directly to the ulcers

in both bronch

I was called on January 10, 1908, in consultation with Dr. Mulherin, to see Mrs. E., aged fifty-five years, because i a desparation of about origin. The appointment was for 3 o'clock, but at I an urgent telephone message came from the family to come as quickly as I could, as the natient was dying. When I reached there I found Dr. Mulherin had preceded me by a few minutes. The patient was recovering from an acute attack of dyspnœa. Her forchead was clammy, covered with cold perspiration, hands cold, lips bluish, and breathing labored but not alarmingly severe, as she was now recovering from what had been a very severe attack of suffocation. The voice was clear. Dr. Mulherin had seen her in several similar attacks during the past year, and said they were relieved by the expulsion by coughing of a dark grayish, thick, and tenacious mucopurulent discharge, the expulsion of which

heat externally, and the swallowing of petrolatum. She

larınx was made. An x ray by Dr. Coon was negative. The child was received at St. Joseph's Hospital and was etherized. With the separable spatula the larynx was brought into view, and both Dr. Werfelman and I recognized to the proper a foreign body, bodying like prices of the proper by the bodying like prices of the prices mized at once a foreign body, looking like a piece of glass about an eighth of an inch long and shaped like the end of a wooden toothpick, lodged in or projecting from the surface of the swollen left arytenoid. There was no mistaking it, and its removal seemed simple, but on attempting to grasp it with the forceps it simply changed position, and notwithstanding several attempts at removal, it finally disappeared from sight, either being dislodged and swallowed or dislodged, entering the lower respiratory tract, or what seemed most probable, disappeared into the soft tissues and became buried. It seemed wisest to desist and await developments. The child was better for a few days, when the same symptoms recurred, and continue. Unfortunately, the parents have changed physicians, and will not allow another operation, hoping that with the advent of warm weather its so called asthma will clear up. I hope, how-

ever, to be able to make another attempt soon.

Case VIII.—This was the removal from a man, aged fifty, of a papilloma from the lower end of the pharynx, at the entrance to the œsophagus, using the separable specu-

lum, and a long Jarvis snare.

Use IX.—Direct laryngoscopy (cocame) for galvanocau tery of syphilitic stricture of the larynx in a woman, Showed impracticability of galvanocautery in this case.

This patient, a woman of fifty, who has been under my care for two years, requiring repeated intubations. I had hoped that I might be able to use the galvanocautery electrode in destroying what had appeared in the laryngeal mirror to be a thin cicatricial web, but, under direct laryngoscopy, what seemed a web was quite a thick, deep mass of cicatricial tissue, too thick to think of using the galvano-Case X.—Under bronchoscopy (ether) removal of a sharp duck bone from the second subdivision of the middle right bronchus. Operation successful.

Mrs. E., of Parish, N. Y., while eating duck at noon din-

ner on March 3d, on taking a deep inspiration while laughing, felt a piece of bone drawn into the throat, choking and greatly alarming her. Attempts at removal were unsuc-cessful, and the bone seemed every minute to be drawn more deeply into the windpipe, and on into the chest. The dyspnœa, which was great at first, gradually subsided. Her physician, Dr. Foote, was sent for, and on his arrival advised her going to Syracuse, and referred her to Dr. S. B. Craton, who saw her five hours later. He sent her to St. Joseph's Hospital, and asked me to take care of her. I saw her at 8 p. m. with Dr. Craton, seven hours after the accident. She was sitting up breathing quietly, no dyspnæa, voice clear, pain on coughing, and a sense of oppression over the middle of the right lung. Since the accident she had coughed up blood, first clear, later mixed with mucus.

On examination with the laryngeal mirror, a distinct scratch was seen on the posterior wall of the pharynx, one vocal cord was reddened and swollen and showed signs of an abrasion, blood in trachea. Auscultation and percussion She was sent to the operating room and etherized. The separable spatula was introduced, and through it the longest bronchoscope was passed between the vocal cords to the bifurcation of the trachea, and finding nothing, the right main bronchus was entered and explored, and nothing being discovered, the upper branch was entered and nothing found. The middle branch was then entered, and at the second subdivision of this branch a white, ivory like foreign body, seemingly the size of the head of a match, was seen. On touching it with the the head of a match, was seen. On touching it with bronchoscope or probe, cough became very severe. pledget of cotton saturated with a five per cent. cocaine solution was carried down, and the parts were soon agesthetized. On the third introduction of the tubular forceps the body was firmly grasped and bronchoscope, forceps, and foreign body were withdrawn together. It proved to be one of the small bones of a duck's leg, somewhat L shaped, not unlike a wish bone, six or eight times larger than it had appeared, because one of the prongs or processes had projected down into one bronchiole, while the other had entered another, and only a small part at the angle of the bone had been presented to the bronchoscope One of the bony processes was facetted and smooth, the

other as sharp as a needle, and this had evidently cut as it went down. A localized bronchitis developed, but cleared up, so that the patient returned home on the fifth day

The next day being Sunday, friends in great numbers visited her, and heard her repeated recitals of her experi-At supper she felt certain that a piece of cake was inhaled and drawn down into the same place in the lung Dr. Foote was called at midnight, and in the morning brought her back to my office. There was no evidence of anything beyond the fact that she was exceedingly nervous and almost hysterical. She was sent to the hospital, where she remained quietly, and with the aid of bromides soon regained her normal condition, and went home in a few days. There has been no further difficulty.

CASE XI.—Gastroscopy (under ether) for diagnosis in recurrent gastric ulcer after a gastrojejunostomy in a woman of fifty years. Marked stricture of the cardia with spasm and cyanosis. Second gastroscopy under ether three weeks later. Hamorrhage caused cessation of operation. Third gastroscopy (ether) two weeks later. Gray scar observed, argyrol applied to reddened inflamed area. Patient greatly

relieved of all symptoms.

Mrs. L., housewife, age fifty, patient of Dr. J. J. Buettner, had been an invalid and entirely incapacitated for work for more than two years. In 1905 she began to vomit blood, and had upwards of one hundred hæmorrhages from the stomach till her entrance to the Women's and Children's Hospital on April 16. 1907. Severe attacks of cyanosis and syncope, accompanied by great pain in the gastric region, were pronounced features of her clinical history. These attacks were so severe that death was frequently thought imminent. They occurred weekly, sometimes daily for months, and several years prior to her entering the hospital. Gastric ulcer was diagnosticated, and gastrojejunostomy performed by Dr. McLennan, in August, 1907. Patient left the hospital greatly improved five weeks Two months after the operation, bloody vomit and pain referred to the site of operation recurred, and she was gradually getting into her former condition when she reentered the hospital, January 27, 1908. Dr. Buettner was anxious to have me use the gastroscope. So bad was her general condition that I refused for several weeks, but finally, on February 27, 1908, she was etherized by Bucttner and the gastroscope passed. There was no difficulty until the cardia was reached and the tube entered the stomach. There was decided stricture or tightness encountered on going through the cardia. Breathing immediately ceased, but resumed as soon as the tube was withdrawn into the œsophagus. The gastroscope was passed into the stomach and soon withdrawn, say in fifteen to twenty seconds (because of breathing ceasing), eight or ten times. The folds and rugæ were seen; no ulcer discovered. She left the operating table in good condition. No vomiting or hæmorrhage followed, and she was so much relieved of all her symptoms that she begged me to again make an examination.

Second gastroscopy under ether on March 12, 1908. There was considerable hæmorrhage at this examination. The complete absence of cardia spasm and of stricture on entering the stomach was noteworthy. Her improvement continued, and again, at her own urgent request, I made a third gastroscopy under ether on April 14, 1908, again noting absence of cardia spasm and stricture. No hæmorrhage, and a splendid view of the stomach wall was obtained. gray scar was observed, and to a small reddened, inflamed area a fifty per cent. solution of argyrol was applied with a cotton carrier. The patient left the hospital three weeks ago (a few days after last operation), and during this time she has been visited but twice by Dr. Buettner, the longest period in three years without medical attendance. She has walked several blocks. There has been no cyanosis since the first gastroscopy. A slight hæmorrhage of blood

at menstrual period.

CASE XII.—Gastroscopy in a girl, of twenty-six years (under ether), with history of gastric ulcer, revealed a scar and an ulcer, and pyloric opening was seen. Argyrol ap-plied to the ulcer. Marked improvement followed.

Miss B., aged twenty-six, patient of Dr. Buettner, servant. In the spring of 1907 first symptoms referable to stomach. In June, 1907, she came under the care of Dr. Buettner, who diagnosticated ulcer of the stomach, and had treated her for it since that time. In October, 1907, she entered the Women's and Children's Hospital, remaining under treatment one anoath, when she left improved. In Lamary, 1008, she became much worse, and gave up work in February. Vomited blood, and blood in stools almost daily. On March 6, 1908, she entered the Women's and Children's Hospital for the purpose of having an experimental contents of the content and Children's Hospital for the purpose of having an examination of the stomach with the gastroscope. On March 7th, under deep ether anæsthesia, the gastroscope was introduced, and gradually passed down the œsophagus, which was pale in color, until the cardia was reached and entered. The stomach wall was thoroughly and systematically examined the present of the product of the pr plored, the rugæ folding and unfolding as the instrument passed over the wall, giving many and varied pictures. The pyloric opening was seen and the duodenum itself viewed for perhaps an inch in depth. A grayish patch, oblong and half an inch in length, was seen on the stomach wall. It was apparently a scar. A reddened and inflamed area of about the same size was localized and thought to be an ulcer. A fifty same size was nocalized and thought to be an unet. A may per cent. solution of argyrol was applied by means of a cotton carrier to this. She recovered from the ether with no unpleasant or untoward symptoms following, and left the hospital two days later. Since then, two months, there has been no return of symptoms, and she feels better than she has at any time during the past two years.

Case XIII.—Asphyxia in a new born infant, caused by pressure of cularged thyreoid and thymus glands. Direct laryngoscopy and passage of long cannula into the trachea and bronchus giving temporary relief and prolonging life sixteen hours. Intubation. Death. Autopsy.

On April 13, 1908, at 2 p. m., I was called by Dr. George B. Broad to St. Joseph's Hospital to do a tracheotomy on a child just delivered by him. When I reached the hospital the child was two hours old, almost asphyxiated, blue, and kept alive only as the father breathed deeply into the child's mouth. When he stopped the breathing ceased. The usual methods employed in resuscitating new born babies had been employed before I arrived.

Dr. Broad was about to do a tracheotomy as I entered the room. The child's pulse was scarcely perceptible. The heart was apparently normal. The child had never cried or taken a deep inspiration. On examination it was seen to be a large, plump baby, weighing about ten pounds, face and neck a deep blue, puffed and swollen, veins distended, and a large mass, apparently an enormously enlarged thyand a large mass, apparently an enormously enlarged truy-recoid gland covered by a large plexus of veins, was easily felt covering the anterior part of the neck, extending from the thyreoid cartilage to the sternum. The mass was long-est in the transverse diameter. A tracheotomy would ne-cessitate going through this mass and would surely be immediately fatal in the child's condition. On passing the finger into the mouth to palpate the entrance to the larynx, the sensation to the finger was that there was no orifice, suggesting a partial atresia of the larynx. The father kept the child alive by continuing to breathe into it while I prepared for a direct examination of the larynx. On introducing the spatula beyond the epiglottis and elevating it for ducing the spatula beyond the epiglottis and elevating it for inspection of the larynx, the child took its first unaided inspiration. The larynx was normal, the miniature vocal cords and chink of the glottis with trachea beyond showed up perfectly. I have never seen the interior of the larynx more clearly in adult or child. Respiration now became regular and the color began to improve. As soon as the spatula was removed asphysia returned. An attempt to introduce the smallest bronchoscope was made but failed, because it was too large. A one year O'Dwyer intubation tube was introduced through the speculum and gave such tube was introduced through the speculum and gave such relief for half an hour that the child's lips became red and it breathed regularly, but at the end of half an hour it suddenly became worse, and the tube was withdrawn, and the long straight suction cannula was passed into the trachea and bronchus, an enlarged thymus pressing on the trachea and bronchus being now suspected, in addition to the enlarged thyroid gland. This relieved the cyanosis for a time. The suction pump to withdraw any secretion in the tube was used, but without result. A soft rubber catheter was passed through the mouth into the trachea and gave some relief. At the end of four hours of this work the breathing was regular, though very superficial, and the child's lips and face were red and had entirely on the neck. We left the hospital at 7 o'clock, with instructions to keep the head extended. The child's condition of the light of the condition of the light of the light of the child's condition in the light of suddenly became worse, and the tube was withdrawn, and werting a tracheotomy, thymectomy, considering the large veins and glands that the transition of the transition med by the transition of the manner, when the

breathing improved, only to have another failure at 4 a. m.,

sixteen hours later, when it died.

Autopsy: Autopsy was made by Dr. Broad. The baby, a girl, was very well developed and nourished, weighing about ten pounds. A mass consisting of thyreoid tissue palpable in the middle of the neck and extending from the thyreoid cartilage to the uper border of the sternum. There thyreod cartilage to the uper border of the sternum. There were many large veins in and about the mass. The chest was then opened, and the relationship of the trachea to the surrounding structures observed. So far as could be determined there was no great pressure on the trachea or compression of it. The thymus gland covered the whole front of the trachea just below the upper border of the sternum and extending downward for about two inches. Fach loke was from two to two and a quarter inches long. Each lobe was from two to two and a quarter inches long, They were about one half inch in thickness at the upper part, much thinner below, apparently large but normal in contour. The trachea with the larynx was removed, but on abnormality or defect was observed in either structure. Both lungs contained air. The foramen ovale was open, otherwise the heart was normal. The structure of every organ with the exception of the thymus, both in the thorax and abdomen, seemed normal. The cranium was not opened.

CASE XIV.—Esophagoscopy and bronchoscopy in a woman, seventy years of age. Stricture of asophagus due to new growth. Pouch or dilatation, with well marked rugæ in the walls. Bougie passed through instrument and

on through the stricture.

Mrs. K., age seventy years, large woman, weighing 100 pounds, was seen by me in consultation with her physician, Dr. Dwinelle, in January, 1908. She had been unable to swallow and retain any solid food for two years, with a history of regurgitating food beginning sixteen years ago, and for two years combably sevents. and for two years constantly present and getting worse. Has wheezed after eating, more or less all of this time. No pain, no history of hæmorrhage. A diagnosis of stricture of the esophagus, with dilatation or pouch above it, was made, and a radiograph and œsophagoscopical examwas made, and a radiograph and esophagoscopical examination advised. A radiograph made by Dr. Coon showed distinctly a pouch of the esophagus. On May 1, 1908, at the Women's and Children's Hospital, I made an examination of the esophagus and bronchus. The large sized esophagoscope was passed down the gullet to a point nine inches from the teeth, when it entered a pouch or dilatation two inches in length, and containing some remnants of food which were removed with forces. The wall of this food, which were removed with forceps. The wall of this pouch was exactly like that of the stomach as seen in other cases, showing the same rugæ and folds, excepting that it was paler. At the bottom of the pouch the tube came up against the obstruction. This was caused by an infiltration against the obstruction. This was caused by an infiltration of the posterior and left lateral wall of the cesophagus, hard and firm to the probe; to the eye it seemed distinctly papillated. A number 12 hard rubber olive tipped bougie was, with difficulty, passed down through the stricture, which was exceedingly tight and narrow, and apparently two inches in length. Two small pieces of the wall were removed with forceps and reported by Dr. Steensland, the pathologist to be simply squarous enithelium. The obpathologist, to be simply squamous epithelium. The obstruction was evidently due to a tumor, probably carcinoma, in the mediastinum and involving the wall of the œsophagus. The trachea and bronchus were examined with the bronchoscope, but nothing adventitious discovered

Recapitulation. Eighteen operations or examinations were performed upon fourteen patients, fourteen times under general anæsthesia (ether in all but one), three under cocaine, and one without any anæsthetic. The age of the patients varied from a new born babe of two hours to an elderly woman of seventy years. In four cases the operations were for the removal of foreign bodies; a penny in the œsophagus of a five year old boy, a bone in the bronchus of a woman, a fish fin in the trachea of an eight months' infant, a spicula of glass in the larynx of an eight months' infant, all being removed but the

Of the remaining cases, operations and examinations were for papilloma of the larynx, stricture of larynx, papilloma of lower pharynx, stricture (spasmodic) and structure (organic) of the œsophagus, suspected foreign body in the œsophagus, three times on one patient for stricture and ulceration of the bronchus, once for relief of asphyxia in new born infant caused by pressure of enlarged thyreoid and thymus glands, and four times for examination of the stomach for gastric ulcer or other lesion.

Experimental work on the dog to determine the cause of the inhibition of respiration on the passage of the gastroscope from the œsophagus to the stomach, and of the introduction of the bronchoscope into the bronchus, was made in conjunction with Dr. Frank P. Knowlton, professor of physiology. This was suggested because of the marked effect on respiration observed in the passage of the gastroscope into the stomach, noted in Case XI, the same effect also being observed while working on a dog.

Professor Knowlton reports the result of the ex-

periment as follows:

| permitted to the control of the cont | | | | |
|--|--|---|--|--|
| Light anæsthesia. | Rate per minute of respirations, | Remarks. | | |
| Before introduction. | | | | |
| Gastroscope in stom | 43 | | | |
| ach | | Respiration insulated in phase of complete inspiration. Expiration inhibited. | | |
| LATER. | | | | |
| Normal | 84 | Longest inhibition of respirate news ten seconds. | | |
| Gastroscope in | | | | |
| œsophagus Gastroscope in stom | 45 | | | |
| Normal before intro | . Io | | | |
| Instrumen | 5.2 | | | |
| in trachea | 20 | Coughing expirations Inspira- | | |
| Vagi cut | 3.3 | | | |
| ac1: | 3 | | | |

"The inhibition of respiration," he adds, "is apparently due to reflex effect on the respiratory centre, arising from irritation of the gastric mucous membrane, the vagus nerves being afferent pathways. A similar effect has been noted in the rabbit, and further experiments are being carried out."

It would seem from this experiment that in passing the gastroscope through the cardia no danger need be feared from this reflex irritation, which could be overcome in any given case by the application of cocaine.

Conclusion.—Direct visual examination of the larynx, the trachea, and the bronchus, down almost to the last subdivision of the bronchiole, is a practical thing and of inestimable value, not alone for the removal of foreign bodies in the lower air passages, but for the diagnosis and local treatment, both by topical applications and surgical interference, of various lesions that affect the larynx. trachea, bronchus, and the lung, such as laryngeal tumors, tracheal and bronchial ulcers, tuberculous or other lesions, and lung abscesses, discovering the cause and location of pressure on the trachea and bronchus.

By means of œsophagoscopy the accurate diagnosis and treatment of many hitherto inaccessible diseases of the gullet becomes possible. The causes of painful and difficult deglutition, the ætiology and diagnosis and localization of œsophageal obstructions and stricture will depend not so much upon the findings of the bougie as upon the observations of the eye, aided by the probe.

Thanks to the brilliant work of Chevalier Jackson, the stomach has been added to the list of internal organs capable of being examined directly by the eye. Through the gastroscope he has demonstrated the possibility of making a systematic and complete examination of from two thirds to three fourths of the stomach wall; that in many cases the pylorus can be seen and probed; that gastric ulcers can be treated locally; that early diagnosis of carcinoma can be made; that sections of tumors can be removed for microscopical examination—in a word, that the stomach, like the larynx, is subject to direct and local examination and treatment.

831 UNIVERSITY BLOCK.

AN EXTENSION, WITHOUT USE OF WEIGHTS, FOR FRACTURES.

Illustrated in Fracture of the Neck et the Fewur - An Las: Method of Applying Dressings, Especially to the Lower Limb.

By Charles M. Paul, M. D., Cincinnati.

Plaster dressings upon the lower extremity are difficult of application without some means by which the need of lifting the part for the turns may be done away with. Herewith is shown an apparatus for easy application of plaster (or other) dressing to the hip, thigh, leg, pelvis, or spine (Fig. 1). It consists of an ordinary Bradford



Fig. 1 - Application of iron strip for extension,

frame, covered with a bag of strong, unbleached muslin. A third layer of outing flannel or lint is placed upon this, and fastened at the edge, with pins, to the muslin. Patient is now placed upon this, and the ends of the frame rested upon two chairs or tables. A sharp knife now cuts the muslin to form



Fig. .-Pia ter cast split and iming start.

a series of hammocks, as in Fig. I. This enables one to make circular turns without handling any part of patient. Any padding desired at any point may now be placed. Of course, parts of the muslin are included in any dressing, and so remain, therefore the use of the lint or outing flannel. Its use

is demonstrated in the further illustrations of an extension dressing, without weights, applied as for a fracture of neck of femur.

An adhesive stirrup extension is applied, gripping only as far as the knee. An outing flannel roller is now applied to cover the thigh and abdomen to rib edge (Fig. 2). This primary protective dressing holds in place a padding of *felt* placed over the groin so that the upper edge of the plaster applied may have no chance to infringe on the flesh at this point.

A weight may now be applied to the stirrup to keep up extension during the further application of the dressing or kept up by an assistant.

Plaster of Paris is now applied, following the extent of the protective dressing until about half the intended thickness of plaster is applied. An iron strip reaching from about lower end of upper third



Unc. 3 Completed dressing for fracture of hip or thigh,

of the thigh, inner and outer, and bent at bottom, as shown in Fig. 2, is now placed in position, before the plaster is dry. This strip extends about 6 inches below the bottom of the foot. Its size is one-half inch by one-eighth inch. This iron strip is now covered with plaster, repeating the turns made by the protective and porous plaster dressing until a strong cast is made. After this has been allowed to harden thoroughly, a few turns of soft rubber tubing are now made between the stirrup and the iron frame, a small piece of wood being used to keep the adhesive from pressing on the malleoli, as in Figs. 3 and 4. After completing the dressing to this point, an outing flannel bandage is now placed to include the leg, stirrup, iron rod, and foot, from below knee down. Over this is placed a light plaster of Preris dressing to from a splint for the leg and



 $P = \{ x \in \mathcal{F} \mid x \in \mathcal{F} \mid x \in \mathcal{F} \text{ to a } x \text{ tope and adhesive} \}$

to keep the foot in proper position. After this is allowed to harden, the patient is lifted into bed a full of the transact, and the muslim cut away at its function with dressings.

If the All somethic entring and lacing of the tart table place

The rubber extension finds its counterextension (through the iron rods) at the upper part of cast, at the groin. Experiment will show how many turns of elastic are required for a certain weight.



Fr s Brolford frame in use

Approximately, four to six turns of one-fourth inch soft rubber tubing, pulled up to good tension, will give about fifteen pounds extension. It will give slowly and should be changed occasionally. The advantage of the extension is evident when notice is called to the fact that any handling of the patient cannot interfere with its continued action. If patient is placed on a Bradford frame, covered with two bags, lacking about 4 inches of meeting at the middle, he can now be handled easily for purposes of cleanliness, nature's calls, to change bedding, etc., etc. He may be carried about on same. All of this without bothering about any weights. Its use for five years has proved very satisfactory.

19 WEST SEVENTH STREET.

SYPHILIS.*

Its Origin, Cause, and Treatment,

By Goerg Merzbach, M. D., Berlin, Germany.

In calling your attention to the origin, cause, and treatment of syphilis, my excuse is threefold: 1, Syphilis is one of the most common and dreaded of all diseases that afflict mankind; 2, knowledge of it is, just for this reason, of the utmost importance not only to the specialist, but also to the general practitioner; and, 3, that during recent years most important additions to our knowledge of the ætiology and the treatment of syphilis have been made.

While within the last quarter of a century, philosophy, political science, history, philology, literature, and art have all made great advances, the most numerous and pronounced discoveries have been in the realm of so called natural science. Further, of all the numerous branches of natural science, none outranks medicine in the advance which it has made, not only in its theoretical aspect, but especially in its knowledge of the ætiology, the pathology, and the treatment of disease. Marke'l advance has been made even within the few years since the midnight bells amounteed the advent of the twentieth cen-

"Read at the transfer the Arizh A could be I finderch Will belonded, Beetz, German v

tury. In the fundam ntal work of Virchow in pathological anatomy, as in the new teaching of Robert Koch and his disciples concerning bacteria, we saw a new life infusing itself into the old methods of medical science and the buds that formed then are now blossoming, and to-day we begin to see the fruit of the hard labor of the past, results and successes which were never even expected.

There is, however, one disease which, as if it were a stepchild, mother medicine seems to have somewhat ignored. This disease is syphilis, which the world has known for five hundred years. The neglect, however, has been that rather of intensity than of kind, for all through the centuries much experimentation has been done, but the ætiology of it has been so obscure, and, consequently, investigation so misdirected and fruitless that much of the work that otherwise might have yielded lasting results has been also without results on account of lack of enthusiasm in the researches.

From the opening years of the present decade, however, a promise of better things has come. Light has recently been shed upon the origin of this disease, while its exciting cause may be considered now established, and, what is of more importance, marked progress has been made in the treatment of syphilis. It is then to these three points that I would

ask your attention at this time.

First, then, in considering the origin of syphilis, we enter an interesting field of the history of medicine. The history of syphilis has occupied the minds of many medical historians, the results of whose researches are embodied in numerous volumes. Although the majority of these works are carefully compiled and exhibit much learning, the most satisfactory tracing of the geographical source of syphilis was left for Dr. Iwan Bloch, a Berlin physician, possessed of astonishing industry, profound sagacity, and sound judgment in the study of origins. These qualities, in conjunction with an extraordinarily broad and deep general knowledge, eminently fitted him for his task.

Bloch, then, whose previous researches into venereal diseases and into the history and social bearings of sexual relations have made his name well known, entered upon his study of the origin of syphilis, having fully digested the material collected by his predecessors, and with a mental tenacity and thoroughness exceptional for even a German. He accomplished his task. To him, then, as the successful pioneer in a region unsuccessfully explored by others, belongs the prize. In his work in two volumes, entitled On the Origin of Syphilis, conceived on a large scale, and filled full of valuable facts, we have at last, to the satisfaction of the medical world, reliable statements as to the source of this disease, truth indeed which even Rosenbaum, in his celebrated History of Syphilis, was not able to fathom.

I shall shortly review the train of thought and the power of research peculiar to this investigator. Voltaire's ironic witticism in the Candide, in which he questions the possibility of tracing the genealogy of syphilis, has lost to-day its meaning, and the famous question of Ricord, "Whence came syphilis and from whom had it origin?" at last has been answered.

Near the close of the fifteenth century syphilis fell upon sunny Italy like a flash of lightning out of a clear sky, striking terror into old and young, rich and poor. Like the plague and leprosy, with which two affections it was at first confounded, it gave ito opportunity of escape.

With the aid of the splendid historical pictures which the pens of Gregorovius, von Muetz, and Leopold von Rancke delineate, let us bring before our minds the political situation in Europe at the time when syphilis first made its appearance on that con-

tinent.

Charles VIII of France had inherited from his father, Louis XI, the rights of the Angevin princes to the principality of Naples. His father had been wise enough not to press the claim, but Charles, vielding to an ambition to be a second Alexander the Great or a Charlemagne, crossed the Alps and descended into Italy for conquest and the assertion of his rights. His army consisted of about 32,000 men of different nationalities, of which 6,000 were Swiss, 10,000 Northern Francs and Dutch, and 5,000 Gascons, also a large number of Spaniards. Furthermore, 800 women, of whom 500 were prostitutes, accompanied this army. With these forces Charles VIII crossed the Italian frontier on the 1st of September, 1494, and as early as the 8th of September a division under the command of the Duke of Orleans engaged a force of about 3,000 Neapolitans and Spaniards at Rapallo, about fourteen miles to the east of Genoa. Completely routing this Italian band, Charles continued his march unhindered to Rome and Naples, after he had made, on November 17th, an alliance with Florence. On the last day of 1494 the French army occupied the Eternal City, then under the rule of Alexander VI, of the famous House of Borgia. Charles and his army remained in Rome throughout January, 1495. During the march from the north the soldiers had indulged in the freest intercourse with not only prostitutes, but also the other women of Italy, and now at Rome gave themselves up to a life of licentiousness. At that time Rome had a large population of prostitutes, the Spanish wantons choosing it as especially favorable for their activities. Delicado a Spaniard, writing at this time, estimated the number of Spanish prostitutes then in Rome to be about 14,000.

The French King finally left Rome on January 28. 1495, and entered Naples through the Porta Capuana at four o'clock in the afternoon of February 22, 1495. A most enthusiastic reception, especially on the part of the female population, was accorded the soldiers, who, together with Charles, were astonished and elated at their easy triumphal march since they crossed the Alps. Charles was now on the territory he had sought, and with his coronation he had obtained the recognition he desired. But instead of setting his kingdom in order, he and his soldiers vielded to the mild southern climate and the wines of those classic hillsides, and if they had engaged in licentious practice before, now they became steeped in debauchery. The chronicles say that the very first day they were in Naples they excelled in drinking orgies and venereal excesses.

Had Charles given himself to setting his house in order instead of to pleasures only, the history of Italy might have been different. As it was, however, Ludovico Sforza, "The Moor" of Milan, who had invited Charles to his conquest in Italy and aided and abetted him, jealous and fearful of the successes of this French invader, induced the chief powers of Europe to unite with him in cutting off the King's return. Charles heard this too late, made a hasty retreat, and after defeating the assembled troops at a pass in the Apennines finally reached Lyons in safety, whence he had set out. He, however, had left one half of his army as a garrison at Naples. These forces were victorious in many skirmishes with the Neapolitans, but when a Spanish fleet with Ferdinand of Aragon on board appeared in the harbor, the people of Naples welcomed it, and themselves aided in cutting down the French garrison. Those who were not killed fled.

These events, narrated at some length, contain the story of how syphilis first began to spread throughout Europe. Contracted by the soldiers of the army of Charles VIII, they diffused it in all quarters as they dispersed. The pestilence came indeed like an explosion, so sudden and so violent

was the outbreak in all quarters.

The conditions and the indescribable effect which the first appearance of syphilis created in the old world have been plainly and authentically depicted by numerous contemporaries, all of whom speak of this beginning of the pestilence as occurring in the period between February and May, 1495, i. e., the time during which the hirelings of the army of Charles VIII sojourned in Naples. From all their references it is evident that the pestilence was new and unknown, and to them frightful because the rapidly progressing symptoms were decidedly destructive.

We will let a number of contemporary writers, who witnessed the oncoming of this terrible disease and who themselves suffered from its effects, bear

testimony.

The Genoese physician, Cataneus, says: "Morbus monstrosus, nullis ante saeculis visus totoque in orbe terrarum incognitus"; and Heusler, who tenaciously adhered to the belief of the antique origin of syphilis, says in his celebrated work, History of Syphilis: "Many a pestilence has been more devastating, more murderous to the human race, than the lust pestilence, which occurred towards the end of the fifteenth century: but never, without an exception, has a malignant disease or pestilence, a plague or a black death, created such a terrifying impres-

sion, or left such a dread to posterity.'

Franciscus Muraltus, the chronicler, also expresses himself: "As the disease was unknown and no description of it could be found in the old works, as neither Hippocrates, Avicenna, or Galen recommended remedies for it, nor mentioned this disease, it killed countless numbers. The physicians of our time employed remedies according to their own judgment, and popes, kings, princes, margraves, gererals, soldiers, nobles, merchants, and, in fact, all those indulging in sensuality, and others, even theologians of all kinds, were afflicted with this distinguished from the unchaste."

This march and progress of syphilis was horrible.

present day that when regions where syphilis has been unknown are attacked by this infection, the ensuing epidemic possesses a peculiar violence. Pollich cites thousands of convalescents as early as 1499, while Summaripa, an Italian physician, says that no words, no pen is capable of describing the sufferings to which those afflicted by the new discase were subjected; sad, indeed, is the fundamental tone which runs throughout the descriptions of Grunpeck, the first German writer on syphilis, as well as through the unceasing lamentations of Ulrich yon Hutten.

The question now naturally arises, a question which Bloch himself also asks. We have explained the sudden spread of syphilis throughout Europe when once the soldiers of Charles had become infected in central Italy, but in what way may we account for the somewhat sudden appearance of syphilis in the principality of Naples and other parts of the peninsula; in short, whence came syphilis to

Italy:

It may indeed seem surprising that a fact so palpable as the first appearance of syphilis and the place of its origin should be so lost in the course of centuries, particularly when it is remembered that its rise began, not in prehistoric times, but in the fifteenth century, when there was considerable literary and scientific activity. However, positive contemporary statements are wanting, and it remains for the medical historian to seek out and weigh what testimony remains.

Bloch gathers his proofs from three principal sources: First, the reports of Spanish authors, to which Montejo, the Spanish military surgeon, refers in his investigations; and second, the brilliant researches of the American Professor Seler; and third, various communications in the Italian chroni-

cles.

The Spanish author whose works are of especial value is Ruy de Diaz de Isla, who lived from 1462 to 1542, was a physician of repute and in his prime when syphilis first appeared in Europe, and was an eye witness of its beginnings on that continent.

This Diaz de Isla was a physician of Barcelona in 1493 and later a surgeon in Sevilla for ten years. He was also chief physician of All Saints' Hospital in Lisbon, where he gained very valuable experience also as regards syphilis, of which he gives an account in his work, dedicated to King Manuel of Portugal. In the first chapter of this book the origin and introduction of syphilis is plainly and positively proved, which reports are absolutely trustworthy, as Diaz depicts only personal experiences and such facts as were witnessed by himself.

These reports may be briefly mentioned here in addition to Bloch's assertions. They have been supplemented by information received from Oviedo and

substantiated by the works of Las Casas.

He shows that in Española syphilis had existed since primeval times. When Columbus discovered America the Indians already possessed a very complicated yet rationally developed mode of treatment for this disease, of which Diaz de Isla, through writings of the natives, became cognizant in the year 1504. The cure consisted in the use of guajac, and the pama, in confunction with hydrotherapeutic, dietetic, and climatic treatment. The

fact that syphilis existed on the Antilles prior to the advent of Columbus makes its coexistence on the mainland of Central America highly probable, which probability is substantiated by information which has been handed down from that highly cultivated and civilized race, the Aztecs. For the facts we are again indebted to the investigations of Montejo and Seler, and we must not overlook that the practice of medicine among the Aztecs had attained to an advanced state and was highly scientific, so that medicine in the new world may be considered as having reached the same standard as the medical practice of the Greeks in the old world.

The physicians of the Aztecs had adopted anæsthesia in surgery; they understood the suturing of They knew the influence of nourishment on the fœtus, and were fully versed in embryotomy, and, for the purpose of systematic researches, they had instituted collections on a large scale, like to our pathological museums and botanical gardens. We may, therefore, without question credit as true the reports of such experienced physicians as Hermandez and Benarides, who testify to the treatment of syphilis by the Aztecs in accord with their primitive science. They assert that the inhabitants were far better acquainted with the disease than they were. These important facts, together with many minor ones, prove that syphilis was very well known on the mainland of America at that time, and was subjected to expert treatment, considering the period. It is, therefore, easy to understand how syphilis was introduced into Europe, as Spain in Europe was the first country to receive syphilis as a gift, so to speak, from the new world. And in Spain, again, the cities Sevilla and Barcelona, where, after their return, the crew of Columbus sojourned for a time, became local centres of epidemics of syphilis. For these facts we have a witness in Sanarego, who speaks of syphilis raging in Spain as early as 1493. consequently two years before the campaign of Charles VIII, and that it had been imported from the West, i. e., America.

It must now be brought to mind that the popes had given both Naples and Sicily to Charles of Anjou. In 1282 Sicily revolted and was united to the Kingdom of Aragon, a Spanish power, to whom it belonged when Charles V of Spain came to the throne. When, in 1435, the older house of Anjou died out, the King of Aragon conquered Naples, and thus it, too, became a Spanish possession, and it was still in the possession of this Spanish King when Charles VIII of France set forth, and it was, as we said at the beginning of this narrative, in order to oust the King of Aragon and to assert the right of the Angevin princes to the principality of Naples, which right he had inherited from his father, that Charles VIII had entered Italy. see, then, how, when in 1492 and 1493 syphilis was brought to Spain from what is now America, it was carried by the Spanish to their possessions in Italy, in 1493 and 1494, and was communicated by the Neapolitans and other Italians to the soldiers of Charles VIII, in 1494 and 1495, to be by them disseminated over Europe as fast as these scattering forces could carry it.

Finally, in addition to these historical proofs the peculiarly typical appearance of syphilis was sufficient evidence that the disease was new, attacking, as it did, in violent epidemics those countries where it had been unknown, namely, Spain and Italy. In the year 1500 and as early as the beginning of the sixteenth century it appeared in the Far East, in China and Japan, while its entrance even into Africa can be authenticated. Everywhere in the Old World the pestilence found virgin soil; wherever it once started it developed and spread with particular virulence, causing universal consternation and fright. This is evident also from the various names originally given to the pestilence that is, consideration being had only of the places from which it came, as West Indian, Haytian, Japanese or French disease, morbus gallicus, morbus burdigalensis, Franch pox, or el mal de Castilla. At last, in the year 1520, the Italian physician, Hieronimo Fracastoro, wrote a poem on the subject, entitled, "Syphilus, sive morbi gallici libri tres," and thus decided the question of name. Syphilus, a character in the poem, is the name of a shepherd, and Sauvages took this name and introduced the word syphilis into technical use, a term which has been used ever since.

And now let me remind you of a pun made by Krafft-Ebing at the International Congress of Medicine in Moscow, when he referred to the intimate union of all civilization by syphilization. It is all too true that every nation under heaven is now interested in the ætiology and treatment of this disease, and are thus seeking incessantly for means to ameliorate "the bitterness with which," according to Master Ekkehard, "all sexual relationship is mingled." Whether or not we have approached closely the desired goal through investigations into the parasitic nature of the disease remains to be seen from the facts to which, in the second place, I would call your attention.

When, on the 3d of March, 1905. Schaudinn's keenness, after joint investigations with Hoffmann, discovered the Spirocheta pallida in a fresh preparation from a recent syphilitic lesion, an opportunity was offered for the discussion of this subject, such as cannot be compared to anything else in the history of medicine. And, strange as it may seem, scarcely any person of note has offered opposition to the theory that the Spirocheta pallida is the exciting cause of syphilis; whereas, on the other hand, this answer to this most important ætiological question has had numerous supporters in the persons of the best authorities of bacteriology and pathology in all parts of the world.

Unfortunately, Fritz Schaudinn's keenness of perception can no longer aid us; but before his premature death he had the satisfaction of knowing that he had left a discovery to the world and humanity which would remain to his name and that of Hoffmann, in the words of Horace, "monumentum aere perennius."

The problem of the cause of syphilis may now be considered as solved, although a final link in the chain of investigations is necessary to render, according to the demands of modern science, the proof indisputable.

It certainly is a singular coincidence that as early as 1837, H. Donne, the discoverer of the *Trichomonas vaginalis*, alleged that the *Spirochata pallida*,

more exactly the vibrio lineola, was the exciting cause of syphilis. After the investigations of Rille and Hoffmann, though, this spirochæta proved to be the Spirochæta refrigerens, parasite of the surface. This microorganism does not enter into consideration in comparison with the real Spirochæta ballida, any more than the Cytorrhyctes luis of Siegel or Bordet, described in 1903, which, notwithstanding the testimony of Metchnikopf, differ from the real Spirochata pallida in the order of the convolutions. The fortunate solving of this long disputed question is due to the cooperation of the zoologist with the syphilologist, who, under the supervision of Lesser, investigated this experimental chain conjointly, and soon attained a wonderful success. The first publications by Schaudinn and Hoffmann, in May, 1905, were quickly followed by the confirmatory statements of Paaschen, Puschke, Fischer, Metchnikopf, and Roux, to whom Schaudinn had sent preparations taken by himself from unbroken papules of the skin. Later Salmon's discoveries of spirochætæ in the papules of pemphigus, and those of Levaditi in the lungs, liver, and spleen of bicongenital syphilis, were published. In the blood taken from the tip of the finger, Raubitschek detected the existence of the Spirochæta pallida and also in the venous blood, as did also Wolters, later, who was followed by Nöggerath and Stächelin. Ehrmann and Lippschütz found it in acquired syphilis; Roscher in a papule of the toe; Rille and Vackerodt in efflorescences of psoriasis palmaris; Levaditi, Petresco, Siebert, Lewandowski, Hirschberg. Dreyer, and Toepel in congenital lues, as also in tabes. This list of investigators could be lengthened greatly, but at present it is sufficient for us to have called attention to the fact that the Spirocheta pallida is found in all the lesions, recent and of long standing, of acquired as well as of congenital syphilis. And it also is of an importance not to be underestimated that we are able to discover the spirochætæ at a comparatively early stage of a suspicious pimple, and thus are enabled to make an early diagnosis of syphilis, just as it is possible for us in the case of old gummata and in other late manifestations of the disease to determine their spe-

The staining process of Schaudinn after Giemsa in the preparation of slides has proved valuable, and has been enlarged upon by Herxheimer, von Bertarelli, and especially by Levaditi, especially in the modification of the Ramon y Cajal process, which, as the best adapted for the purpose, undoubtedly will retain its precedence among the different methods. By means of these methods, which, naturally, notwithstanding their comparative simplicity, result in many failures for the beginner, all the different organs, syphilitic children and feetuses, placenta and undiral cord, as well as all the products of the numerous kinds of syphilis, have been investigated, so that Hoffmann has the privilege to describe the sum total of the results of modern research in his look which has been lately edited.

It is not not intention to enter upon the various methods of searching for spirochætæ, the examination of fresh slide preparations, or upon the occurrence of this exciting cause of the disease in the man applitus pando to all shall personer the

proof of their existence in the tissues of the body, their occurrence in acquired and congenital syphilis and in experimental syphilis.

The third publication of Schaudinn and Hoffmann, in May, 1905, established the indisputable fact that the *Spirochæta pallida* was the exciting cause of syphilis, which had been sought for so long, a fact especially emphasized by its constant appearance, not only in open syphilitic disease centers, but also by its occurrence in the depth of entirely intact syphilides, as primary affections and papules, in the diseased lymph glands, and in the Although, as Hoffmann sadly resplenic blood. marks, the realization of the final postulate—i. e., the cultivation of the organism and the transmission of the disease by means of this pure culture to another susceptible animal, is still outstanding, we are undoubtedly fully justified, on the strength of the attained results, in acknowledging the spirochæta as the exciting cause of syphilis. That is the second eventful discovery in the realm of syphilis investiga-Since the Spirochæta pallida has been distinguished morphologically from other rather similar spirochætæ, Hoffmann has made the proposal to separate the Spirochæta pallida also in name from the other spirochætæ by calling it triponema, or Spirochæta luis, or syphilis spirochæta, which proposition is likely to be accepted.

The practical significance of this bacteriological discovery is, for the present, the possibility of making an early microscopical diagnosis, and consequently the opportunity of beginning an early therapy, or of clearing up an otherwise uncertain diagnosis, or of making manifest a latent infection.

The significance which the syphilis spirochæta has for the pathologist is illustrated by the fact that my friend Benda has demonstrated its existence in diseases of bloodvessels of syphilitics, as also Buschke-Fischer, Levaditi, and Simmonds, in congenital lues, in macerated fœtuses, placenta, and umbilical cords of fœtuses of syphilitic patients. The teachings of Thalman concerning endotoxines, the poisons of the human body, receive in treponema a substantial support. We have, furthermore, learned from the biology of treponema that syphilis spirochætæ, adhering to the circumference of the diseased centre, begin to grow again and travel to the periphery, which accounts for relapsing roseoles and annular syphilides. Yes, we have now even the proofs that later fully virulent parasites circulate in the blood, and, according to Hoffmann, the supposition is justifiable that months after the first general invasion of the body by these germs new metastatic centres can form in the skin and internal organs.

Hoffmann's attempts to inoculate monkeys with syphilitic blood, to do which I had also tried, together with Lasser and Query, and in which Hoffmann only seems to have been successful in one case with stagnant blood, led him to believe that the syphilis spirochætæ are anaerobic microorganisms, a supposition which later investigations have verified. The Spirochæto huis is able without oxygen not only to retain its vitality, but to remain in a condition to reproduce itself. The question as to whether the syphilisspirochæta is a facultative or an obligatory anærobic parasite must remain undecided for the present. This does not compromise the fact that

great light has been shed on the question of syphilis and made the prognosis of any given case better than it ever was before. For centuries all attempted investigations of syphilis made little or no progress, but now suddenly, as though awakening from magic sleep, research has begun to make rapid strides, and is passing by means of the painstaking work of a few fortunate investigators to the pinnacles of knowledge, along that sure path which Schaudinn and Hoffmann paved by their thorough work.

Such is the degree of progress made up to the present day by syphilology. Naturally it opens up a long perspective for the diagnosis, for the therapy, and for the prophylaxis of the disease. But there are probably many sceptics who will say that the course of this discovery will be the same as that of many others in bacteriology that have preceded it, like the investigations concerning the plague and the tubercle bacillus. They will say the discovery of the Spirochata pallida and its relation to syphilis is made, but there is no result following, nothing practical to grasp, nothing consoling for the general public, for whom we scientists are primarily obliged to labor and whose criticism we must accept.

We hope we may say that the end is not yet and expect that here also the fruits will be richly gathered, but for the present we must content ourselves with the therapeutic progress that has been made independently of the knowldge of the spirochæta and which in its line is destined to attain unusual significance. While in general the treatment of syphilis has followed the same methods it has emploved for years, has gone along the old road, almost the same that it traveled in the time of good Ulrich von Hutten, old methods have been modified and better wavs have been discovered. While antimercurialists still dispute with mercurialists, the latter seem to have the majority on their side. These men, however, who favor the use of mercury have not agreed as to the best method of administering their remedy, some favoring the administration by mouth, some that by inunction, and others the hypodermatic method. Of all these methods until recently none could lay claim to undoubted superiority, but recent experimentation has shed new light on the previous difficulties. As I have called your attention to the advances made in the history of syphilis among mankind, and as I have spoken of the progress in the ætiology of the disease as evinced by the discovery of the Spirochæta pallida in all syphilitic lesions and tissues, so now, in the third place, I would bring to your remembrance the great advance that has been made in the treatment of this disease by means of mercurials.

I need not remind you of how unsuited to private practice is mercurialization by means of inunction with mercurial ointment. While in hospitals like those of Vienna and other parts of Europe it may be a cheap and quick form of treatment, its rendering the body greasy, its soiling the underclothing and the bed linen, the impossibility of concealing its use, all with the consequent disturbance of mode of life and vocation, not to mention possible physical disturbance, as local inflammation of the skin and mucous membrane, not only render persistent treatment difficult, but also frequently preclude any satisfactory treatment at all.

When we attempt to speak of the hypodermic injection of mercurials, not much more can be said in its favor. Whether we use calomel, gray oil, the salicylate or the thymolate of mercury, the procedure is very painful, generally infiltration of the tissues causes the patient pain in whatever position he may be, and destruction of tissue with abscess formation often seriously complicates matters, while the persuading of the patient to continue the treatment under any circumstances is frequently impossible. Of course, we must not forget in the use of these insoluble salts of mercury the danger of a sudden and unexpected distressing or even fatal mercurialization, due to the rapid absorption of mercury that has been stored up somewhere in the body from these salts.

If we consider the use of the bichloride, the imidosuccinate, the formamidate, or the peptonate of mercury, blood serum mercury, sozoiodole mercury, or mercuric arsenate, we must further remember that safe hypodermic doses of these are far too mild to be of certain service. Experience has proved that by the use of even the largest possible doses of these salts, in more than half the number of cases, even when the injections have been continued from five to six weeks, a relapse generally occurs within two months from the cessation of the injections, while during the first two years such relapses are of constant occurrence. I have not mentioned treatment by administering mercury by the mouth because the method and its advantages. and disadvantages are well known.

There is then a considerable unanimity of opinion as to the positive value of mercurials in syphilis, and I may add an absolute unanimity of opinion as to the administration by the mouth being the simplest, most convenient, and otherwise the best mode of exhibition if a form of mercury suitable to such form of administration is obtainable. If we are to obtain the desired end in the treatment of syphilisas far as our knowledge goes to-day, there are certain requirements absolutely essential. From a positive standpoint, large quantities of mercury must be administered, and also we must be able to keep the treatment completely under control. To accomplish this latter end the medicament must be capable of exact dosage and its absorption by the system must be sure and uniform.

From a negative standpoint, the medicament must not be difficult to administer and must be noncorrosive so as not to produce local lesions or colic or diarrhœa. I am glad to say that medical science has made progress in this direction. Overbeck and Gorup-Besanez had proved that of all the organs of the body the liver was the one that retained mercury in any amount the longest as well as in the largest quantities for any given time. They showed that mercury, after it had been once absorbed, penetrated all organs and tissues of the body, but that the liver was particularly what might be called the reservoir for mercury. It was further shown that while mercury is eliminated by the fæces, urine, perspiration, and saliva, the quantity eliminated and the rapidity of elimination are in proportion to the quantity absorbed and the rapidity of absorption, and that the absorbed mercury had the greatest affinity for the liver.

When Mulder, Rose, and Voit had made it highly probable that with the present form and modes of medication mercuric albuminate was the final modification of mercury in the system, and that as such it circulated in the organism, the question naturally arose whether or not these scientific facts could not be made of some worth in advancing the therapy of syphilis. Directing our attention to the liver, then, and considering the bile, its characteristic secretion, we know that the principal constituents of this bile are glycocholic acid and taurocholic acid. By treating these acids in a suitable way the former may be split up into cholic acid and glycocol, while the latter may be decomposed into cholic acid and taurin. We see then that cholic acid is common to both these constituents. It is a white, crystalline mass which may be recrystallized from solution in alcohol or in glacial acetic acid. This cholic acid is capable of forming with the positive elements, metallic salts, and cholates of the heavy metals may be obtained by reaction with the cholates of the alkali metals. In this manner mercuric cholate may be produced. This salt, which has the formula Hg(C24H30O5)2, is a yellowish white powder, not very heavy, insoluble in pure water but soluble in alkaline fluids and especially so in a solution of common salt. I believe that I am right in saying also that mercuric cholate is the salt of mercury most closely related to mercury albuminate. These two facts that it is a preparation, in which the molecule of mercury is not united with a heterogeneous acid, but to one normally present in the body and especially in that organ for which mercury has an especial affinity, together with the fact that it is so closely allied to the final form of mercury in the human economy, suggest two possibilities, namely:

First: Such a compound ought theoretically to be easily soluble in the digestive tract, readily absorbed, and possess qualities that would aid storage in the liver, normal distribution throughout the human system, and rapid and complete elimination.

Secondly: Mercuric cholate ought to be of espe-

cial value in the treatment of syphilis.

These ideas, suggested on theoretical grounds, are found by laboratory experimentation and clin-

ical experience to be facts.

Further, although Husemann classifies mercuric cholate as a mild corrosive, its action in the digestive tract, so far as observation has been made, would not warrant any emphasis being laid on this point. The intensity of the corrosive action of any salt depends upon the corrosive nature of the acid in combination. The characteristics of cholic acid would require us to lay stress on the word "mild" if we use the expression as I have just done, "mild cor-However, as all corrosive action can be completely done away with by the presence of some astringent, for medicinal use mercuric cholate is combined with tannic albuminate in the proportion of two parts tannin albuminate to one part of mercury cholate, and for short, the profession knows this combination as mercury albuminocholotannate.

It remains, then, for me, in closing briefly, to sum up the advance medical science has made in syphilitic medication as evidenced in mercury albuminocholotamate.

First and foremost, mercury albuminocholotannate permits a simple, easy, yet effective medication by the mouth alone. The internal treatment of syphilis, although it has not been very popular in Germany, has attained in France and England a certain monopoly of syphilitic medication.

Rollet says: "The internal application of mercury and its preparations is to-day the most popular

method of the therapy of syphilis."

Renaud, in a meeting of the Société de therapeutique, in Paris, declared: "On the strength of an experience of twenty years I own that I am compelled to uphold Fournier's opinion that the subcutaneous method of the mercurial treatment of syphilis cannot be adopted in general practice." It can only be recommended in a case with an intolerant stomach for internal applications, and even then the advantages are not very pronounced. The reason why the internal therapy of syphilis has not been universally favored so far was the lack of a nonobjectionable but energetically acting preparation. The following objections have been offered against the internal treatment:

It is not reliable, as thereby large quantities of mercury cannot be introduced into the body. The salts of mercury, which alone have been available, when taken internally produce local irritation of the alimentary tract, and the assimilation of the mercury

is irregular.

In America, internal medication for a long time has been practised, and is admitted to be the ideal method if we possessed, as I said early in this paper, a preparation of mercury that could be thus administered and at the same time be effective and easily controlled when once in the system. Mercury albuminocholotannate was at first put up in capsules, and in this form was used in Germany for a long time; now, however, the elaborate and accurate machinery of the manufacturing pharmacist has produced tablets that are stable, and it seems almost fabulous that the syphilitic now can carry his medication, more efficient than ever before, in a small vial in his pocket, and take his dose as if he were eating candy or a throat lozenge. Such, however, is the fact, as my cases which I will mention shortly will show.

Again, mercury albuminocholotannate permits the administration of mercury in maximum doses, re peated practically indefinitely, without harm or even discomfort to the patient. For instance, we know that mercuric bichloride contains 73.8 per cent. of mercury; mercuric cholate contains 23.3 per cent. of mercury, therefore the average dose of corrosive sublimate, or 1/6 grain three times a day, is equivalent to 11/20 grains of mercuric cholate, or a total daily dose of 1/2 grain of corrosive sublimate equals 1 13/20 grains of mercuric cholate. Now, mercuric cholate may be administered to the amount of 71/2 grains daily, or an equivalent of 21/4 grains of corrosive sublimate, nearly five times the maximum daily dose of that substance. When we think what severe intestinal lesions would be produced by a dosage which anywhere approached this, and then think that its equivalent in mercuric cholate may be administered ordinarily without any untoward symptoms, we realize that an ideal syphilitic medication has been approached, if not actually attained. It should be noted, however, that daily doses of 21/4 grains or 41/2 grains are usually sufficient to meet the requirements of successful medication. These

doses, clinical experience has shown, may be repeated practically indefinitely without causing any intestinal disturbance—neither pain, colic, or diar-

Another and third important point which I would notice is that the absorption and elimination is regular and rapid. I have not time to go into tedious detail, but these characteristics both experiments in the laboratory upon the lower animals and clinical experience in the case of human beings have proved to be facts. In all cases in which chemical examinations have been made, and they are many, the amount of mercury albuminocholotannate eliminated by the urine has always been in strict proportion to the amount administered by the mouth, and rises and falls in this eliminaiton always follow closely upon corresponding increases or diminutions in doses.

As a rule, I begin with a dose of 3/4 grain three times a day, and continue this amount for four or five days. On the sixth day I change to a 2½ grain tablet twice daily, making a maximum daily dose of 4½ grains. I continue this amount for some days, and then, according to the case, I give smaller tablets more frequently until I reach a maximum dose of 7½ grains daily. These tablets I administer invariably immediately after meals, as thereby I obtain the best effects.

I shall pass over the symptoms and progress of the disease, and simply mention that local symptoms were treated in the usual manner, while mercury albuminocholotannate capsules or tablets were given as specific treatment. Close observation shows that the action of this substance on the syphilitic process consists in an abatement of the symptoms, such as syphilides of the skin, plaques in the mouth, condylomata of the genitals, etc., fully as well if not better than is the case by an inunction treatment or injection cure with soluble salts. The skin and mucous syphilides disappeared on an average in from twenty to thirty days. Seventy per cent., that is, twenty of my cases, were primary infections, of which seventy-five per cent. treated with this preparation showed a prompt and quick diminution of symptoms. The results were supremely satisfactory. In twenty-five per cent. of the cases the action was slower, from one to two months. The remaining thirty per cent, of my cases, all of which were old infections, some of which had had a number of so called "cures," and were now suffering from relapses, all responded to the action of mercury albuminocholotannate, some promptly and satisfactorily, some less promptly, while in two cases, that is, seven per cent. of the total number of cases, the effect was only slight. These cases were patients who had received rather radical and rapid treatment, but notwithstanding suffered with obstinate plaques, psoriasis of the hands, etc. I believe that Professor Boss is right in his opinion that the too rapid repetition of the cures and the consequent saturation of the body with mercury is a reason for the apparently weak effect of mercury albuminocholotannate in cases like

Regarding secondary effects produced by mercury albuminocholotannate, about ten per cent, of the cases acquired a slight stomatitis consisting of redness and swelling of the gums. Treatment was suspended for only three or four days, after which time

it was renewed and continued with satisfactory results. With Wolff I consider that an appearance of a slight stomatitis is the best sign of an effective mercurialization. For it seems reasonable to suppose that the antisyphiltic effect of a mercurial preparation must correspond with the mercurial effect; if the latter is lacking, the former will not be evident; in other words, a preparation that is not capable of producing a mercurial effect will not be of great influence on the syphilitic process. As regards the effect of mercury albuminocholotannate on the digestive tract, I can say that it produced in most cases no disturbance at all and in none any disturbance which necessitated an interruption of the cure. This I consider to be a highly satisfactory state of affairs.

As the first cure is of great importance for the future course of syphilis, it is necessary to treat the patient with mercury albuminocholotannate for at least from ten to twelve weeks. The average quantity for a patient will be from five drachms to one ounce (20 to 30 grammes). If this prescription be adhered to it will be seen that relapses after such a treatment are not more frequent than after an inunction or injection cure. Besides the cure does not interfere with daily life and is not weakening or dangerous to the patient; on the contrary, with its use the general health of the patient never gets run down. Great importance should, of course, be attached to general hygiene, i. e., a quiet, regular mode of life on the part of the patient, with sufficient sleep and adherence to a special diet. Nourishment should be plentiful and wholesome, but unirritating to the intestines. Consequently, fresh fruit, acids, salads, highly seasoned food, and fats should be prohibited. Of alcohol only a little claret should be permitted for dinner and supper. Care of the teeth and mouth is of the utmost importance so that stomatitis may be avoided. The skin should be treated with warm baths. The urine should be under continual examination before, during, and after the cure. The general treatment, of course, should be assisted by local treatment with the customary ointments, powders, etc., as may be necessary.

35 CHAUSSEUSTRASSI.

PRELIMINARY REPORT ON THE VACCINE TREATMENT OF ATROPHIC RHINITIS (OZ ENA).

By Ross Hall Skillern, M. D., and F. Burvull-Holmes, M. D., Philadelphia.

(Ross Hail Skillern, M. D.)

CASE I.—Shortly after reopening my office in the fall of 1007 a little patient was referred to me suffering with atrophic rhinitis. Almost as soon as he had entered my door the diagnosis was made possible on account of the peculiar feetor of this disease which was disseminated through the air. As the patient was a handsome boy of eight years and the parents people of some position, my feelings were certainly not elated when I recalled the numerous observers and scientists, particularly in Germany, who had devoted the best years of their lives investigating this disease with the most disappointing results as far as a curative treatment was concerned. Certain individual cases had been reported cured by new methods, but these methods appear only to have been successful in the hands of their authors.

To return to the patient, examination revealed a severe case of rhinitis atrophicans with all its attending symptoms (crusts, pus, foctor, etc.) and apparently in the height of its course. I frankly reviewed the status præsens of the attitude of the profession toward the disease to the parents, impressing upon them the importance of carrying out home treatment faithfully, for without this it would be uscless to institute and continue treatment at the office. I also stated that under appropriate continued office and home treatment the child would apparently improve, but should for any reason the treatment be suspended a rapid return to the old condition would surely occur and must be expected. As the child had never before been examined, the mother was exceedingly depressed, not having suspected the seriousness of the disease; however, she readily accepted the inevitable and placed the boy under treatment. The patient now presented himself thrice weekly for treatment, during which time thorough examinations were made for any sinus involvement, but without The patient did improve as far as the crusts and fector were concerned, but it subsequently developed that this improvement was only apparent. The treatment, which consisted of thorough cleansing with hydrogen peroxide, followed by warm normal salt solution until no trace of crusts or pus could be observed, and the entire nasal mucosa painted with a solution of actione and chloretone in liquid petrolatum, was continued for nine weeks, when it was interrupted by some slight illness of the patient which necessitated his confinement to the house for about ten days. As the home treatment was also discontinued at this time, the condition of the patient at the end of the attack was precisely the same as when first brought for examination. Under these circumstances it was selfevident that the local treatments were of temporary benefit only and might have been continued indefinitely with no real permanent curative value.

Recognizing the utter futility of bringing about a cure from a local point of treatment, I turned to the bacteriological standpoint of the disease, which although having been thoroughly investigated by our German colleagues with little or no success (therapeutically speaking), nevertheless offered the only hope in this particular case. The opsonic index theory was explained to the parents, with its possibilities, and their sanction obtained to try it with their boy. billities, and their sanction obtained to try it with their boy. I collected and reread the investigations of E. Fränkel (1), Löwenberg (2), Klamann (3), Thost (4), Hajek (5), Abel (6, 8), Paulsen (7), Fricke (9), Stein (10), Klemperer and Scheier (11), Strübing (12), etc., and found that the results of these observers were practically identical. A bacillus similar to the pneumonococcus of Friedländer was always present in large quantities together with an encapsulated bacillus first described by Abel (6). The habitat of the latter appeared to be in the membrane which formed between the crusts and the mucous membrane. Abel seems to have been successful in separating these bacilli and cultivating the latter in pure culture, and stated it to be the real cause of the disease, not so much from the direct action of the bacillus on the tissue as through the toxine

which it eliminated.

Acting on the theory of Abel, I consulted with my friend Dr. E. Burvill-Holmes regarding the advisability of trying the vaccine treatment with this case. It was decided that it might be feasible and certainly could do no harm, and he consented to take up the work from the bacteriological standpoint. On the next visit of the patient I washed the nose out with a normal salt solution, removed, under all possible antiseptic precautions, a large crust from the surface of the inferior turbinate, and made a smear culture on agar with a piece of the false membrane obtained from beneath the crust. Dr. Holmes took the tube in charge, and in a few days reported that the culture had grown well. The predominating organism was a coccus similar to the pneumonococcus of Friedländer; the bacillus of Abel was also present, though in smaller quantities. After numerous cultures a comparatively pure culture of the latter bacillus was obtained. It was decided to plate these organisms and procure absolutely pure cultures, thereby making it possible to obtain the opsonic index of the patient for both varieties. This was attempted with ordinary and later with special media, failure being the result in every case. There was no difficulty in obtaining pure cultures of the coccus, our point of view, for we had accepted it as the true cause of the disease, resisted every attempt at culture. It appeared to thrive badly on all sorts of media, being finally

choked by the overgrowth of other organisms. Under these circumstances Dr. Holmes suggested making a vac-cine from the combined culture of a serum from a pure culture of the bacillus of Abel, which seemed, at least for the present, impossible. The serum vaccine was made in the strengths mentioned by Dr. Holmes. I discontinued local treatment with the patient at once in order to overcome any possible doubt that might arise as to the therapeutic value of the vaccine. Injections were given in the arm at first twice weekly, no inflammatory reaction occurring. The patient's appetite increased at once, and the features assumed a much better color. After two weeks there was marked diminution in the size of the crusts and the nasal secretions appeared to be much thinner and more miscible with water. (The nose being washed out at each visit with a warm normal salt solution.) About this time a gradual diminution of the fœtor occurred, which was not only substantiated by the parents but by their friends as well. At this interesting stage the little patient contracted a disease resembling scarlet fever (such a diagnosis was made by the family physician), which brought the treatment to a sudden close. About two months after the onset of the fever I received a communication from the mother stating that the boy was now convalescent and the nasal condition had retrograded to such an extent that it was as bad as ever. She further stated that it gradually became worse, and did not reach the old stage for several weeks after the treatments were suspended, and expressed the desire to resume treatment at the earliest possible moment.

The promising results in the previous case prompted me to test this method in a case which had proven absolutely hopeless to other forms of treatment. The history briefly is as follows:

Case II.—Miss J. L., thirty years, atrophic rhinitis since childhood, all symptoms relative to the disease present, i. e., crusts, fœtor, purulent discharge, gradual deafness, severe tinnitus, etc., had been under treatment with various physicians for twenty-five years. Condition steadily grew worse.

Examination: Inferior and middle turbinates on both sides greatly atrophied, nearly all of the anterior wall of the sphenoid being visible. Crusts were present in the choanæ and middle nasal fossa, purulent discharge from the right side. Entire Schneiderian membrane appeared glazed and covered with the usual secretion. Needle puncture brought a large quantity of foetid pus from the right antrum, while

left antrum was negative.

The patient had been under my care for over a year with temporary amelioration of the symptoms. I had already advised a radical operation on the maxillary antrum some months before commencing the vaccine treatment. A portion of the membrane was taken from the nose and a smear culture on blood serum made, which Dr. Holmes smear culture on blood serum made, which it is thook in charge, isolating the Bacillus mucosus as before, but was again unable to grow them in pure culture. However, a serum was made of the mixed culture to the strength mentioned by him. These injections were given twice weekly, all local treatment, with the exception of cleansing with normal salt solution, being dispensed with. After five injections improvement was noted, the crusts being much smaller and allowing themselves to be more readily removed. The collection of inspissated mucus which formed in the choanæ and was so annoying to the patient became less and less. There was undoubted diminution of the fector, and the general health improved. This treat-ment was continued until she had taken fourteen injections, when a sudden change for the worse set in. The disease gradually began to assume its old condition, crusts became larger, and the fector reappeared. The patient complained of constant nausea and said she "felt as though she had swallowed a quantity of secretion from her nose." The treatments were discontinued and the patient lost sight of. About three months after this time she again appeared, requesting treatment, saying that she had never felt so well as when under the vaccine treatment and would rather endure the nausea than be tormented with the nasal condition.

At the present time she is again under treatment and has been benefited even past the stage of her first improvement. The injections are now being given in doses fifty per cent. less than formerly, and once every seven or ten

days according to symptoms

I am perfectly aware that the report of these cases in themselves contains little of value from a scientific

point of view on account of the inability to show definite results. However, it seems to me to bring out several points hitherto unpublished. In Case I the improvement was so marked that I felt assured a complete cure would result, when the treatments were suddenly discontinued through the patient's acquiring scarlet fever. Personally I do not believe this was scarlet fever, but a condition due to the vaccine being used either in too large doses, or too frequently, or both. While the attending physician suspected this condition he nevertheless appeared to be quite reticent about the case, and further details were unobtainable; however, the child recovered in two or three weeks. The mother consulted me some weeks later concerning the case, and stated that the old condition had returned, but not with the same severity, the child having kept quite well through the attack of fever.

Case II did not present the same possibilities for therapeutic success as Case I, owing to the length of time the disease had been present (over twenty-five years). The injections, however, brought about a favorable reaction in a surprisingly short length of time, the greatest relief being in the diminution in the amount of tenacious mucus which formed in the choanæ. The appetite and general condition also improved; the aural symptoms, however, remained unchanged. I am perfectly certain that the injections were either too frequently given or the dose too large in this case. As neither of us could determine the proper amount to administer except by experiment, the matter remained naturally one of guesswork.

It is, of course, impossible to draw reliable conclusions from two cases, although from the behavior of these under vaccine treatment I think it only fair to hope that this method offers possibilities which heretofore have not presented themselves in the treatment of this affection. If pure cultures of the Bacillus mucosus capsulatus could be obtained (I feel assured this will be accomplished in the near future) I believe the successful treatment of rhinitis atrophicus fætidans would, indeed, be a thing of reality.

(E. Burvill-Holmes, M. D.)

Whether or no any microorganism is the specific ætiological factor in rhinitis atropica is still a debated question. The weight of opinion, however, is probably to the effect that bacteria only play a secondary rôle and are of no pathological significance. Indeed, E. Frankel (1), who first discovered the Bacillus ozana-the organism considered by most of those who hold to the microbic origin of the disease to be the causative factor—denied the organism the power of inducing the true atrophic process, but the fœtor solely. However, three years later Löwenberg (2), to the contrary, asserted, although he could not prove his assertions, being unable to isolate and grow the organism in pure culture, that the entire process, fœtor included, was due to this mi-Thost (4) was of the same opinion as Frankel, while Abel (6 and 8), who in 1893 and 1895 investigated the subject extensively, satisfied himself at least that the Bacillus mucosus. as he called it, was the specific cause of ozænæ. Paulsen (7), a contemporary of Abel, was equally positive

on this point, basing his argument and belief on the constant presence of this organism in the diseased areas. In all of the fifty cases which he studied, he was able to demonstrate it. Strübing (12) became a proselyte to Abel's views also, and not merely because of the presence of the organism in his cases, but because he alleges to have actually reproduced a typical case of the disease, by inoculation, in a man dying of consumption. Dreyfus and Klemper (13) attempted to corroborate Strübing's result, but they were less fortunate. They inoculated two cases, neither of which was successful.

But it is not only to the Bacillus ozana-an organism considered by many bacteriologists as identical with many others that have been described. prominent among them the Bacillus Friedländerthat the disease under discussion has been attributed. Thus Symes, quoted by Flatov (14), regards the affection as a chronic form of nasal diphtheria, since in thirty-four per cent. of his cases he found a bacillus which morphologically and culturally corresponded to the Klebs-Loeffler bacillus. Moreover, he justifies himself as to the correctness of his view by affirming that the horrible affliction will sometimes yield to treatment by diphtheria antitoxine, when all

other means have proved futile.

In the treatment of our two cases, the writers assumed for experimental purposes solely that an organism was the causative factor, and since vaccine therapy had proved of indubitable value in the treatment of certain infections heretofore rebellious or incurable, the thought suggested itself it might be efficacious in this disease, which to the present time has baffled the most skilled and experienced rhinologists. At the outset it was proposed to isolate, if possible, the several organisms reputed to be the infective agent, and with the respective vaccines made from them, to inoculate the patients, controlling the injections by opsonic readings. A definite time was to be accorded to the treatment by each vaccine, a different one to be used in the event of failure to obtain results from a prior one.

Smears from portions of the thick, tenacious pus. washed in several changes of sterile normal salt solution, were first of all stained and microscopically examined. Both cases singularly revealed for the most part similar organisms. Predominant was a large bacillus showing a capsule and in hanging drop nonmotile, perhaps and probably the Bacillus ozænæ. Another that was quite numerous was one that morphologically resembled the Klebs-Læffler bacillus. Streptococci were also demonstrable, in addition to other unidentified bacteria. From the same portion of this exudate culture tubes of agar agar, blood agar, blood serum, nutrient bouillon, and litmus milk were inoculated. Examined at the end of twentyfour and forty-eight hours, the blood agar, bouillon. and milk tubes showed the growth of all the above specified organisms, the large bacillus being apparently absent from the agar agar and blood serum media. An attempt was now made to isolate the bacillus assumed to be the bacillus of Frankel and Abel. Several plates of blood agar, glycerin agar. and agar agar, were made and incubated at 37° C... but despite many trials the bacillus eluded capture, The patients who had been informed of and who had signified their willingness to submit themselves to the method of treatment were becoming impatient

at what they construed inexcusable delay, so that further attempts had to be abandoned. In lieu, then. of inoculating them with a single organism, we decided—unscientific as it probably was—to administer a "miscellaneous" vaccine, or, in other words, a vaccine composed of all the bacteria. To this end one out of several nutrient bouillon cultures, one in which the bacillus appeared to be in excess, was selected, and from this the vaccine was prepared, the death of the organism being brought about by their subjection to a temperature of 57° C. for one hour. No attempt was made, for obvious reasons, to compute the number of bacteria per c.c., so that the unit of dose utilized was the milligramme, or more properly, the microlitre. The guide to increase or decrease of dosage was controlled by clinical symptoms alone.

The initial dose was for the vounger patient 0.5 microlitre, for the older I microlitre, diluted with normal salt. This dose was administered biweekly and increased bimonthly providing no contraindications arose, each increase being 0.5 and I microlitre, respectively, for the two individuals.

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2030 CHI S. M. C. STRELL.

Though all are familiar with this most common malady, yet the simple fact of its being possibly the most common of all diseased conditions met with, its careful study and investigation is too often overlooked. Again, it is one of those ailments we have always with us and we are too prone to accept it as a necessary evil. Though I will endeavor to treat this subject fairly from all sides, yet, as the public have learned that most persistent headaches are due to eyestrain, it is to the oculist a large proportion ily physician has been first consulted; the patients cured by him we do not see, while it is those not responding to general treatment that he refers to the specialist. Therefore, it is natural for the specialist to look at these troubles through his own glasses, however broad he may wish to be.

In every case of persistent headache, the most complete history, family and personal, should first be elicited with the most searching examination for all signs tending to connect the symptoms with any disease. Headache is one of the earliest and most frequent symptoms of several of the most serious pathological conditions. Mayer says: "In taking the history of a patient, many important factors may be elicited; a previous infectious disease that might have left an inflammation of one of the cranial sinuses, a trauma that might have evoked a chronic meningitis or an abscess or cyst, or an hereditary history that would make one think of migraine or latent or psychic epilepsy. The occupation might reveal the source of a toxic headache, the habits an alcoholic, nicotine, or sexual origin for it; or, again, we may find the environment of the patient is at fault, too many business worries, living in too close quarters, sitting constantly near a light, having constant worries or anxieties in the family circle, living irregularly, working late at night or eating improperly." Find the nature of the pain, its location, its duration, the time of occurrence, nature of work done preceding it, what aggravates and what relieves it, its connection with any other symptoms of any other organs, age, etc.

In this paper I shall use much material from a symposium by Dr. S. D. Risley, Dr. E. E. Mayer, Dr. J. C. Wilson, and Dr. B. A. Randall, of Philadelphia, each of whom treats it from its own special standpoint, thus including every side of the question. (Pennsylvania Medical Journal, December, 1907.)

Headaches may be classed:

I. Those due to diseases of nervous system: Pressure headaches, hydrocephalus, tumors, abscesses, cysts; inflammatory headaches, meningitis, purulent tuberculosis, pachymeningitis, epicranial myositis; circulatory headaches, anæmia and hyperæmia, arteriosclerosis, vasomotor: traumatic headaches; reflex headaches; psychic headaches, hypochondria, neurasthenia (exophthalmic goitre), hysteria, epilepsy; and habitual headaches.

2. Special senses: Eyestrain, nasal or ear dis-

3. Gastrointestinal: Deranged liver, constipation,

4. Kidney diseases.

- 5. Constitutional diseases: Anæmia, chlorosis, diabetes, leuchæmia, syphilis, rheumatism, malaria.
- 6. Toxics: Drugs, lead, nitrites, alcohol, etc.
- 7. Infections which include some of the above

8. Rheumatism of the scalp.

Under the first group, the organic headaches are those due to intercranial disease, usually more constant in their symptoms. Brain tumor has a deep boring pain. The pains of tumors or abscesses are usually more localized, while that of meningitis is more diffused and excruciating. The eye conditions, especially those seen with the ophthalmoscope, help in arriving at a conclusion. In epilepsy, usually the other symptoms accompany it. Those due to cerebral concussion or from injuries to the head may be localized or diffuse, usually severe and protracted. There is often tenderness on percussion, mental symptoms, lack of concentration, memory affected at times, vertigo, tinnitus, etc., also eve symptoms. In meningitis there will be vomiting without nausea, hyperæsthesia, delirium, vertigo, intolerance to light, etc. Rigidity of neck muscles with these symptoms indicates cerebrospinal meningitis. Tuberculous meningitis is often first indicated by intense paroxysmal headache, vomiting without nausea, constipation, and mental irritability.

The sensory nerve supply of the dura in the anterior three fourths of its extent, that of the falx and probably that of the tentorium are derived from the trigeminus, while the dura mater of the posterior fossa is supplied with sensory fibres from the vagus. The trigeminus is the nerve of sensation to the scalp as far back as the vertex, while the posterior branches of the upper four cervical nerves supply the muscles and the skin of the back of the neck and the occiput. Headaches are due to some changes affecting these nerves, either disease, pressure, or

circulatory changes.

The circulatory headaches are diagnosticated from the condition of the vessels, the anæmic being relieved by a recumbent position; the congestive have the throbbing full sensation. These are characterity, resulting from powder smoke. There is usually a congestion of the skin vessels, a flushed face, etc

The neurasthenic headache is very frequent in the morning, and can be arrived at only by exclusion. Unfortunately, we are prone to put too many in this class, or in Butte we find the altitude a convenient and inexhaustible refuge for those cases in which we fail to find the true cause. Hysteria has the circumscribed boring pain (clavus).

The habitual headaches will probably in time be classified otherwise, but at present, with most painstaking examination, some few headaches still re-

Of those due to the special sense, in fact, of all causes, eyestrain is the most frequent and constant of all persistent headaches. Dr. Risley has so well stated several definite conclusions, that I will use his words:

- 1. That ocular disease or anomalies of the ocular apparatus are in a large group of patients the sole and suf-
- 2. That abnormal visual conditions may be the unsuspected cause; therefore, that the absence of symptoms obviously referrable to the eyes does not exclude them as an ætiological factor in headache
- That, notwithstanding the congenital origin of many ocular anomalies, the sudden onset of headache coming on during or after middle life, or after attacks of acute dis-case, or during the ravages of some general dyscrasia, does not exclude the eye as an ætiological factor
- of headache and a considerable group of associated symptoms can be positively excluded only in the proved absence of ocular disease, or after the most painstaking correction of any existing error of refraction or abnormality of binocular balance.
 - 5. That, in many cases, prolonged eyestrain sets up

pathological states in the fundus oculi which require, like the cause; therefore, immediate relief of symptoms is not always to be expected.

That the existence of some general affection, e. g., as the immediate cause of an associated headache since the accompanying ocular disease, e.g., iritis, choroiditis, glaucoma, etc., may be the direct cause of the pain in the head, to relieve which local treatment also will be required.

7. That the existence of congenital ocular defects is especially prone to be the occasion of headache and other reflex neuroses in individuals with impaired vitality, whether inherited or acquired by faulty living or by daily told in a had hyging; environment.

Now, if all patients with eyestrain had head-aches, and all showed localized symptoms as dee. g., the myope, who is known to every one as near sighted, and most people who have red eyes, inflamed lids, very high degrees of hyperopia, or astigmatism may go on without ever, or at most only an which has never been even suspected, often produces ances. Thus, in this city at least, it is to be noted that the majority of the former class first buy glasses in the shops, while the great majority of the oculist's

Many people living out of doors or doing rough work, with good light, fresh air, abundant exercise, experience no trouble; change their vocation to that of constant close work indoors, often facing a light, all conditions changed, and a few minutes' work brings on headache. It is often difficult to convince these people that abnormal eyes, with which they have probably been born, are now the

cause of all this trouble.

The location of pain is usually in the forehead. back of the head, back of eyeballs, or in the temples. There is pain in the occiput, especially if the extrinsic muscles are involved. The pain back of the eyeball or optic nerve. This pain often shoots back to the neck and even to the shoulders. These headaches may subside or gradually increase, accompanied by nausea, intolerance to light and noise. Incapable of work, the person takes to bed with so called bilious, sick, or nervous headache; here, a few days' rest in the dark, and the patient is restored for a new start. I recall a female typesetter, treated for years for indigestion till the physician referred her to an oculist. She began with these symptoms, growing gradually worse till about Saturday, when she would begin vomiting, went to bed in a dark room, was sick over Sunday, and ready to start work on Monday.

These headaches usually come on after reading, sewing, or near work, or are aggravated by it. They are also common after shopping, riding on the car or train, or after the opera; usually worse in the afternoon or evening and gone in the morning. Again, they may so disarrange the mental condition that sleep is disturbed, and patient wakes in the morning with tired feeling and diffuse headache. These symptoms may be first noticed after some

disease which has lowered the vitality. Again, they are very frequent in business men about the age of forty-five, who attribute the symptoms to business worry and fail to assign their troubles to the true cause—loss of accommodation.

In children, chorea, nervousness, cross eyes, etc., often first direct the attention to the eyes.

Dr. Gould has so admirably demonstrated by the lives of so many eminent men, Huxley, Darwin, etc., what the world has lost by the failure to recognize the cause of their depressing headaches.

That glasses are being worn by patients is unfortunately no positive evidence the eyes are not the cause. In these cases, besides the general nervous condition of the patient, the ciliary muscle is always in a condition of tonic spasm and without the perfect relaxation of this spasm, which is often very difficult, glasses cannot be properly fitted. any muscle that has been in a fixed position more or less for years, suddenly relax it, and what is the resulting sensation? Try carrying a pail of water or bandage your arm in a fixed position for only a short time and experience the pain when it is re-laxed. Thus with the eye, after the most thorough and perfect examination, on this account the patient will usually refuse to wear the glasses, without considerable argument; in fact, some cannot. Then they must be changed from time to time to suit the case. Again, there are the complications, say hyperopia with astigmatism. Without the most exacting work in detail, with cross checking your own work, you may over correct one and under correct the other, and vice versa. All the spasm may not be relaxed or it may have been irregularly relaxed; the eye muscles may be at fault (heterophoria), or the eyeball may be rotated on its own axis (cyclophoria). Again, suppose all the correction is perfect, glasses perfectly fitted; the eye is only one of the most complicated organs and part of a most complicated body comprising a physical and psychical whole, thus proper prescribing of glasses becomes one of the most difficult of all surgical procedures. Yet, when it has been accomplished, there are but few headaches under this class that will not be immediately and permanently cured.

Headaches due to the nose are but beginning to receive attention. There is generally a pain over the root of the nose or brow, may be back of an eye or frequently diffuse. These are always worse if the patient gets an acute cold in the head, and careful questioning may elicit a history of a severe attack lasting for days being suddenly and completely relieved following an acute discharge of fluid from the nose or throat. These pains are more or less persistent with acute exacerbations, recurring often daily at the same hour. They are due to an irritated condition of the mucous membrane, pressure of middle turbinate against the sæptum, or to some irritation in some one or more of the sinuses, all of which are lined with an extremely sensitive mucous dental origin, so in all cases the teeth should be investigated. Spraying the nose with some sedative and vasomotor constricting drugs will temporarily relieve the congestion, thus the pressure, and afford drainage and relief for a short time. If acute, this

may cure it, otherwise the obstruction must be removed and free drainage given to the diseased sinuses. Polypus is the overlooked cause of some prolonged depressing headaches; these are frequently accompanied by asthma, which should always direct attention to the nose. Adenoids should be looked for in children as the primary cause of secondary diseases producing headaches.

Headaches from ear disease are usually localized, and may give rise to cerebral symptoms, this being the most frequent cause of epidural abscess.

Headaches due to abnormal pelvic conditions are most frequent in the top of the head and have associated history.

Those due to conditions of stomach, liver, and bowels are usually frontal with somnolence and vertigo; may be temporary blind spells; this class might also include some of intoxication.

Those of kidney diseases will not be overlooked if examination has been complete. These are intense, often continuous with exacerbations. They occur in uraemia and diabetes.

Syphilitic headaches are often worse at night up to a late hour, then subside, but this is not necessarily so. Tumor symptoms may be present.

Rheumatism is more likely to be in the scalp muscles and tender on pressure. Chlorosis, anemia, leuchæmia, malaria, smallpox, febrile diseases are all accompanied by severe headaches at times.

The toxic and infectious headaches are to be diagnosticated after a careful history as to occupation, habits, etc. Do not forget wood alcohol in varnishes; arsenic may be excessive in wall paper; lead in paints and printing; opium, chloral, or an excess of the coal tar preparations taken to relieve headaches result in aggravation. Coffee, tea, alcohol, etc., are also in this class.

As to the cure, first, if the cause is ascertained, the method is clear in the majority of cases. Social and business conditions must be considered; mode of living, diet, habits are of first importance. If due to eyestrain and eye fatigue, rest the eyes. As no one will do this, then relieve the excessive accommodation by correcting lenses. Often where no error exists, a convex lens for near work, takes off much of the excessive burden. A prominent attorney, in this State, who had to abandon his work after many fruitless attempts to get glasses, owes his present success to this over correction, so to speak.

Sending patients away changes their mode of living, and the treatment at the springs aids in elimination, while the mental and business relations are changed; thus habitual headaches are removed, but first all local diseases must be eliminated.

For the immediate relief coal tar products should be given with discretion; opiates very seldom if ever, better almost never. Sodium bromide, Indian cannabis, hyoscyamus, and gelsemium relieve many neurotic and congestive headaches. Atropine relieves engorged mucous membrane. Electricity in its various forms has its use in neurological cases. Tonics and laxatives relieve as a rule. In short, to repeat, if the proper diagnosis can be made, in every case, which is beyond the ability of any one man, there will remain few if any that will not be cured.

PNEUMONIA: ONE METHOD OF TREATMENT.*

By E. P. Tompkins, M. D., Roanoke, Va.

One raw, damp December day, with half thawed snow covering the ground, I encountered a young man, L. R., out funning. I noticed that he wore thin shoes and that they were thoroughly soaked with water. This was about I o'clock. At a quarter to 9 I was hastily summoned to his bedside. At 9 o'clock I reached him. I was told that he came in at nightfall, having spent the afternoon tramping the fields and loafing at a country store. He ate a light supper and went to bed at 8 o'clock feeling as well as usual. Before he could get to sleep he had a chill, followed in a little while by a severe pain below the left nipple. Fearful of pneumonia, he had promptly summoned me. His diagnosis, as far as one may judge from physical signs and symptoms, was correct.

He was a fine specimen of manhood physically, hale, hearty, robust, of good habits (not an alcoholic), about twenty years of age, and had never been sick before. His temperature when I reached him was nearly 103° F., and he was semi-delirious, which condition rapidly advanced to active delirium. Pulse full and bounding, face flushed; slight, hacking, suppressed cough, with frothy expectoration, which in another hour was gelatinous, and decidedly streaked or rather mixed with blood. Physical examination showed only slight dulness over the seat of pain.

Under my direction half a dozen bricks were at once procured, and placed on the fire; at the same time a kettle of water was put on to heat. When the water was boiling, water was put on to heat. When the water was boiling, and the bricks about red hot, they were placed in the water and allowed to remain until ebullition ceased, each one then wrapped in a cloth, and placed in the bed alongside the patient's body, and over him a number of blankets. Over the region of pain was put a flannel cloth saturated with oil of turpentine, over this a folded newspaper. Internally was administered a tablet of calomel and sodium hydroxide. half a grain each, one every two hours till four doses. Alternating with this, hour by hour, a tablet containing aconite, two minims; tartar emetic, one fortieth grain; ipecac, one eighth grain, morphine sulphate, one twentieth grain, to be given till further notice. In ten minutes the patient was trying to throw the covers off, and it took the combined efforts of four men, by main force, to hold this able bodied, delirious fellow in bed. He succeeded in yanking off the turpentine cloth, and threw it across the room, but as the area was well reddened, it was not replaced. I stayed with him until 2 a. m., at which time the bricks were removed, and the patient, with clothes sat-urated with steam and perspiration, left unchanged till

Returning next day, I found him resting quietly, free from pain, temperature reduced to ror F., pulse slower, the purgative had acted, and general condition satisfactory. In a well heated room his clothing was changed, the bed also, and he ate a little milk toast and soft cooked egg. Twenty-four hours later, his pulse showing decided softening and lessened size, the aconite and tartar emetic tablet was discontinued, and one of digitalis, nitroglycerin, and strychnine substituted. In seventy-two hours from the time he was taken sick his pulse and temperature were normal, his appetite good, his sleep natural, and he proceeded to uninterrupted recovery. He was advised to remain indoors a few days longer, and in a week he was back at work.

The most noteworthy point in the case was the tremendous rapidity with which the most severe symptoms developed from a condition of perfect health. emphasizing the fact, more forcibly than any other coming under my observation, that treatment if effectual in cutting short an attack—and I am convinced that in the great majority of cases pneumonia can be aborted—must begin early. In this case not only hours, but one might almost say minutes were valuable.

I know that some high authorities, Dr. Osler for instance, maintain that "pneumonia is a self limited disease, which can neither be aborted nor cut short by any known means at our command," but the

*Read before the Roanoke Verdeny of Medicine, April 20, 1938

proof of the pudding is in the eating, and in a series of cases numbering more than a dozen treated by this method, with one hundred per cent. of recoveries, cases ranging in age from six to seventy-two years (the last mentioned an old man treated thus in two attacks, with a two year interval), it would be asking too much to believe that the prompt recovery in every instance was a mere coincidence.

Now as to the rationale of the treatment. In the first place it is only of value in the stage of engorgement. In the histology of the lung we remember that the ultimate ramifications of the bronchi terminate in the infundibula, from which open the minute cæcal pouches, the air cells. A branch of the pulmonary artery accompanies each bronchus and bronchiole, without anastomosis until it reaches the walls of the air cell or alveolus, where it ends in a rich capillary network upon, or rather within, the walls of the air cell. In the beginning of the stage of engorgement these capillary vessels are greatly distended, the alveolar epithelium swollen, the air cells themselves containing serum and some blood corpuscles. Now, the rational thing to do is to endeavor to decongest these over filled bloodvessels. Formerly, and to some extent even at the present time, bleeding was advocated. But it is safer and easier to bleed the patient into his own veins; and none of the veins of the body lend themselves to this purpose more readily than those in the skin. We are told by physiologists that the skin is capable of containing in its bloodvessels at one time, one fourth of the entire volume of blood. This is Nature's provision for cooling the body, namely, dilating these bloodyessels, whence the heat is radiated to the surrounding air. If this is not enough she bathes the body in perspiration, and the rapid evaporation still further cools. So in thismethod, the patient is surrounded by heat—dry heat might do, but moist heat is better-which dilates the cutaneous vessels just as certainly, and as quickly, perhaps even more quickly and safely than drugs will do. At the same time the moist heat, by inducing greater amount of perspiration, promotes elimination of toxines through the skin.

To avoid a too sudden reaction, it is probably best to keep up the effect by mild medication. The combination which I mentioned meets the various indications as well as any-possibly beter than any other I know of. Aconite has many advocates. Bartholow says, "it gives good results"; Da Costa advises, "reduce the circulation by aconite"; Austin Flint remarks it "is an effectual sedative remedy"; Phillips writes, "it is valuable in the first stage"; Ringer asserts, "it has marked effect," etc., etc. Tartar emetic at one time had a great vogue, but is not now often employed. However, Bartholow admits "small doses may be useful, given with care"; Wilcox observes, "it increases the sweat, and produces a marked reduction of temperature"; Flint advises, "if the skin is hot and the pulse frequent, tartar emetic may be given as a sedative, but the dose should not be carried to the extent of producing marked nausea"; Potter advocates its use as "a very efficient agent, if used in small doses (one sixtieth to one fortieth grain) in acute inflammatory affections, especially pneumonia. As to ipecac. it is recommended by Wilcox as an agent which "decreases pulmonary congestion, and promotes diaphoresis"; Potter says, "it has been efficiently employed as an antihæmorrhagic," and "is considered very useful in coughs and acute catarrh." In regard to morphine, it allays the pain, increases the sweat. and gives the patient power to breathe, also it tranquillizes the circulation, controls the cough, and permits the patient to sleep. Dr. Osler advocates at the onset a quarter grain hypodermatically. Dr. Flint says, "opium may be given with propriety and advantage in the first stage in doses sufficient to relieve the pain and tranquillize the system." Personally I have never used a blister, and never felt the need to use one. I do use oil of turpentine, however, as a counterirritant almost to the point of blistering, and believe it a valuable item in the treat-

I have no quarrel with the open air treatment, but have never used it in pneumonia, though I advocate it in other affections of the respiratory organs, my patients have been treated often in very open cabins

Such in brief is the method I have adopted in the management of this disease which is slaying its thousands, and while my experience has not been extensive, and though Hippocrates says, "experience is fallacious," I offer it for what it is worth, and until a better method is shown I shall continue to use it, for I believe in its efficacy. I am partly indebted to an article by Dr. C. M. Miller for the suggestion in the beginning.

1026 HENRY STREET.

Correspondence.

LETTER FROM LONDON.

Las Cas ad de Lecture a Tuberculous Injection . Tuberculous Disease in Ireland .- The Water Supply .- Medi-Medical Teaching .- The Death of Sir John Banks.

The Cavendish Lecture was delivered this year by Sir William Whitla before the West London Medicochirurgical Society, and dealt with the very important problem of the mode of infection in tuberculosis. Sir William Whitla is senior physician to the Royal Victoria Hospital, and professor of materia medica in Queen's College, Belfast, where he has carried out a long series of experiments with Professor Symmers with the object of finding out the most likely channel of infection in pulmonary and other forms of tuberculosis. As a result of these experiments he reaches the conclusion that the intestinal route plays a far more important rôle in the production of human pulmonary tuberculosis than has been hitherto recognized. This teaching is, of course, strongly opposed to that of Professor Koch, who has always held that the lungs may be looked upon as the usual primary seat of tuberculous infection, and that in the majority of cases the bacilli find their way into the lungs with the inspired air. The comparative rarity of primary intestinal tuberculosis was one of the points adduced by Koch against the intestinal origin of pulmonary tuberculosis, and this fact has long served to divert attention from this question, but in the light of Sir William Whitla's experiments it is difficult to resist the conclusion that the alimentary canal plays a very important part in the production of pul-monary tuberculosis. The lecturer also discussed the question of the identity of human and bovine tuberculosis, and here again he differs with Koch in his conclusion that human and bovine tuberculosis are practically identical, that the tuberculosis of bovines is transmissible to man, and vice versa. Sir William emphasizes the importance of recognizing that the milk of tuberculous cows is a common source of tuberculosis in children through the channel of the alimentary canal, and in confirmation of this points to the fact that the bovine type of bacillus has been detected in a considerable percentage of cases of human tuberculosis. Sir William makes out a very good case for the intestinal origin of tuberculosis, one which should lead to

further investigation of this problem.

The question of tuberculosis in Ireland has also been occupying the attention of the present government. This disease is very common in Ireland. In England the death rate from this cause is 1.6 per 1,000; in Ireland it is 2.7, and a bill has been introduced into Parliament which aims at controlling its spread. The Tuberculosis Prevention (Ireland) Bill, 1908, was introduced by Mr. Birrell, the Irish Secretary, and has now passed the second reading and will shortly be dealt with by a committee of the House of Commons. Among the principal provisions are the compulsory notification of the disease in all stages, the inspection of milch cows by government officials, and the slaughtering of any cows found suffering from tuberculous disease of the udder. The bill also makes provision for the nursing of persons with tuberculosis in their own homes by trained nurses, and enables the local authorities to increase their hospital and sanatorium accommodation for tuberculous patients. The bill is certainly a step in the right direction, and its effects will be closely watched by every one concerned with the administrative control of tuberculosis.

A report issued by Dr. Houston, the director of water examinations, to the Metropolitan Water Board, emphasizes a most important advance that has been made in our knowledge of the best methods for purifying our water supply. It appears that organisms lose their vitality and very soon die in water that has been simply stored, so that by making use of storage tanks in which every drop of water could be stored for a certain time (somewhere about two months) before its distribution to the public it would be possible to reduce the likelihood of typhoid infection from this source to a minimum. Not only does simple storage kill the typhoid bacillus, but it also destroys the Bacillus coli. In times of extensive flood the water supplied to the public is not stored so long as during time of drought, and it has been found that the number of microbes present in samples of water during flood time is very much greater than at other seasons, a fact which strongly supports the observations of Dr. Houston. Further, the tables show that the incidence of typhoid fever in London is always greatest after exceptionally heavy floods, and in a table published some years ago by Sir Shirley

Murphy, medical officer of health to the County of London, the "curve of typhoid incidence" reached its highest point just after the Thames floods had attained their maximum. These observations, taken together, lead to conclusions of the greatest im-

portance to the public welfare.

A party of about eighty French medical men, representing the association known as the Voyages d'études médicales, has paid a visit to London, and during the course of a week visited all the great general hospitals as well as the French Hospital and the museum of the Royal College of Surgeons. At Guy's Hospital they were received by Dr. Newton Pitt and Mr. Arbuthnot Lane, and were much interested in a group of patients collected for their inspection upon whom Mr. Lane had performed total extirpation of the large intestine for constipation and toxæmia. The healthy appearance of these patients greatly impressed the visitors. At St. Bartholomew's Hospital they were received by Dr. Norman Moore, the senior physician, in the great hall. This hospital is famous in France for its nursing system, and is regarded as a model to be followed in the reform of nursing now going on in France. The party visited a medical and a surgical ward, and in each ward the duties of the nurses were carefully demonstrated. The orthopædic department was also visited, and a demonstration of the Swedish exercises was given.

A dinner was given in their honor at the Hotel Cecil, and a party of about 170 ladies and gentlemen assembled under the chairmanship of Dr. George Ogilvie. A feature of the after dinner speeches was that they were all in French. A capital musical entertainment brought the proceedings to a

close.

Some of the professors in the medical schools in making use of the cinematograph in lectures to students. This fact has been seized upon by the newspapers as sufficient for sensational reports relating to the cinematographing of patients during operations. Undoubtedly the cinematograph is a valuable improvement on mere pictures or photographs of diseased states, and it ought to be of special value in many nervous diseases. It is difficult to see any objection to its use for this purpose. The cinematograph picture of an operation would not be of any use as a means of teaching students when they had the opportunity of actually seeing or assisting at operations. The only surgeon who has had his operations cinematographed appears to be Dr. Doyen, of Paris, but his example has not been followed in England.

The death has occurred of Sir John Banks, physician in ordinary to the King in Ireland, at the age of ninety-five. He was born in London, and was educated in Trinity College, Dublin, where he obtained the degree of M. D. in 1843. He became president of the Royal College of Physicians of Ireland in 1869. He was for a time regius professor of physic in the University of Dublin, and was physician to several Dublin hospitals. He enjoyed a very large and extensive practice, and his opinions as an alienist were highly thought of. In 1868 he showed from legal evidence that in 1741 Dean Swift was found to be insane. Sir John was a

leader in the scientific and social circles of Dublin for a long time, and all the viceroys for the last fifty years have experienced his hospitality.

Therapeutical Aotes.

Somnifacient in Cardiac Insomnia.—In addition to the usual treatment the following potion is advised in *Journal de médecine de Paris* for June 20th:

Salol as a Bowel Antiseptic is best prescribed, according to the *Journal of the American Medical Association* for July 25, 1908, as follows:

The Use of Alkali Phosphate Waters in the Treatment of Digestive Disorders, and Particularly of Constipation.—Barrère (Bulletin général de therapeutique for June 8, 1908) observes that alkali phosphate waters are of real value in the treatment of affections of the digestive tract. He cites the following formula for a phosphatic water which is recommended by Professor Albert Robin in his work entitled Traité des maladies de l'estomac:

In his clinical lectures during the session of 1906 and 1907 Robin revived anew the same prescription. modified as follows:

This phosphated water is used to-day in the Beau-

jon Hospital

The foregoing is a formula very similar to that advised by Soupalt in his work entitled *Les dilatations de l'estomac*, containing the following proportions:

These waters are prescribed by Robin and Bardet in hyposthenic conditions, associated with gastric and intestinal fermentation and all forms of constipation, in doses of one half to one wineglassful, taken immediately on arising, one hour or a half an hour before breakfast or the midday meal, and occasionally three or four hours after dinner. Soupalt recommends his prescription to be taken once a day in wineglassful doses the first thing in the morning on an empty stomach.

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THE PUBLIC HOSPITALS OF NEW YORK.

More than two years and a half ago the mayor of New York appointed a commission to consider the whole subject of the public hospitals of the city and to devise "some comprehensive plan for the reorganization, extension, and administration of the public hospital system." The commission has now made its report, dated July 28, 1908. To a great extent the report deals with the ambulance service. That feature of our hospital work we have already commented on (see the *Journal*, July 11th, page 76).

The commission favors an extension of the lease of Ward's Island to the State for the uses and purposes of the Manhattan State Hospital-either a short extension, "say for five years, with the understanding that the property is to be surrendered to the city at the end of that period," or an extension for not less than fifty years, "with an agreement upon the part of the State that, in consideration of such lease, it will construct on Ward's Island a modern hospital for the insane, for the care of the insane poor of the city of New York, the plans to be approved by the Board of Estimate and Apportionment of the city of New York." The commission prefers the latter arrangement, and it was authorized by the last legislature, the new hospital to be constructed within ten years. The result promises to be beneficial to the insane of the city and favorable to the adequate teaching of psychiatry within the metropolis.

The present situation in the matter of caring for persons with tuberculous disease is regarded by the

commission as unsatisfactory, mainly on account of the divided control of the institutions which afford such care. Divided administration, indeed, seems to the commission undesirable as regards the public hospitals in general. The Department of Public Charities administers the City (Charity) Hospital, the Metropolitan Hospital, and the City Home Hospital, on Blackwell's Island; the New York City Children's Hospitals and Schools, on Randall's Island; the Kings County Hospital, the Cumberland Street Hospital, the Bradford Street Hospital, the City Home Hospital, and the Coney Island Hospital, in Brooklyn; and the Sea View Hospital, in the borough of Richmond. The Department of Health administers the Willard Parker Hospital, the Scarlet Fever Hospital, and the Reception Hospital, in the borough of Manhattan; the Riverside Hospital, at North Brother Island; the Kingston Avenue Hospital, in the borough of Brooklyn; and the Otisville Sanatorium, in Orange County. The Board of Trustees of Bellevue and Allied Hospitals administers Bellevue Hospital, the Gouverneur Hospital, and the Harlem Hospital, in the borough of Manhattan; and the Fordham Hospital, in the borough of the Bronx.

The commission thinks that all these hospitals should make provision for treating tuberculous patients, and that all of them should be under one jurisdiction, preferably that of a single commissioner. This would require a revision of the charter, and, while it would make the system of the city departments uniform, its adoption, it seems to us, ought to be very carefully considered. The present management of Bellevue and the allied hospitals is so satisfactory that we think it ought to be continued at least until the new Bellevue is in good working order. If a single department is to be charged with the administration of all the public hospitals of the city, it need not be a new one, but might properly, we should say, be the Department of Public Charities, for certain institutions that are not really hospitals can probably best be administered with the aid of special experience in hospital management.

The extension of hospital facilities, especially in the boroughs of Queens and the Bronx, where the population is growing rapidly, is justly urged by the commission, also more care in selecting sites for new hospitals in all the boroughs with a view to the needs of different localities. "The construction of the new Bellevue," says the report, "should be expedited as rapidly as practicable, and in the relatively near future a new general hospital, with capacity for several hundred beds, should be constructed on the middle west side of the city in the borough of Manhattan." Both these recommendations, we believe, will meet with general approval.

BENZOIC ACID AS A FOOD PRESERVA-TIVE.

There has recently been issued by the Bureau of Chemistry of the Department of Agriculture the fourth part of a report entitled Influence of Food Preservatives and Artificial Colors on Digestion and Health. It is a brochure of rather more than 250 pages, prepared by the chief of the bureau, Dr. Harvey W. Wiley, with the collaboration of several members of his staff. It deals with benzoic acid and the benzoates employed as preservatives. The investigations on which it is founded have been largely experimental, the so called "poison squad" having been made use of. Eighteen tables are given in this section of the report, which in its entirety constitutes Bulletin No. 84.

The general conclusion arrived at is that the continued ingestion of benzoic acid, either free or in combination in the form of sodium benzoate, "is highly objectionable and produces a very serious disturbance of the metabolic functions, attended with injury to digestion and health." As is the case with boric acid, salicylic acid, and sulphurous acid, the injurious effects include grave derangements of digestion, attended by phenomena indicative of irritation, such as nausea, headache, and in a few cases vomiting. In the experiments these results were observed in healthy individuals living on good and nourishing food and under proper sanitary conditions. It is argued, therefore, that the effects noted would be more pronounced and more enduring in weak persons or in those of impaired health.

It was observed that the subjects of the experiments lost flesh distinctly, and this fact is held to indicate either defective assimilation of food or increased recrementitious processes. It is declared that the influence of benzoic acid and sodium benzoate upon metabolism was in no instance of a favorable character; while the changes were in many cases not highly pronounced, they were always of an injurious nature. Nature's efforts to eliminate these substances, it is remarked, are corroborative of the deductions mentioned. By these efforts benzoic acid, so far as possible, is converted into hippuric acid and so excreted, but there is a tendency to retain benzoic acid and especially sodium benzoate in the system for a notable length of time. The injurious effects are more rapidly produced when benzoic acid is administered as such than when sodium benzoate is given, but eventually the deleterious action is the same; consequently the use of the benzoate as a preservative is really no more defensible than that of the uncombined acid.

In the interests of the public health, finally, both benzoic acid as such and sodium benzoate should be excluded from food products. It is evident that

our grandmothers knew their business when they made their pickles, their jams, and their preserves without any extraneous preservatives. If they used preservatives, they used them for their flavor and not with any theoretical notion of their antizymotic action. We honor the memory of the dear old dames, and we rejoice that their unsophisticated methods are justified by modern scientific investigations.

SERUM REACTIONS AND THE GAME LAWS.

When Uhlenhuth, Wassermann, and Schultze elaborated the precipitin tests for the identification of various bloods, a relatively final solution of the problem of the distinction of animal bloods was offered. Since 1901 blood tests by the methods outlined have been extensively used in medicolegal work, and in Continental countries, at least, such tests have been received with confidence by the courts and are now considered as established. That they have limitations is well known, but such limitations, being granted and allowed for, render the experimenter all the more secure in his conclusions. Specific sera exist for other tissues than blood, and, although a rich literature has sprung up relative to them, little of medicolegal significance has arisen save in the spinal cord fluid tests for syphilis, locomotor ataxia, and general paresis, and, on the Continent, isolated instances of tests undertaken to determine the character of certain animal tissues.

Dr. F. P. Gay, of the Pathological Laboratory of Harvard University, has given in the Journal of Medical Research for July an interesting account of the utilization of the musculoprecipitin test for the detection of violators of the Massachusetts game laws. During the Winter of 1907 the Fishery and Game Commission of Massachusetts became convinced that deer were being killed contrary to law. In February a woodchopper saw a suspect loading a sleigh with suspicious bundles, and the game warden later found unmistakable evidence of the killing and bleeding of a large animal. Running the tracks back led them to the house of the suspect, which, on being searched, was found to contain only the mutilated heart of a large animal. The suspect said it was the heart of a calf which he had purchased at the local market, but the statement could not be substantiated on inquiry at the market. The heart was turned over to Dr. Gay for examination, to determine if possible whether it was from a calf or from a deer.

Dr. Gay shows in his discussion of the problem that on *a priori* grounds the solution seemed unpromising, since other workers, notably Vallée and Nicholas, with European species of the *Cervida*,

had obtained very contradictory results; but Nuttall, in his study of the seroprecipitins, had found that, of seventeen species of the deer family studied, fourteen reacted more or less with an ox precipitating serum, although ox serum gave no reaction with antisera to the hog deer and the Mexican deer. In addition to the preparation of an extract from the suspected heart, Gay made extracts from venison as well, and ran both through the tests with extracts obtained from the hearts of a calf and a young cow. Rabbits were used for the test. The results obtained were very striking. The suspected heart and the venison behaved alike, and in every respect the direct opposite of the cow's heart and calf's heart. It was very evident that the suspected heart was from a deer and not from a calf. We infer from Dr. Gay's closing sentence that the malefactor was convicted on the evidence supplied by the serum reactions.

SCARLET FEVER AND THE VERMIFORM APPENDIX.

M. René Kauffmann (Thèse de Paris, 1908; Semaine médicale, July 8th) has made a number of interesting observations on the behavior of the vermiform appendix in connection with scarlet fever. The appendix has been called the "abdominal tonsil," and Kauffmann seems to regard the organ as analogous to the faucial tonsil in its reaction to the poison of scarlet fever and as essentially a lymphatic structure. If, he says, appendicular inflammation is not oftener observed in the course of the disease, it is partly because the abdomen is not as a rule subjected to methodical examination and partly because the inflammation generally remains latent. In the majority of instances it does not appear to be severe enough to give rise to spontaneous pain.

The initial vomiting, Kauffmann suggests, may not be altogether dependent on the pyrexia, and he thinks that in itself it ought to lead one to examine the abdomen carefully. Deep pressure in the right iliac fossa will evoke acute pain at McBurney's point unless the patient is so overwhelmed by the scarlatinal poison as to be profoundly prostrated. Scarlatinal inflammation of the appendix manifests itself also by pronounced intestinal derangement, either diarrhoza or, more commonly, obstinate constipation.

It is not solely in the pyrexial stage of scarlet fever that appendicular inflammation may declare itself; he has observed it four times during the per iod of desquamation and twice after the fifteenth day. The author knows of no practical conclusions to be drawn from this late appearance of the trouble in particular, he remarks, the influence of

diet appears to be very problematical. All forms of appendicular inflammation may be met with, but generally the only symptoms to be noted are slight and transient elevation of the temperature, pain at McBurney's point, and rigidity of the abdominal wall at that situation. Though a scarlatinal attack of inflammation of the appendix may be grave in itself, it is still more serious in consequence of the sequelæ to which it leaves the patient exposed; even when the lesions have subsided, he remains predisposed to subsequent outbreaks, and they are rendered additionally dangerous by the fact that a previously infected structure is involved.

In all instances of the post mortem examination of persons who have died of scarlet fever or of any of its complications Kauffmann has found special histological changes in the vermiform appendix. As regards its gross appearance, the organ is observed to be injected, with hemorrhagic points in its mucous membrane, and the glands of the mesoappendix are invariably engorged. Microscopically, the lesions are found to consist of infiltration of all the coats of the appendicular wall by multinuclear leucocytes and lymphocytes and considerable hypertrophy of the follicles, some of which have been converted into abscesses opening into the cavity of the appendix. The glands show a simple inflammatory reaction.

The treatment must be largely of a preventive character. Baths and purgatives, the author thinks, should be interdicted. In malignant cases cold applications should be made to the abdomen, and absolute abstinence from food or a strict milk diet enforced. In some instances a manifestly acute inflammation may render surgical intervention necessary, but only when medical treatment has proved inefficacious.

THE VOMITING OF PREGNANCY.

Dr. E. Schwarzenbach, of Zurich, has written an interesting essay on the ætiology and therapeutics of the vomiting of pregnancy, which appeared in the Correspondens-Blatt für schweizer Aerste for July 15th. The well known fact that this vomiting occurs especially in the morning led him, like others before him, to the conclusion that prolonged fasting was the chief exciting cause of the occurrence. The pregnant woman is afraid to eat because she fears that she will vomit. Thus is formed a vicious circle: The pregnant woman does not eat because she will vomit; she vomits because she does not cat. Our author, therefore, insists upon short intermissions between meals, even during the night, and states that he has observed good results from the plan. A great deal of persuasion is often necessary to induce a pregnant woman suffering with hyperemesis to eat; but when she has once tried to eat small quantities about every two hours, even during the night, she will soon adhere to this schedule, and it will greatly benefit her and soon relieve her entirely.

This theory is not a new one. We know that the vomiting of pregnancy is a physiological act, and therefore medication is not likely to be of much help. Dr. Schwarzenbach now puts forward tentatively an explanation of this vomiting. He helieves that even a light grade of hyperemesis gravidarum is a symptom of intoxication. A certain toxine of pregnancy, formed in the stomach, excites the mucous membrane of this organ, and thus induces vomiting. An empty stomach will react stronger, as the toxine is in concentrated form, while the contents of a full stomach dilute the toxine, which then cannot act so intensely. Washing out the stomach in the morning, after a prolonged suspension of eating, will therefore be of great help. The place of this lavage may be taken by the drinking of a cup of fluid upon awakening, which fluid -tea, milk, water, etc.-will be vomited, thus expelling the toxine. The author thinks that the principal element of treatment for hyperemesis gravidarum, besides rest in the recumbent posture, is frequent feeding.

Obituary.

GEORGE MICHAEL EDEBOHLS, M. D., of New York.

Dr. Edebohls died on Saturday, August 8th, at the age of fifty-four years. He was a native of New York and a graduate of the College of Physicians and Surgeons, of the class of 1875. He early achieved prominence as a surgeon, especially in abdominal and gynæcological work. He was officially connected with several hospitals and was a member of the faculty of the New York Postgraduate Medical School and Hospital. He was widely known for his advocacy of the operation of decapsulation of the kidney as a remedy for Bright's disease. He died at the height of his powers, esteemed and liked by his professional brethren and by all who knew him, for he was an upright and attractive man.

Rews Items.

Personal.—Dr. William Peacock, of Philadelphia, has been appointed district physician to the Bureau of Health.
Dr. Thomas C. Gifford, of Trenton, will remove to Utica, New York, where he will resume his practice.

Bunsen Monument.—The monument in honor of Robert Bunsea, designed by Professor Volz, of Karlsruhe, Baden, was unrealed at Heidelberg on August 1st.

Medical Congress Opens.—The fifth Pan-American Medical Congress was inaugurated at Guatemala City on August 6th. All of the nations of the New World are represented, a great many distinguished physicians being among those present.

Cortland County Medical Society to Observe Hundredth Anniversary.—In commemoration of the hundredth anniversary of the founding of the society in Homer, N. Y., a centennial meeting was held at the Congregational Church of Homer on August 5th, at 10 o'clock in the morning. Many prominent physicians from out of town were present.

Samuel D. Gross Prize.—The Philadelphia Academy of Surgery has announced that essays in competition for the Samuel D. Gross prize of \$1,500 will be received until January 1, 1910. The candidate must be an American citizen; the prize is awarded every five years to the writer of the best original essay, not exceeding in length one hundred and fifty printed octavo pages, and illustrating some subject in surgical pathology or surgical practice, founded upon original investigation.

The Health of Pittsburgh.—During the week ending August 1, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 2 cases, 0 deaths; typhoid fever, 20 cases, 1 death; scarlet fever, 9 cases, 0 deaths; diphtheria, 9 cases, 2 deaths; measles, 37 cases, 4 deaths; whooping cough, 16 cases, 0 deaths; pulmonary tuberculosis, 13 cases, 10 deaths. The total deaths for the week numbered 143 in an estimated population of 565,000, corresponding to an annual death rate of 13.10 per 1,000 population

Convalescent Camp at the Binghamton, New York, State Hospital.—Dr. Charles G. Wagner, Superintendent of the Binghamton, New York, State Hospital for the Insane, has formed a convalescent camp on the hospital grounds, which is designated as a part of the treatment of convalescent patients. The camp consists of five tents and a small frame structure used as a kitchen, and is connected by telephone with the main hospital. The dining tent seats twenty-five patients. Hammocks, swings, settees, boats, music, and a library of reading matter complete the camp equipment.

First Aid in Railway Accidents.—Reports from the Pennsylvania Railroad show that since January I, 1008, four thousand two hundred employees of the Western Pennsylvania Division of the Pennsylvania Railroad system, terminating in the Pittsburgh district, have received instructions how to render first aid to the injured. About twelve lectures are field each month and the instructions are given by the redical examiners. Employees are taught how to place injured passengers on stretchers and how to carry them; how to bind up wounds and fractures; how to treat burns, etc., until competent medical aid can be obtained.

Day Camp for Tuberculous Patients.—The New York Comby Red Cross Society in its crusade against tuberculous will open a day camp for tuberculous patients on the roof of the Vanderbilt Clinic at Sixtieth Street and Amstersterdam Avenue on October 1st. The expenses, estimated at \$5,000, to defray the cost of nursing and nourishing the patients, will be raised by voluntary contribution. The plan is to care for at least forty patients all of the year, and the camp will be open at first only in the day time. The idea of a day camp was first tried by the Charity Organization of New York on the old ferryboat Southfield, after the City of New York had purchased the Staten Island ferry line.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the f downing statement of new cases and deaths reported for the two weeks ending August N. 1508.

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|--|-------|--------|---------|------------|
| | (3000 | Death- | (| The sit =. |
| Inherenlosis pulmonalis | 101 | 1 + 4 | 1 . 1 | 1 3 |
| Diphtheria | 18- | 1.7 | 1 ~ | |
| Mastes | 1 - 3 | 1.1 | 1 3 | |
| Scarlet fever | | 1 | 8, | |
| Smallpox | | | | |
| Variable and a second of the s | | | 1 | |
| Lychool fever and a con- | | 1.3 | 1 44.7 | 2 |
| Whooping cough | | 4 | 23 | |
| Cenebrospinal meringitis | 112 | 1.1 | Tive s | |
| | | - | | |
| Totals | 1.088 | 211 | 930 | 1.7 |

The Health of Philadelphia.—During the week ending August 1, 1008, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 43

cases, 3 deaths; scarlet fever, 20 cases, o deaths; chickenpox, 2 cases, o deaths; diphtheria, 42 cases, 3 deaths; cerebrospinal meningitis, 3 cases, 3 deaths; measles, 4 cases, 1 death; whooping cough, 31 cases, 10 deaths; plumonary tuberculosis, 148 cases, 53 deaths; pneumonia, 30 cases, 21 tuberculosis, 148 cases, 53 deaths; pneumonia, 30 cases, 21 deaths; erysipelas, I case, I death; puerperal fever, I case, 3 deaths; cancer, II cases, 14 deaths; tetanus, 5 cases, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 7; diarrhea and enteritis, under two years of age, 92; dysentery, I. The total deaths numbered 473 in a population of 1,532,738, corresponding to an annual mentality of 1600 per 1,000 population. The total infant mortality was 188; under one year of age, 154; between one and two years of age, 34. There were 35 still births, 17 males and 18 females. The total precipitation was 0.03 inch. The temperatures were high. There were 4 deaths from heat and sunstroke, 3 adults and 1 minor.

Charitable Bequests.—By the will of Mrs. Annie L. Lowry the following bequests were made: The Industrial Home for Blind Women, \$20,000; Philadelphia Home for Incurables, \$10,000; Pennsylvania Society to Protect Children from Cruelty, \$13,000; Home of the Merciful Savior dren from Cruelty, \$13,000; Home of the Merchill Savior for Crippled Children, \$10,000; House of the Holy Child, \$5,000; Association for the Care of Colored Children, \$5,000; Home for Infants, \$5,000; Presbyterian Hospital, for the Mary L. Davidson free bed, \$5,000; German Hospital, for the Nathan Davidson free bed, \$5,000; Philadelphi, The Carlon free bed, \$5,000; Philadelphi, The pital, for the Nathan Davidson free bed, \$5,000; Philadelphia Home for Incurables, for the Sarah K. Davidson free bed, \$5,000; West Philadelphia Hospital for Women, for a free bed, \$5,000; Pennsylvania Retreat for Blind Mutes and Aged and Infirm Blind Persons, \$5,000; Old Men's Home, \$2,500; Western Home for Poor Children, \$2,000; Home for Aged and Infirm Colored Persons, \$5,000; Children's Seaside House, Atlantic City, \$5,000; Friend's Asylum for the Insane, Frankford, \$3,000; Pennsylvania Hospital for the Insane, to be used for poor women patients, \$3,000; Pennsylvania Training School for Feeble Minded Children, Elwyn, Pa. \$3,000; Ada Lee Orphanage, Calcutta, India, \$3,000.

University Notes.—Dr. Henry R. Alburger, of the University of Pennsylvania, has accepted a call to the University of Indiana, as professor of pathology.-Dr. J. Edwin Sweet, who has had charge of the Laboratory of Experimental Surgery of the University of Pennsylvania for two years, has been advanced to the grade of assistant professor.—By the death of William Davis Ely, '36, Yale College, the title of the oldest living graduate of Yale falls to Dr. Gurdon Wadsworth Russell, who graduated from the Medical School in 1837.—Dr. H. T. Marshall, formerly professor of nathology in the Philippine Medical School, has been elected professor of pathology in the University of Virginia Medical School.—Dr. J. A. E. Eyster, associate professor of physiology at Johns Hopkins University, has been elected professor of pharmacology and materia medica.—Dr. Carl Meloy, formerly instructor at Johns Hopkins in pathology, has been elected adjunct professor of pathology.—Dr. C. W. G. Rohrer has been appointed associate professor of pathology and assistant in genito-urinary diseases at the College of Physicians and Surgeons, Baltimore.——Foreign.—Dr. Aron, of Berlin, has accepted the position of professor of physiology in the Philippine Medical School.—Dr. H. Dold, of Tübingen, has been appointed lecturer in bacteriology and comparative anatomy in the Royal Institution of Public Health, London.—Dr. Steyrer, of the University of Berlin, has received the title of professor.—Professor Lüthje has been called to the University of Kiel as successor to Professor Quincke.—Dr. August Gürber, of the University of Marburg, as successor to Professor Heffter, to fill the chair of pharmacology.—Professor Nagel, of Berlin, has been called to the University of Kiel as been called to the University of Heiner, to fill the chair of pharmacology.—Professor Nagel, of Berlin, has been called to the University of Edinburgh.—Dr. George Joachimsthal has been appointed extraordinary professor of orthopædic surgery and director of the University Clinic at Berlin, which posts were vacated half a year, ago by the sudden Experimental Surgery of the University of Pennsylvania for two years, has been advanced to the grade of assistant has been appointed extraordinary professor of orthopacines surgery and director of the University Clinic at Berlin, which posts were vacated half a year ago by the sudden death of Professor Hoffa.—Professor Karl von Than, pro-fessor of medical chemistry in the University of Budapest, Hungary, died at the age of seventy-four years.

Dith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL. August 6, 1908.

- Some Aspects of Gonorrhea (Shattuck Lecture),
 By Frederick Forchheimer.
 Stenosis of the Pylorus in Infancy. A Surgical Emergency. A Report of Four Cases Operated on with Recovery. End Results. By CHARLES L. SCUDDER.
- The Tonsils and Their Relation to the General Health,

 By CHARLES P. SYLVESTER.

 The Demonstration of the Spirochæla Pallida by the Method of Dark Field Illumination,
 - By WILLIAM C. QUINBY.

1. Some Aspects of Gonorrhœa.—Forchheimer, in the Shattuck Lecture, gives as results of his studies the following brief statements: I. The morbidity of gonorrhœa is diminishing. 2. The American army and navy are exceptions to this rule. 3. The present mathematical methods of deducing incidence of gonorrhea in all men from morbidity lead to fallacious results. 4. 54.1 per cent. of all males have gonorrhea during their lifetime. 5. We have not sufficient knowledge of the facts to state how many women have had gonorrhea during their lifetime. 6. The small number of his cases of sterility does not justify any positive conclusion. 7. Prevention of conception is the cause of "one child sterility" in the majority of instances. The object of his investigations was to determine the truth of the statements which have been made, in this country as well as abroad, by men and women who are interested in the suppression of venereal diseases. Whenever his figures have shown anything it is always that the propagandists have greatly overestimated the frequency, the complications, and the dangers of gonorrhea. This has been notably the case with specialists in genitourinary diseases in the male and in the female. With few exceptions, these observers have done that which is natural to all of us-magnified their office. Moreover, many who have written have been satisfied with the old figures of Ricord (eighty per cent. of all males have had gonorrhea), which, combined with the views of Nöggerath, would make it appear that very few men and women could escape having gonorihea. If to this there are added the remarkable mathematical gyrations of Blaschko, which are supposed to represent statistical methods, it is little wonder that the layman becomes an antigonorrhæic howling dervish. This is seen especially in Germany, according to Erb, where the women suffragists speak of an almost universal "poisoned wedlock" due to gonorrhœa, because no man enters matrimony healthy and pure, and his wife must suffer for the sins of his youth; of sterility increased and, therefore, countries depopulated. That there is much damage done by gonorrhea is abundantly shown by all statistics; therefore, it is a righteous cause to fight for its reduction. But no righteous cause is aided by such lurid statements as have been made in connection with gonorrhea. Eventually the truth will be found, and the good cause will suffer because of exaggeration. The harm done by gonorrhea is sufficient, even upon sober and sound investigation, to stimulate all of us to the necessity of combating the spread of venereal diseases. That they can be eradicated seems out of the question; that their frequency can

be reduced has been abundantly shown.

2. Stenosis of the Pylorus in Infancy.—Scudder observes that the prognosis is apparently hopeless, at least very grave, in cases treated medically. No case is on record which has received medical treatment and has recovered, in which it has been proved that the disease existed. One case only, that of Batten, was treated medically and, dying subsequently of some other lesion, was found to have a partial stenosis. Many cases are treated medically and come to operation, and the disease is found. The mortality following operation is bound to be always rather high, for the operation is done upon a weak child and the situation is that of an emergency. In the series of sixty operations studied by Scudder and Quinby, in 1905, the mortality from all operations was found to be 46.6 per cent.; in the 135 operations up to 1908 the mortality was found to be 48.8 per cent. The estimated medical mortality of these cases of pyloric tumor is between eighty and ninety per cent.

4. The Demonstration of the Spirochæta Pallida by the Method of Dark Field Illumination.—
Quinby says that it should be a routine practice to examine all suspicious lesions for the Spirochæta pallida. The organism has a definite morphology and can be distinguished from other spirochætae by careful microscopical examination. This is best done by the method of dark field illumination, with or without subsequent examination of a stained specimen. Since the organisms are not always numerous on the surface of the lesion, the method of obtaining them is of importance. A most satisfactory way is that of suction, and the case should not be pronounced negative until some such method has

been used.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 8, 1908.

A New Method of External Frontal Sinus Operation without Deformity, By JOSEPH C. BECK.
 Faciohypoglossal Anastomosis, By GEORGE F. COTT.
 A Method of Complete Nephroureterectomy for Renal

Tuberculosis in Women, By E. ZEH HAWKES.

4. A Special Diagnostic Phenomenon in Cerebellar Diseases. Report of Six Cases, Four of which Came to Autopsy, By Alfred Gordon.

Pathological Report of the Nervous System in Spondylose Rhizomelique, By John H. W. Rhein.

A Consideration of the Compensatory Diarrheas,
By Heinrich Stern.

7 Invagination of Limited Annular Gangrene of the Small Bowel versus Resection, By John E. Summers. Jr. Recent Studies on the Circulation and Their Importance to the Practice of Medicine.

BY ARTHUR D. HURSCHFELDER.

A Clinical Method for the Determination of the Sodium Chloride Content of the Blood and Other Body Fluids,

By DOUGLAS VANDERHOOF.

10. Relation of So Catled Ophthalmic Migraine to Epilepsy
By ALVIN A. HUBBELL
II. Distinctive Diagnostic of Affections of the Option North

11. Distinctive Diagnosis of Affections of the Optic Nerve,

By Harry Friedenwald.

12. A Comparative Study of the Dosage and Effects of Chloral Hydrata Joografian and Programmed Conference of Chloral Hydrata Joografian and Chloral Hydrata Hydrata Joografian and Chloral Hydrata Hydrata Hydrata Hydrata Hydrata Hydrata Hydrata Hydrata Hydrata Hyd

Chloral Hydrate, Isopral, and Bromural on Cats.

By Torald Sollmann and R. A. Hatcher.

The Treatment of Some Forms of Lens Displacement
Other than Those of Traumatic Origin.

By L. D. Brose.

1. A New Method of External Frontal Sinus
Operation without Deformity.—Beck, of Chicago, describes the technique as follows: An inci-

sion is made through the skin and subcutaneous connective tissue, through the upper margins of the eyebrows, then downward and inward as far as is usually done in the Killian operation. These two incisions are then joined by means of a transverse incision across the bridge of the nose. This skin and subcutaneous flap is then dissected upward until the upper limits of the frontal sinuses are exposed. This is determined by having a celluloid tracing of the radiogram. If the sinuses extend very high up on the forehead, then it may become necessary to make two small perpendicular incisions at the extreme limits of the flap (external canti). Place a celluloid tracing of the radiogram over the frontal sinus regions, and incise the periosteum all around the upper and lateral margins of the same, but not over the supraorbital borders or at the root of the nose. With a flat chisel the external table of the frontal sinus is then penetrated along the whole course of the above described incision through the periosteum, also severing the attachment of the sæptum of the frontal sinus from the posterior surface of the external table. This osteoperiosteal flap is then slightly pried open by means of a chisel, and a Gigli saw is brought down to the base of the frontal sinus, in other words, across the supraorbital margins. Carefully drawing the saw from within outward a few strokes will sever the bone but not the periosteum. Great care must be taken not to cut through this structure, rather not to saw through the entire thickness of bone, as it will readily break when it is everted downward over the nose. The skin flap is now reflected upward and the periosteal bone flap downward, thus exposing both frontal sinuses. If only one sinus is to be exposed, then the technique varies only in the osteoperiosteal flap, making the incision within the limits of the frontal sinus sæptum. The skin flap may be made by making a perpendicular incision from the internal angle of the orbit as high as the radiogram indicates the height of the frontal sinus, within the natural intersuperciliary furrow (wrinkle). Thoroughly eradicate the diseased mucous membrane, but do not curette, and enlarge the natural opening into the nose, using the Halle trephine or Good rasp. Also thoroughly remove the most anterior ethmoidal cells. Introduce a large rubber tube through which is passed a wick. This wicking is loosely folded within the cavity of the frontal sinus. The other end of the tube is passed down into the nose close to the floor, with a small portion of the wicking protruding. Replace the osteoplastic flap with its firm hinge to prevent falling in, and its natural upper marginal bevel where the anterior and posterior tables join. Bring down the skin flap and suture with silkworm gut, using the Halstead subdermal suture and a few horsehairs right over the bridge of the nose. The after treatment is to remove the gauze the next day, and on the third to the fifth day the rubber tube is replaced by a silver filigree or gold tube. In one case he used no tube, and now, four months since operation, the opening is sufficiently large to permit ventilation and drainage, and the patient is well. One should avoid the use of douches or the strong blowing of the nose immediately after operation.

4. A Special Diagnostic Phenomenon in Cerebellar Diseases.—Gordon reports six cases, four

of which came to autopsy. These four cases are conclusive as to the relation of the attitude of the head to a cerebellar disease. In the two purely clinical cases the symptoms of the cerebellar tumors were so typical that there was no doubt as to the diagnosis. In all six of the cases the head assumed a certain persistent position. In four cases it was turned to the side opposite the lesion during the entire course. In two of them it was inclined at first toward the seat of the lesion, but some time before the patients died the head changed its position. All the six cases are a good illustration of the fact that in cerebellar diseases, generally speaking, a special attitude of the head is a pathognomonic sign. Special emphasis is needed in regard to the increase of vertigo and headache when the inclined heads are turned forcibly toward the side of the lesion. This observation is quite novel. This peculiar change of position of the head during the evolution of the cerebellar syndrome did not occur in each of his cases at the same period of the disease. In the first case it occurred six months before death; in the fifth only three weeks before the fatal issue. In the third, fourth, and fifth cases the head assumed from the beginning the abnormal position with increase of vertigo and headache on turning it to the side of the lesion. In the second case the fixed position of the head on the side opposite to the lesion appeared after the severe symptoms set in. It is impossible to say why the change of position of the head occurs at various periods in various cases. It is also difficult to say why the change occurs at all and why, when the head is turned toward the lesion, the vertigo and headache become intolerable. At all events, it is useful, in his opinion, to retain this fact, that in his cases at least the increase of vertigo caused by placing the head in an opposite position was an indication for the seat of the cerebellar tumor. The number of his cases is certainly too small to draw definite conclusions.

9. Sodium Chloride in Blood.-Vanderhoof observes that the sodium chloride content of the blood and body fluids may be accurately estimated by an adaptation of Volhard's method of quantitative chloride determination after first precipitating and oxidizing the albumin bodies by nitric acid. method requires one cubic centimetre of blood, aspirated from a vein, and accurately measured in a volumetric pipette. Clinical applications of this method show a practically constant value for sodium chloride in a variety of conditions such as nephritis with and without cedema, uræmia, pneumonia, epilepsy, gastric anacidity, and conditions of cachexia. Variations in the amount of sodium chloride depend on the relative proportion of plasma and corpuscular elements in the specimen examined, with the highest values in cases of anæmia and the lowest figures in patients with venous stasis due to heart, kidney, or lung affections. The proportion of sodium chloride in the plasma of the blood is constant in conditions of health and disease.

12. A Comparative Study of the Dosage and Effects of Chloral Hydrate, Isopral, and Bromural on Cats. Sollmany and Hatcher have experimented on cats, the drugs being administered by the tormely time. They round that the effects of these times to can be dry ded into a limited number of

fairly well defined stages, but no criteria were found by which to distinguish the gradations of the effects within each stage. A fairly large range of doses, therefore, produces apparently identical effects; there are. furthermore, considerable variations in the individual reactions of different animals. A fair comparison between different hypnotics can, therefore, be made only on the basis of the averages of a considerable number of experiments, or by trying the several drugs on the same animal. The determination of the true "minimal hypnotic dose" of a drug is impossible, at least on cats. The smallest doses which produce effects sufficiently definite to serve as criteria, are relatively much larger than the doses which would be used therapeutically to induce sleep. If the dose of chloral required to produce a given effect is taken as 100, that of isopral would be about 60 (as stated by Hatcher) and that of bromural about 100. The bromural narcosis is, however, less profound. These ratios hold for all doses, small and large. The toxic quotient of the three drugs is about the same. The contrary conclusion of Impens is based on highly exceptional results. In practice, however, chloral is only half as dangerous as is isopral since excessive doses are generally expelled by vomiting, and since the subsequent very dangerous cachexia is less pronounced. On the other hand, relatively small doses of chloral do at times cause sudden death, namely when there is great excitement. Large doses of bromural are nearly equally as dangerous as corresponding doses of chloral, so that it cannot be called absolutely harmless. Since it is only advised, however, for the mildest cases, the temptation to give large doses would be absent. The hypnotic and motor effects of therapeutical doses of isopral and bromural set in and pass off much more quickly than those of chloral. The difference grows less pronounced as the dose is increased. The cachexia after large doses is considerably more profound and lasting after isopral than after the other drugs.

MEDICAL RECORD

.lugust 8, 1908.

I. Darwinism and Diabetes,
2. Symptomatology of Recurrent and Abductor Paralysis of the Larynx,
3. Mechanical Vibration in the Treatment of Constipation

and Pelvic Conditions,
By Mary L. H. Arnold Snow.

4. Physiological Action of the Mount Clemens Mineral Baths,
Baths,
By Richard Leuschner.
5. The Use of Bacterial Vaccine's,

2. Symptomatology of Recurrent and Abductor Paralysis of the Larynx.— Rice states that it is difficult to tabulate any statement of symptoms of the motor neuroses of the larynx, which renders the diagnosis positive without a careful examination with the laryngeal mirror. So far as the voice is affected, there is present every degree of impairment, from slight hoarseness to complete aphonia; a lesion which shows no abnormality in quiet conversation, would be apparent if the patient endeavored to use the voice in a forcible way, or tried to sing. The quality of the voice may even change from day to day, because the compensatory aid given by the unaffected muscles constantly varies in efficiency. In unduteral conditions, it may be stated

as a rule, that the voice shows a gradual and permanent improvement if the vocal cord muscles proper, the internal tensors on the affected side, retain their integrity; but if loss of power here allows the margin of the band to remain concave, there is little hope of vocal improvement. This is an important point in considering the prognosis of voice behavior. A careful study of the conversational pitch from day to day would show whether the impaired muscles were improving in tone. One unaffected lateral muscle can make approximation sufficiently good for ordinary conversation, provided the margin of the affected band is straight and not concave. We do not see so many concave bands, even in unilateral recurrent paralysis, because the author thinks the anterior muscle is, as a rule, not involved, and so the margin of the band is kept fairly straight and taut. As to dyspnœa. there are many degrees of this. If the loss of power develops slowly, and consequently if the respiratory space is but gradually narrowed, the patient accommodates himself, in a remarkable manner, to a iarynx almost entirely closed, without showing visible distress. Other symptoms such as vocal fatigue, laryngeal cramps, and cough, depend much upon the individual case and upon conditions apart from the neurosis. There are many cases where it will require numerous and most painstaking examinations to determine what muscle or group of muscles are at fault, because perhaps the state of partial paralysis will be masked by a condition of jerky spasm. A weak solution of cocaine sometimes aids, by quieting spasm, and by emphasizing the image of real loss of power. The symptoms of no two cases seem to be exactly similar, and it is most interesting to carefully study the behavior of each.

3. Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions,-Snow states that the following principles should govern the application of mechanical vibration: 1. The vibration should possess the necessary rapidity and length of stroke demanded to meet a given condition, and exerted pressure must be such as to be painless. 2. The rapidity, stroke, pressure, or nonpressure should be governed by the indications and the patient's reactionary resistance. 3. The interruptions, when using interrupted vibration, should be limited in number to avoid exhaustion in nerve power. 4. The intervals of rest should be three, or even four, times as long as the period of impulse contact to assist in perpetuity and fixedness of the effect. 5. The periods of contact and rest should be rhythmical in the administration of interrupted vibration. 6, Vibratory effects should be applied to aid or promote functional activity of a part without altering the integrity or unfavorably affecting the normal activity of the part. Mechanical vibration in conjunction with dietary measures, and in some instances exercises directed to the compression of the bowels and liver. is the treatment par excellence for constipation. When carefully administered it is absolutely painless, harmless, and productive of the most gratifying results, and consequently, like many other physical measures, is worthy of a trial by the general practitioner. The quantity, kind, and quality of the food ingested must be regulated, in order that the functions may not be overtaxed, and that the food

may at the same time be nutritious and not too con-

BRITISH MEDICAL JOURNAL July 25, 1908

COXA Valga.

The Removal of Lymph Glands,
On the Action of Chloroform Administered by Different Channels, By D. N. Paton and D. E. Lindsay,
A Note on the Administration of Ether by the Open
Method,
On Restal Decider

Rectal Drainage in Cases of Due to Appendicitis, By B. POLLARD.

I. Coxa Valga.—Tubby states that practically coxa valga is an opening out of the angle made by the head and neck of the femur with the shaft. The cases may be classified as follows: A. Congenital. (a) Associated with congenital dislocation of the hip. (b) Existing sui generis. B. Acquired. (1) Coxa valga arising from traction exerted by a pendent limb. This condition is met with in cases of marked infantile paralysis and also when the limb has been inactive over a long period. Coxa valga also occurs in the stump after amputation through the thigh in early childhood where the stump is pendent. (2) Static or functional varieties. When the centre of gravity of the trunk of the body is disturbed, as in scoliosis, the femur will be subjected to different conditions of stress and strain, due to unequal loading. For example, genu valgum on one side is associated with coxa vara on one side and coxa valga on the other. When a patient is partially paralyzed in one lower extremity, he leans on it, and the pelvis is tilted downwards on that side. The affected limb is therefore abducted, and coxa valga results. (3) Traumatic coxa valga arises after fracture of the neck of the femur, with impaction and malunion, and after injuries and separation of the epiphysis. A direct tail or blow on the trochanter can produce the lesion. (4) Coxa valga associated with rickets or other processes of bony softening, such as osteomyelitis and tubercle. As a primary affection rachitic coxa valga is almost inconceivable. (5) Idiopathic. Considerable doubt must be expressed as to the existence of this form. The cardinal symptoms and signs are abduction of one or both lower extremities, associated with external rotation and limitation of adduction. I. Pain and spasm of the abductor muscles are often seen at the onset of the trouble. 2. Gait. In a unilateral case there is limping and the trunk is inclined toward the affected side. In bilateral cases the gait is rolling and unsteady. This is due to the fact that the head of the femur is not wholly and firmly planted in the acetabulum. In some cases a partial subluxation occurs in walking. 3. Lengthening of the limb to the extent of two or three centimetres occurs in a unilateral case, and tilting up of the pelvis on that side does not compensate for the increased length. 4. The limb is abducted and rotated outward, while movements of adduction and inward rotation are limited. This is said to be pathognomonic. 5. In bilateral cases the patient stands on one leg with difficulty. In unilateral cases, when the patient stands on the affected limb the body is inclined toward the affected side. 6. Compensatory changes occur in the trunk. In unilateral cases the upper part of the body is inclined toward the affect-

convexity toward the affected limb. Sometimes the pelvis is twisted, so that the anterior superior spine on the affected side is below and in front of its fellow. 7. The region over the great trochanter is often flattened. This is in marked contrast to the prominence in congenital dislocation. In coxa valga the trochanter is often below Nélaton's line, and its outer surface looks somewhat backward. Some torsion of the neck upon itself may also exist. 8. The last word rests with careful skiagraphy, which often throws out cases which would otherwise be classed as coxa valga. The chief cause of error in diagnosis is confounding an incipient tuberculous coxitis with coxa valga. But in the latter condition upward tilting of the pelvis does not compensate for the lengthening of the limb. As regards treatment the writer gives preference to Galeazzi's method which consists in performing a linear osteotomy well outside the joint, and at the base of the neck. In all anomalies of direction of the neck this is the proper site of operation, and not the subtrochanteric region. If the section is made at the spot indicated, the pull of the great muscular masses, whose tendons are inserted into the great trochanter, is to drag the shaft of the femur upwards and lessen the angle of inclination. This upward movement of the trochanter should be followed step by step, by means of x ray photographs, and stopped at the proper moment by means of a firm plaster of Paris spica. In some cases operation can be dispensed with by the use of a high sole on the sound side, which will not only improve the gait, but will lessen the angle of inclination by changing the direction of weight pres-

Removal of Lymph Glands.—Parker's paper is based on a series of 430 extirpations of lymph glands, a few lymphadenomatous, but mostly tuberculous. He also reports in detail a formidable case in which the right jugular, subclavian, and innominate veins had to be, and were successfully tied. Lymphadenoma is not always rapidly fatal, as shown by the excellent results obtained in two cases. Operation certainly appears sometimes justifiable, or at least, temporarily justified by the event. But most of the cases, except those extremely rare ones which are benefited by arsenic given internally, die unrelieved. Frequently the removal is impracticable with any hope of safety, on account of the number, extent, and matting together of the growths, and the dangerous hæmorrhage, to say nothing of the difficulty

3. The Action of Chloroform.—Paton and Lindsay report the results of their investigations undertaken to throw light upon the ætiology of "late" chloroform poisoning, by a study of the changes produced in the protein metabolism of the body, with more special reference to any interference with the hepatic metabolism. Chloroform was given to dogs by inhalation, by the stomach, and hypodermically. They found inhalation of chloroform to produce little effect on metabolism, but the other two methods apparently had a depressant effect. They attribute these different effects, not to difference in dose but to the rapid climination of the chloroform after inhalation, and to its slow elimination after the other two modes of administration.

was given by the stomach than when it was given hypodermically: this was probably merely a question of dose, 50 c.c. being given in the one case, as against 10 c.c. in the other.

LANCET.

July 25, 1908

The Psychology of Success,
Inborn Errors of Metabolism (Croonian Lectures,
IV),
By A. E. Garrob,

The Importance and Significance of the Chemical Examination of the Gastric Contents after a Test Meal, with a New Method for Estimating the Ferment Activity of the Gastric Contents, By W. H. WILLCOX. Motor Functions of the Stomach (a) in Normal Cases

4. Motor Functions of the Stomach (a) in Normal Cases and (b) after Gastroenterostomy, as Demonstrated by X Rays,

By H. M. W. Gray.

5. Intermittent Claudication, or Intermittent Limping, and Obliterative Arteritis, with Illustrative Cases,

By B. Bramwell.

6. A Case of Successful Removal of a Stone Weighing
Two Pounds,
7. The Diagnosis of Diseases of the Stomach and Intestines by the X Rays,
By C. J. Morron.

8. Ascites and Tumors of the Ovary,

9. The Individual Plasma, to. Latah and Crime, By W. F. FLETCHER.

3. Examination of Gastric Contents.-Willcox discusses the importance and significance of the various chemical examinations of the stomach con-Before the test meal is given the patient should be kept on light diet for three or four days, and no drugs given. The meal, which should consist of a pint of very weak China tea with milk and sugar, and a round of thin buttered toast, should be given in the morning before food is taken, and removed one hour later. The dextrin in the toast acts as an efficient stimulus to the gastric glands; another advantage of this meal is that very little proteid or nitrogenous bases are present, and therefore much of the hydrochloric acid secreted by the stomach is present in a "free" state. This gives every opportunity, in a case of cancer, for free hydrochloric acid to be present. The gastric contents should always be drawn off without dilution; when the stomach is normal in size and there is no obstruction, from three to four ounces should be obtained. In cancer and mucous gastritis the contents are slimy and filter badly. The total acidity should always be estimated, but too much importance should not be attached to the result. In cancer the acidity is usually low, but it may be high from the presence of an excess of organic acids. Hydrochloric acid may be present as free acid; as combined with proteid and organic bases (when it is physiologically active); and combined with inorganic bases (physiologically inactive). The most trustworthy test for free hydrochloric acid is Gunzberg's, but too much importance must not be attached to its presence or absence, as it is physiologically of no more importance than hydrochloric acid combined with proteid and nitrogenous bases. In gastric cancer free hydrochloric acid is scarcely ever present, because as fast as it is secreted it combines with the mucin present. Free hydrochloric acid is rarely found in children, because milk is used for the test meal. Active hydrochloric acid ("free" + combined with organic bases) is the most important estimation in gastric chemical analysis. The author uses a modification

of Volhard's method of estimating chlorides. It is probably not true that the amount of hydrochloric acid in the gastric contents is lessened or absent when there is cancer elsewhere than the stomach, but not in the stomach. The presence or absence of lactic acid is of no great importance. The various organic acids are present in considerable amounts in cancer of the stomach and other conditions where much bacterial fermentation is going on in the organ. Mucin is usually present in cancer, and absent in ulcer and hyperchlorhydria. Sulphocyanides should be tested for, as when present with mucin they indicate that the mucin may come from the saliva. Estimation of the ferment activity is of the greatest importance, and the writer has devised a new method, based on the fact that the amount of rennin present in the gastric contents usually is proportionate to that of the pepsin.

4. Motor Functions of the Stomach after Gastroenterostomy.—Gray's conclusions, based on the use of bismuth and x ray method of investigation, are as follows: I. The stomach is, naturally, not of the usually accepted shape. 2. It is an organ of two compartments, cardiac and pyloric, the division between these being a physiological sphincter. 3. These two compartments act in great part independently. 4. During digestion the cardiac portion maintains to a great extent its saccular form, its distal part only being affected by visible peristalsis, while the pyloric portion is tubular and affected by strong peristaltic waves along its whole extent. 5. In order to maintain or restore physiological conditions as far as possible the stoma in the operation of gastroenterostomy should be made in the pyloric tube. 6. It is very doubtful whether food prefers to pass through the pylorus rather than through the lateral stoma some time after gastroenterostomy has been done in cases where there is no actual obstruction of the pylorus.

5. Intermittent Claudication.—Bramwell states that intermittent claudication or intermittent limping is a rare condition, and is due to temporary ischæmia of the affected parts. The essential clinical characteristics of the condition are: 1. Absence of symptoms when the parts are at rest. 2. The development of symptoms (painful limping, etc.) after exertion. 3. The disappearance of the symptoms after rest. 4. Absence of pulsation in the pedal arteries. Three factors seem to take part in the production of the ischæmia, (a) vascular obstruction; (b) vasomotor spasm; and (c) the increased demand upon the circulation of the part which muscular exertion entails. Intermittent claudication and the obliterative arteritis with which it is usually associated are more common in men than in women, and seem to affect Jews much more than the other races of mankind. In syphilitic cases mercury does good. It may be necessary to give morphine for the severe pain.

LA PRESSE MEDICALE.

June 27. 1908

Semeiological Value of the Jugal and Commissional Semeiological Value of the Jugar and Value Leucoplasiae Called "Plaques des Funneurs."

By Professor L. LANDOUZY
Some Infectious Ulcers of the Fingers,
By LOUS QUELY A

Tuberculosis of the Pharyux.

1. Jugal and Commissural Leucoplasiæ.-Lan douzy asserts that buccal leucoplasiæ of various degrees are much more common than is supposed, that the use of tobacco is one of the best excitants for the production of the white plaques of stomatitis, but is in no way indispensable. The indispensable cause he believes to be the presence of syphilis.

2. Infectious Ulcers of the Fingers.—Queyrat describes with illustrations chancres, chancroids, and acute tuberculous ulcers of the fingers. The study of the acute tuberculous ulcerations of the fingers the author considers very important because their

diagnosis is often very difficult.

3. Tuberculosis of the Pharynx.-Letulle alleges that primary tuberculosis of the pharynx is clinically very exceptional, while secondary tuberculosis is much more common than was formerly thought. The lesions of tuberculosis of the pharyngeal mucous membrane give rise to various symp-

Necessity of Early Electrization in the Treatment of Reflex Atrophies, By A. ZIMMERN.

Sodium Chloride and the Gastric Juice, By ALFRED MARTINET

2. Sodium Chloride and the Gastric Juice .-Martinet concludes from clinical observation and from the observation of alimentary habits that in some people and with certain foods the least possible addition of salt favors the gastric juice.

LA SEMAINE MEDICALE.

July 1, 1908.

The Parenchymatous Lesion and the Development of Cirrhosis of the Liver, By NOEL FIESSINGER.

July 8, 1408. Fatal Asystole in Basedow's Disease,

By Georges Mouriquand and Léon Bouchut.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

June 30, 1908.

Concerning Chyluria, Concerning the Ophthalmoreaction of Tuberculosis in its Relation to the Result of Autopsies and Injection of By FEHSENFELD.

The Conjunctival Reaction in Genital Tuberculosis, By HORRMANN

Concerning the Ophthalmoreaction in Typhoid Fever, Is the Conjunctival Tuberculin Reaction without Dan-

ger? By Gorlich. The Cutaneous Inoculation of Tuberculin According to von Pirquet in Children during the First Years of By Morgenroth.

Concerning the Use of Gum Arabic as an Addition to the Anæsthetic in Lumbar Anæsthesia.

By ERHARDT. A Case of Pulmonary Suture to Check Severe Hæmor-rhage after a Shot Wound, By SCHUTTE. The Vaginal Cæsarian Section in Practice.

By LUNCKENBEIN. The Treatment of Venereal Ulcers with Hot Irriga-

1. Chyluria.- Lüdke reports a case of chyluria the cause of which he ascribes to a preceding cholecystitis.

2. The Ophthalmoreaction.—Fehsenfeld considers that, while the ophthalmoreaction has value as a specific diagnostic remedy, it has no absolute significance when taken by itself.

3. The Conjunctival Reaction in Genital Tuberculosis.—Hörrmann concludes, from a review of the literature and his own observations that: 1.

Clinically positive cases of tuberculosis react in the majority of cases positively, with the exception of those with advanced marasmus. In these cases the positive reaction has a prognostic signification. Its diagnostic value is subordinate because in all such cases the diagnosis can be made without it. 2, A topical diagnosis is impossible. In suspected cases the positive reaction and the exclusion of tuberculous disease in other organs may call us to repeated examinations and scientific observation, and so represent a not immaterial means of aid in diagnosis. In genital tuberculosis, which is almost exclusively secondary, the interpretation of the reaction is difficult. When there is tuberculosis of other organs the interpretation of the reaction may be very difficult. 3, A satisfactory explanation why a large percentage of persons who are clinically free from tuberculosis react positively cannot be given at present. This must be obtained from more extensive observation and a series of autopsies. A positive reaction is in no way demonstrative of the presence of tuberculosis. 4, A negative result in adults indicates with great probability the absence of tuberculosis. The proof of this likewise can be obtained only through a large series of autopsies.

4. The Ophthalmoreaction in Typhoid Fever. Meroni thus summarizes his results, obtained from the test suggested by Chantemesse of applying typhoid toxines to the conjunctiva for diagnostic purposes. I, The typhoid ophthalmoreaction may occur positively after the lapse of six hours not only in patients with typhoid fever, but also in those suffering from other diseases. 2, After twenty-four hours the positive reaction is met with in typhoid; a negative result indicates the absence of that disease. 3, With regard to the positive occurrence of the reaction it is to be considered that there are exceptions, such as the apparently very rare hypersensitive conjunctivæ, in which severe reactions may be induced by ordinarily indifferent substances. 4, Heating to 60° C. does not destroy the efficiency of the typhoid toxine. 5, The instillation of typhoid extract caused no harmful results in his experiments. 6, The ophthalmoreaction may prove to be of practical service, even though it may not prove to have an absolute diagnostic value,

5. Is the Conjunctival Tuberculin Reaction without Danger?—Görlich shows that positive reactions have been observed with relative frequency in fresh nontuberculous infections, and that they are sometimes followed by serious after effects. He does not consider that the test is one which should be recommended to the practising physician.

6. Cutaneous Inoculation of Tuberculin in Infants.—Morgenroth says that von Pirquet's cutaneous inoculation demonstrated that about five per cent. of the infants under one year of age treated at the clinic in Cologne between August, 1907, and the end of March, 1908, were tuberculous. He finds the cutaneous inoculation with undiluted old tuberculin without previous preparation to be reliable, free from after effects, and harmless to the children. It should be used by practitioners in every case in which the surroundings of the child are plainly tuberculous and a tuberculous disease of the child is to be decisive as to the diagnosis tuberculosis in in-

fants. The not always harmless and frequently unreliable subcutaneous inoculation he no longer uses. Whenever an infant reacts positively to the cutaneous inoculation an investigation of its environment for evident tuberculosis is necessary; almost without exception such a condition can be demonstrated, and as the tuberculous infection of infants very often arises from such surroundings, children during the first year of their lives cannot be removed too early from such dangerous environment. Tuberculosis in infancy he believes to be usually due to inhalation of human tubercle bacilli.

ARCHIVES OF PÆDIATRICS

July, 1908.

- I. Public School Education, By C. S. KEELEY.
 2. A Plan of Dealing with Atrophic Infants and Children,
- By H. D. CHAPIN.
 An Unusual Type of Acute Nephritis in Childhood,
 By J. L. Morse.
 Observations upon the Colored Children of Jamaica
- with Special Reference to Rickets and to Mongolian
 Spots,
 By A. E. Vironn.

 The Need of Postgraduate Instruction in Pædiatrics,
- By A. Calllé. 6. Recurring Empyema, By F. Huber. 7. Fatal Hæmontysis in Children. Report of a Case.
- 7 Fatal Hæmoptysis in Children. Report of a Case,
 By W. E. MAGRUDER.
 8. Sporadic Cretinism. Report of a Case,
 By C. F. Judson and W. F. Bradley.
- 1. Public School Education. Keeley considers his subject from the child's physical and from his mental development. In the present ten months of required schooling the control of the child has been transferred from the home to the school, with greatly increased responsibility for the latter. There are 18,000,000 school children in this country under sixteen years of age. Physical training in the schools of New York City is believed to be defective, and more than thirty per cent. of the children have defective vision. Medical inspection of schools, school hygiene, and the sanitary aspects of schools in general in this country leave much to be desired. The author believes that the curricula of the elementary and high schools include much more than are essential to ordinary life. One serious defect of the schools is the absence of religious teaching, also the absence of all teaching of the physiology of the sexual relations. Instruction should also be given as to the nature and influence of alcohol. Objection is offered to the system of prizes and rewards in schools. In general pupils in public schools are not being taught how to live.
- 2. A Plan of Dealing with Atrophic Infants. -Chapin summarizes his plan as follows: 1. Boarding the children in a district of the country in which the conditions are known to be healthful. 2. Constant attention to diet and hygiene on the part of the doctor and the nurse, who should be familiar with this class of cases and competent to deal with them. 3. The infants should be kept as long as necessary until feeding is regulated, and digestion and assimilation are sufficiently improved to result in an increase of weight. This work must be continued during all seasons.

 4. The training up in a given neighborhood of a number of foster mothers who by constantly taking infants into their homes, will become expert in handling them under conditions totally different from those which are offered by the best institutions, and far superior to them.

method has been tried by the Speedwell Society and has been very successful, many lives of neg-

lected children having been saved.

5. The Need of Postgraduate Instruction in Pædiatrics.—Caillé remarks that the young physician beginning his life of service is usually very deficient in his knowledge of pædiatrics. The present facilities for acquiring practical knowledge upon this subject, before going into actual practice, are extremely defective, and yet pædiatric practice signifies half of the general practitioner's work. The value of a postgraduate course is emphasized in the fact that one sees the patient in the dispensary, and then in the hospital ward, where the treatment is carried out in detail, until the termination in recovery or in death and autopsy. The author does not think that making rounds with a large class of students is of much value to the students. Amphitheatre clinics have advantages and drawbacks, the important thing is that the classes are small and the teaching directed to each individual. Great improvement in the teaching of practical pædiatrics is thought to be a requirement of the medical education of the present day.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

lenic Anæmia, Splenectomy, and Recovery, with Studies of the Blood Covering a Period of Seven Splenic Anæmia, By M. J. LEWIS. Clinical Notes on Laryngeal Tuberculosis,

By B. Robinson.
Primary Tuberculosis of the Mesenteric Glands. Report of Infections with Bacilli of the Human Type, By A. F. Hess.

Blood Cultures in Typhoid Fever,

By A. A. EPSTEIN.

The Uncertain Results of Suturing Nerves, By G. T. VAUGHAN.

The Pathogenesis of Tabes Dorsalis, By T

A Further Contribution to the Herpetic Inflammation of the Geniculate Ganglion Further Contribution to the Herpeut Hamanage of the Geniculate Ganglion. A Syndrome Characterized by Herpes Zoster Oticus, Facialis, or Occipitocollaris with Facial Palsy and Auditory Symptoms,

By J. R. HUNT.

The Present Status of Experimental Arterial Disease, By I. ADLER.

The Bacteriology of the Puerperal Uterus By W. R. NICHOLSON

1. Splenic Anæmia, Splenectomy, and Recovery.—Lewis records the important case of a young man who had been under his observation from the time of his birth, and who was operated upon for great enlargement of the spleen at the age of seventeen. He was profoundly anæmic and suffered a long time with vomiting of blood and hæmorrhage from the bowels. The diagnosis of enlarged spleen, gastric indigestion, and probable gastric or duodenal ulcer was made, and a posterior gastroenterostomy was performed. The bleeding ceased for a time and the general condition improved, but the spleen continued to enlarge, and splenectomy was performed five months after the operation on the stomach. Recovery resulted, and after three years the patient remained in excellent physical condition. The careful examination of the extirpated spleen resulted in the diagnosis of chronic perisplenitis and interstitial splenitis. results of splenectomy upon the blood are (1) a slight postoperative increase of red corpuscles and acute transitory hyperleucocytosis; (2) decrease of

hæmoglobin, which gradually increases to normal; (3) lymphocytosis of varying duration after four to eight weeks; (4) moderate eosinophilia after

many months.

- 2. Clinical Notes on Laryngeal Tuberculosis. -Robinson notes that laryngeal complications are present in many cases of pulmonary tuberculosis. They may begin as simple catarrhal trouble, but as soon as the mucous membrane is abraded infection may take place. If the condition is discovered in its initial stage it is often possible to prevent extension of the local lesion. The protective and curative treatment which are advocated consists in (1) rest for the larynx, (2) inhalations. The great value of rest has been observed in cases in which tracheotomy has been performed. Surgical measures are not highly approved of. Curettage is occacionally useful, œdema may be relieved by puncture or incision. Punching and excision of tissue are seldom desirable. Applications of lactic acid, orthoform, morphine, and iodoform are often useful. The best results, in the author's experience, have been obtained by means of a perforated zinc mask in the interior of which is a small sponge. sponge is moistened with a mixture of equal parts of creosote, alcohol, and chloroform, is worn constantly except at meals, relieves cough and pain, and very often mitigates a most distressing condi-
- Primary Tuberculosis of the Mesenteric 3-Glands .- Hess reviews the cases in which primary mesenteric gland tuberculosis has been reported and in which the type of bacillus has been differentiated. Such a review shows that in more than sixty per cent. of the cases the bovine type of bacillus is the causative factor. In children the bovine type of bacillus was present in the majority of cases, but in adults the majority of infections were caused by the human variety. As vet it is not possible to distinguish clinically or pathologically the two forms of tuberculosis. In children, as well as in adults, bovine or human tuberculosis may become limited and healed, and the bacilli may die. In contrast to the summary of cases which have been collected, the author reports two cases in children and one in a voung adult which were due to the human variety of bacillus as shown by the morphology, cultural characteristics, and virulence of the isolated strains.
- 4. Blood Cultures in Typhoid Fever.-Epstein states that his studies warrant the following conclusions: 1. The bactericidal influence of the blood in typhoid fever with reference to positive results in blood cultures has been overestimated. Great dilutions of the blood are not essential; a number of media will give good results. 2. The best results were obtained with two per cent. glucose bouillon, two per cent. glucose agar, and ammonium oxalate solution. 3. On the glucose agar the growth of a certain type of colony is diagnostic, and its absence points to the absence of the typhoid bacillus. 4. The bile media were less reliable than the above mentioned. 5. The author's results agree with those obtained by others though the cases were studied late in the disease. 6. The maximum results are obtained in the first and second weeks; there is not vet sufficient proof that the bacilli are in the blood

at the very beginning of the fever. 7. Protracted cases yield positive results if the continuance of the fever is not due to complications. 8. A continued fever lasting several days after the blood is free from typhoid bacilli will seldom prove to be typhoid. 9. A bacillamia in a relapse is due to a new invasion. 10. No definite conclusion can as yet be drawn as to the value of blood cultures in determining prognosis.

5. The Uncertain Results of Suturing Nerves. -Vaughan observes that the successful results from the suturing of nerves bear but a small proportion to the number of operations, and concludes that either the repair of nerves is uncertain and erratic, or that the technique is far from satisfactory. There is manifestly a difference in the regenerative power of different nerves, thus the trifacial will frequently reproduce itself after the removal of segments an inch in length, while the median or ulnar will obstinately resist reunion or regeneration however carefully sutured or favorably conditioned for repair. The prevailing opinion at present is that regeneration is due to proliferation of the cells in the sheath of Schwann. Secondary suture may be as successful as the immediate. Of forty-four operations by Murphy on different nerves there were but seven in which a successful result was obtained.

6. The Pathogenesis of Tabes Dorsalis .- Williams draws the following conclusions: I. Tabes dorsalis is a secondary degeneration in the posterior columns, due to chronic meningitis, usually of syphilitic origin. 2. The arrangement of the meninges surrounding the radicular nerve makes it susceptible to mechanical or toxic injury at that location. The unequal involvement of different fibres of the posterior root is probably due to some peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence. 4. The lesions tend toward resolution and arrest though the process may continue during the life of the individual. 5. With arrest regeneration tends to occur in the radicular nerve, that in the anterior root being more significant than the regeneration in the posterior. 6. The otherwise inexplicable vasomotor and cranial nerve symptoms and post mortem findings are thus shown to be necessary concomitants of the tabetic process. 7. The pathogenesis of the polyneuritic manifestations in tabetics is as yet unsettled.

Proceedings of Societies.

All DICAL SOCIETY OF NEW JERSEY

to His Forward Leitz second Annual Meeting, Held in that Mar in luming 18, 11, and 20, 1908.

The Propose Dr. Los ven J. Lin, at Newark, in the Chair,

The Oration in Medicine, by Dr. WILLIAM K. NEWTON, of Paterson, was entitled Joint Affections in Children Caused by Infectious Diseases. He gave two reasons for the ignorance of the general practitioner regarding infectious arthritis and for the lack of fulness and definiteness in the literature upon this subject—the custom of calling all cases of arthritis rheumatism and the attempt to group all these joint affections under the title of Still's disease. Infectious arthritis might be the result of any of the protonness with program organisms. He ex-

cluded those caused by tuberculosis, syphilis, and acute rheumatic fever, and confined his attention to the less understood cases of infectious arthritis, considering their ætiology, pathology, and symptoms.

Endothelioma of the Pleura.—In this paper Dr. HENRY S. PATTERSON, of New York, gave a review of the literature of the subject, including ninetysix cases. A malignant new growth of the pleura should be suspected when bloody fluid was found in the chest. A number of conditions must be excluded in making the diagnosis, particularly tuberculosis, aneurysm, and primary new growth elsewhere. Persistent bloody fluid, not tuberculous, with progressive emaciation, usually accompanied with fever, made up a suggestive picture. Sometimes cells were found in the fluid. The only absolutely sure method of diagnosis, however, was by making a microscopical examination of tissue that had come to the surface by extension or metastasis. The disease must be treated at first by aspiration. The skin might be frozen with ethyl chloride, care being taken to allow the frost to wear off before puncturing. Otherwise the needle would have to go through a tough, leathery laver and run the chance of bending or breaking. The subsequent pain was relieved by local applications and by the coal tar products, with or without morphine. In the last stages morphine to the point of toxic effects was indicated. Symptoms referable to metastasis must be treated as they arose. The only justification for surgical treatment was the presence of a purulent effusion.

Dr. PHILIP MARVEL, of Atlantic City, asked whether the malignant growths of the pleural cavity were more prone to metastases than similar tumors elsewhere.

Dr. CHARLES A. ROSENWASSER, of Newark, thought it important to do all that could be done to afford relief in cases pronounced inoperable, and asked whether Dr. Patterson's experience with methylene blue in cases of inoperable sarcoma had been that the patients had been made more comfortable by its use, and whether life had been prolonged.

Dr. N. L. Wilson, of Elizabeth, said that in sarcoma of the antrum he thought it better to let the tumor alone and simply keep the patient under the

influence of an opiate.

Dr. PATTERSON said that his case was the ninth that had appeared on record in the literature of this country. He should not have been able to recognize the condition had it not been for an article of Dr. Delafield's reporting similar cases. The diagnosis thus made was confirmed at autopsy. Theoretically one would imagine that the pleura, being so rich in lymphatic drainage, would form a primary site from which metastases would be very frequent and extensive; but, on the contrary, the cases in which metastasis was mentioned represented only about twenty per cent. of the total. He had had no experience with the use of methylene blue in this class of cases; and he stated that his reference to malignant growths of the antrum was not in relation to operative interference, but simply as one of the means of climinating primary growths elsewhere than in the pleura.

The Diagnostic Importance of Vomiting in

Childhood was considered in a paper by Dr. ARTHUR STERN, of Flizabeth, with regard to cerebral vomiting, gastroenteric and peritoneal vomiting, prodromal and initial vomiting in acute infections, vomiting in intoxications, vomiting after excitement, vomiting in cardiac insufficiency, vomiting in cases of general neuropathy, and vomiting from miscellaneous causes.

Dr. HENRY L. Coit, of Newark, commended the courage of Dr. Stern in bringing before the society such a common subject as vomiting, and said that it seemed to be the tendency of the general practitioner to ascribe all manifestations of disease to remote causes, the research laboratory being called in to answer all questions of importance. thought that all the papers should not come from the research laboratory or the experiment station. The importance of vomiting had been much magnified, and incorrect diagnoses had been made from it. He called attention to three classes of diseases in which vomiting was a common symptom: Cyclic, or recurrent vomiting he did not consider so frequent as was believed. He had seen cases in which this diagnosis had been made, but in which a good dose of calomel with a regulated diet and possibly some subsequent intestinal antisepsis had cleared up the condition. With congenital pyloric stenosis, a term that one was apt to apply to persistent vomiting in infants, had been grouped another disease known as pyloric spasm. Vomiting was a symptom of so many diseases that it had very little diagnostic value when isolated from other symptoms.

Dr. P. Du B. Bunting, of Elizabeth, stated that in the boroughs of Manhattan and the Bronx, New York, the lives of twelve thousand children were saved annually by the recognition of the diagnostic importance of vomiting. It was not a disease, but a symptom, and must be considered in connection with the other symptoms present. When it was a prominent symptom, the physician was likely to direct his thought to the stomach; but before looking to that organ for the cause of the vomiting, everything else that might produce it should be eliminated.

Dr. J. P. REILLY, of Elizabeth, said that he would mention only the class of cases in children in which there were periodical attacks of vomiting, but in which no definite lesion was discoverable. If, on close observation during one of these attacks, the physician's hand was placed over McBurney's point, he would gain the reputation of being able to diagnosticate appendicitis in infants.

Dr. D. E. ENGLISH, of Milburn, said that chills, fever, and vomiting were usually considered the three important initial symptoms of scarlet fever; but that, of five hundred cases in which this diagnosis had been made, initial vomiting was present in less than fifty per cent. He believed that many of the cases called cyclic vomiting were simply migraine in the infant. In many cases calonel alone would relieve the condition, but he had been giving this drug in combination with sodium with better results than when the calomel was used alone. He had also followed the suggestion of Dr. Coit in regard to dropping the use of boric acid solution in the nursery.

Dr. Wilson believed that most of the cases of vomiting in children afflicted with adenoids were

due to the vitiated and increased secretion going down the back of the pharynx, rather than to the mere presence of the adenoid or the hypertrophied tonsil

The Present Status of the Milk Problem,—Dr. ALEXANDER MCALISTER, of Camden, said that his paper had been written with the object of urging the use of only ideal whole milk for the very young and delicate. Simple methods of dilution or modification, possible in any household, yielded superior results, because of the greater ease with which fresh whole milk could be digested. In every market this ideal whole milk might be obtained for the price of the searching for it; and the market that fell short in this respect could not be shown up too early or too relentlessly.

Dr. Corr said that the movement for pure milk in the United States was supposed to have had its origin in the Medical Society of New Jersey, at a meeting in 1889. It had grown to such proportions that an attempt was now being made to get medical, as distinguished from municipal milk. The government distinguishes three varieties—certified milk, municipal, or inspected, milk, and other milk. The last should always be cooked and not simply pasteurized.

Dr. ROSENWASSER stated that it had been ascertained by the Dependency and Crime Commission that feeding with impure milk in infancy produced dependency in later life, and remarked that in this commission the Medical Society of New Jersey might, at the expense of the State of New Jersey, find a means to carry out investigations and to save the lives of babies and keep them in good health.

Dr. Henry Chavanne, of Salem, said that the cow was now legislated in New Jersey to a standard that was impossible, except with thoroughbreds; and that not a dairy in the State was allowed to send to market milk that did not reach this standard. As no cows except thoroughbreds would produce milk of this standard naturally, the animals were fed on an artificial diet that stimulated them to the highest point of secretion. This resulted in a sacrifice of the proteids of the natural economy, so that not five per cent, of the cows in New Jersey could raise their own offspring without producing diarrhea in them. If the milk of a cow would not nourish its own calf, it was impossible for the more delicate organism of the child to be sustained by this secretion.

The Annual Address by the President was on the subject of medical expert testimony. Dr. Ill expressed regret that the governor of New Jersey had seen fit to appoint but one medical man on the State Board of Health, and this one a retired physician. He stated that the society was working under a disadvantage, owing to a lack of competent legal advice, and suggested that it engage counsel to defend the members in malpractice suits and to do other necessary legal work. He thought that damage suit expenses should be paid by the society. because the accused practitioner was defending not only himself, but every physician in the State. The difference between an ordinary and an expert witness was that one simply stated a fact and the other expressed an opinion. An ordinary witness who did not speak the truth might be presecuted, but an expert could not be reached by the law for expressing a false opinion. The opinions of medical experts carried no weight, because even those that were honest were discredited by what had become a pernicious system; and Dr. Ill thought that the law should be amended so as to make such scandalous conflicts of opinion impossible. The man who sold his opinion should not be allowed to remain a member in good standing in the society. The profession should put an end to a system that was already dead in that it had outlived its usefulness.

The Oration in Surgery, entitled When Shall the Physician Distrust his own Judgment in Surgical Matters? was delivered by Dr. MAURICE H. RICHARDSON, of Boston. It was most important, he said, that the diagnosis be made early enough to check the disease in the beginning; and upon the shoulders of the physician, because he was the first in the field, rested the responsibility as to whether it should be treated medically or surgically. The errors of surgery were often the result of a too favorable prognosis based upon a wrong diagnosis; and the largest proportion of these wrong diagnoses were due to physicians who were not experts in the diagnosis of tumors. The physician should distrust his own judgment when one decision meant death and the other recovery. If there were strong possibilities of a serious or fatal lesion that the differential diagnosis could not rule out and for which the only hope lay in immediate surgical intervention, then must the physician distrust his own opinion, even if that opinion was favorable. It was common for the surgeon to shift to the physician the responsibility for surgical failure. When there was any doubt as to the placing of the responsibility, the surgeon should be eager to assume the burden. There were many cases, also, in which the physician should distrust not only his own judgment, but that of the surgeon. He should distrust the judgment of any surgeon who had failed to make a thorough examination. Surgeons did not always appreciate the weight of responsibility that the physician felt toward the family of his patient in recommending an operation. The more intimate became the association between these two branches of medicine, the better would be the results.

The Influence of Overweight and Underweight on Vitality was the title of a paper by Dr. Brandreff Symonds, of New York. He said that the influence of overweight in determining an increased mortality was less varying than that of some other conditions, such as age, sex, nativity, etc.

Dr. RICHARD C. Newton, of Montelair, said that in looking over the lists prepared by the Actuaries' Society of America he had found that, according to these statistics, in obese subjects heredity apparently had little influence in determining longevity. This seemed to indicate that obesity was a predisposing cause of death. As an extra pound of fat meant an extra mile of capillaries, it was not surprising that fat persons had weak hearts. Commercial travelers were very good risks, outliving their expectation; while the well to do and the well fed did not live so long as the longevity tables said that they should. Probably the reason for the long life of commercial travelers was that traveling itself is when the said to the commercial travelers was that traveling itself is

cent. made a risk bad. Below thirty years of age, these people were good average risks; but after that, if they increased in weight, they became very bad risks. The heart and kidneys stood the strain until middle life, and then began to give way. Man's climacteric was fifty-four years, and many men dropped over at about that age with apoplexy, heart disease, etc. Stout men were better risks in England than in America.

Dr. Alfred C. Woodhull, of Princeton, said that the standard as suggested in Dr. Symond's paper was differently expressed from the standard in the military service, which was more convenient for common use. Under the insurance plan, the increase was a certain percentage, and one had to calculate percentages to obtain it. Under the plan adopted in examining recruits for the military service, if the applicant was up to the height of five feet seven inches, his weight should be about two pounds to the inch; and five pounds must be added for every inch above that height. Overweight and underweight amounted in themselves to little or nothing, being merely indices of certain conditions that led to unfortunate results. Personally, he would lay much more stress upon the vital capacity and the chest expansion. Discharges of any character, whether a pure hæmorrhage or a serous discharge, were more likely to do damage in very fat persons than in those that were not so stout.

Excision of the Stomach for Carcinoma.—Dr. Edward Staehlln, of Newark, reported a case. The tumor involved the pylorus and was as large as a good sized Bartlett pear. The mass was removed, with the greater part of the stomach, and the remaining part of the stomach was fastened to the intestines by an end to end anastomosis. The patient made a rapid recovery. The tumor of the pylorus was proved by the pathological report to be a scirrhus. A small mass on the greater curvature was a myoma composed of smooth muscle fibres. The patient was now in excellent health. Her weight and appearance were normal, as well as her capacity for work. Her diet was general, but she ate frequently and little at a time.

Dr. Reilly said that he should like Dr. Staehlin to give the results of the chemical analysis that had been made before he performed the operation. He then referred to the difficulty in determining the condition of the stomach from any analysis that was at the command of the profession at the present time. He had in mind a case that apparently was one of carcinoma of the stomach. The diagnosis was, however, disputed by a good clinician, on the ground that no tumor was palpable. Dr. Reilly thought that a diagnosis should not be made on this ground alone. He believed that the diagnosis of carcinoma should be made, even with the absence of a tumor, when all the symptoms known to make up a cancerous condition were present. If any good was to be done by operation, the physician must be able to make out the diagnosis long before the appearance of a tumor.

Dr. James T. Wrightson, of Newark, thought that the fact that the patient had had five eighths of her stomach removed, and yet the digestive processes were carried on so actively that she had regained her health, vigor, and ilesh, opened up a

fresh field for thought in regard to the digestive

Dr. Staehlin said that in his case there was a tumor, and the analysis of the stomach contents had proved positive. Even had the analysis been favorable, he should have concluded that an operation ought to be performed. On having the stomach contents analyzed, he had frequently found that such analyses were not very reliable. In cases with such a severe manifestation of malignancy as that in Dr. Reilly's patient, Dr. Staehlin would suggest an exploratory incision, unless the patient's condition was cachectic, and he felt sure that something could be accomplished by operating, because sometimes the stomach was so high up that, even though a tumor existed, it could not be felt.

Tetanus. Its Prevention and Treatment.—In a paper thus entitled Dr. J. HARRIS UNDERWOOD, of Woodbury, said that the most reliable germicide in these cases was a solution of bichloride of mercury. Pure carbolic acid should not be used, because it sealed up the bacilli by coagulating the albumin of the tissues. Patients with superficial wounds should at once receive an injection of 10 c.c. of antitetanic serum. The treatment after the development of the disease was directed to controlling spasm, overcoming the toxines, and supporting the patient's strength until the symptoms had subsided. For the first, chloral and bromides were valuable; for the second, the serum. Two cases of cure in patients with very severe attacks were reported. In the Cooper Hospital, Camden, the mortality had been eighty to ninety per cent. before the use of antitetanic serum,

and forty per cent. since.

Dr. George E. Reading, of Woodbury, said that the value of the serum treatment for tetanus was best shown by the statistics of the St. Louis Hospital, where, prior to 1907, injections were not used until the symptoms of the disease had developed. In that year they began to inject 10 c.c. of antitetanic serum in every suspicious case. Formerly there had been a great many cases followed by death after every Fourth of July; but this year there had developed no cases of tetanus. Even negative evidence as comprehensive as this, said Dr. Reading, acquired a great deal of weight. thought it would be well for all hospitals to adopt the plan of giving a preventive injection to each patient whose case might be open to suspicion. In cases in which serum treatment was not available, Dr. Reading had seen good results from carbolic acid treatment. The statistics from its use abroad were good, and he thought that if it was more generally tried here, they might be good in this coun-He had seen a number of suspicious cases treated by thoroughly washing out the wound with peroxide of hydrogen, and none were followed by tetanus.

Dr. J. H. Bradshaw, of Orange, considered it unfortunate that in the treatment of tetanus after the symptoms had developed the remedies given were almost as dangerous as the disease. The huge doses of morphine, chloral, and other drugs administered would often kill a person in good health.

Dr. Wrightson said that the use of the serum certainly did cure some patients. In one case treated at the City Hospital of Newark, he had no doubt that the outcome without this treatment would have

been fatal. The cost of the serum used in this one

The Annual Address by the Third Vice-President, Dr. Thomas H. Mackenzer, of Trenton, was a brief review of hernia as understood and treated at different epochs by the past and present masters of surgery.

Acute Intestinal Obstruction was the subject of a paper by Dr. Robert M. Curts, of Paterson, who confined himself to a few interesting pointsthe importance of early recognition of the condition and of surgical treatment within thirty-six hours; the relative frequency of the condition, there being one death from it in every three to five hundred deaths from all causes; the helpfulness of having a good mental picture of the intestines; the mortality in the different forms of acute obstruction; the ages of the patients in the different kinds; and where the knowledge of the physician ended and that of the surgeon began. The prognosis was always grave, the only hope being in surgical treatment. Researches had given little clinical aid to the diagnosis. Acute intussusception was the form most readily diagnosticated, being the only one in which the pathological and anatomical relations could be made out with any degree of certainty. The treatment for it was by immediate abdominal section. It was impossible to make a diagnosis of any particular type before an operation, and quite unnecessary. Attempts to do so only delayed what should be an early procedure. The two most important symptoms were severe abdominal pain and inability to pass flatus. The first was common in other visceral diseases, but the second was found only in acue intestinal obstruction.

Dr. T. W. HARVEY, of Orange, said that no condition required more accurate and certain diagnosis or more generous early surgery than acute intestinal obstruction. The diagnosis was made much less frequently to-day than twenty years ago, and operations for its relief were less common now than formerly. The reason was that many cases of abdominal disease that were formerly allowed to go on to obstruction were now cured before that symptom appeared, and the proper treatment of others relieved the obstruction. On the other hand, a new fruitful cause of obstruction was presented by the effects of laparotomy. Dr. Harvey agreed with Dr. Curts that an operation, to be successful, must be done in the first twenty-four hours; and he did not see the advantage of first attempting any other method of forcible reduction. The most important point to decide was that of whether one should do a complete or an incomplete operation. Another point to decide was what should be done to insure the return of normal peristalsis, and just how much evacuation of the bowel would be required to relieve the

Dr. James S. Brown, of Montclair, said that a phase of the treatment of intestinal obstruction to which the attention of the society should be called was that of distention. A Moynihan's tube was placed in the intestines, which were then strung on it. By this means, instead of there being a mass of distended loops of intestine, the bowel was flat. The abdomen could then be opened with comparative ease to seek for the cause of the obstruction.

The Clinical Features and Treatment of Acute

Perforating Gastric and Duodenal Ulcer.-In this paper Dr. Ellsworth Eliot, Jr., of New York, reported ten cases, eight duodenal and two gastric. The two forms were quite similar. Both were occasionally multiple. Perforation was also often multiple. The cases of multiple perforation of the stomach might be divided into those in which there were several perforations in the same ulcer and those in which several perforations occurred in more than one ulcer. In most cases of perforation of an ulcer on the anterior wall, if there was another perforation, it would be found on the posterior wall, just opposite the one on the anterior. The condition was rarely recognized in time for an operation to be successful. The principal symptom was excruciating pain, usually situated between the costal margin and the umbilicus. The most important physical sign was abdominal rigidity, which was constant. Leucocytosis was of particular interest in the diagnosis. In most cases without perforation it is decidedly above the normal; and in perforation it is doubled. Laparotomy was the only rational method of treatment for perforation, and should be performed at the earliest possible moment. The incision should be made at the maximum point of rigid-·ity. Many patients were operated upon under an erroneous diagnosis of appendicitis. This did not make much difference, because the operator could tell that he was not dealing with an appendix case as soon as the abdomen was opened, on account of the character of the fluid. If gastroenterostomy was necessary on account of stenosis of the pylorus, it was better to do it subsequently, and not at the time of the closure of the perforation.

Dr. Gordon K. Dickinson, of Jersey City, said that the medical profession was intensely interested in the pathological diagnostic points in gastric and duodenal conditions. The surgeon was dependent upon the average practitioner for diagnosis, and many a physician would make a diagnosis of dyspepsia and let the condition run on indefinitely. The patient therefore came to the surgeon in an unsatisfactory condition. Every anæmic woman and every person with a chronic, continuous, or relapsing abnormity of the stomach should be so treated as to minimize the possibility of the formation of an ulcer. If the symptoms continued for any length of time, the surgeon should be consulted.

Dr. James S. Brown, of Montclair, said that the symptoms of gastric ulcer and perforation of duodenal ulcer were acute only in typical cases. Unfortunately, however, there were many cases with symptoms of spreading peritonitis in which one was undecided whether the symptoms were due to perforation of the duodenum or pylorus or of the appendix or gallbladder. He thought that even the cases that one was not confident were due to a ruptured duodenal ulcer had about them something that made one doubt that the condition was due to a rupture of either the appendix or the gallbladder. An incision that would cover the field in any case should be made. Pain in the abdomen was relative, one patient suffering severely and another not so much. When the abdomen was distincted and there was a lack of liver flatness, a little difficulty would arise in the diagnosis. The cases in which the abdomen was spenied late, only a small amount of fluid being found, with immense distention, were rapidly fatal.

Dr. Harvey thought it interesting that for the second time during the meeting the operation of gastroenterostomy, which at one time had threatened to connect everyone's stomach with his intestines, had received a check. While he considered that there were legitimate and proper indications for this operation, he doubted if it should be used for drainage or for a bleeding ulcer.

Dr. Gray said that the literature regarding the subject was meagre and the number of cases small. For this reason, one case might be of interest. He had made the failure in diagnosis mentioned in the paper, that of taking a case of perforating gastric ulcer on the anterior wall for one of appendicitis.

Remote Pain Following Abdominal Operations.—In this paper Dr. WILLIAM E. DARNALL, of Atlantic City, confined his attention to the pain that persisted after the patient had left the hospital and had come under the care of the attending physician, who was worried because the operation had not relieved the patient as he had hoped. This pain usually disappeared gradually, but sometimes persisted indefinitely. When a second operation became necessary, observation would show that the condition was due to adhesions. In trying to remove pathological structures the surgeon sometimes forgot that it was important to consider the future welfare of the patient and try to prevent the occurrence of these symptoms following the operation. The bowels should be handled as little and as gently as possible, and should be protected with compresses moistened with hot salt solution. Every effort should be made to eliminate the possibility of the formation of postoperative adhesions. Every clot left might become an organized adhesion or the focus of infection. Abdominal surgery should not be attempted unless the muscles were relaxed and pliable. The incision should be made so long that it would not need to be stretched with retractors. Any raw surface in the abdomen left exposed should be carefully covered. Patients measured the gravity of their condition by the amount of pain they suffered, and if the adhesions produced more pain than the original condition did, they felt that the operation had done no good.

Dr. Elsmore Stites, of Bridgeton, said that in estimating the intensity of pain or its diagnostic value one must remember that reaction to it varied almost indefinitely in different individuals. seemed to him that one should consider whether the pain was a continuation of a previously existing one or was an entirely new symptom. He thought that its character should also be considered and its location, together with the presence or absence of fever. Severe pain of any other than the neurotic form seldom presented itself as a sole symptom, and it seemed to him that when other symptoms of the presence of adhesions were wanting, an operation for the relief of postoperative pain should not be undertaken. The stimulus of an operation, added to the existing instability of the nervous centres, could not fail to awaken many reflexes.

Dr. DARNALL said that all must appreciate the fact that pain was too big a subject to make a single reference to it, for it would take too long to consider even a single group of its causes. The subject took in the whole field of medicine and surgery. Neurotic pain itself is a very wide field, particularly

that associated with hysteria and that in morphin-

The President said that his experience had been that such operations never produced pain unless they displaced an organ so as to impair its mobility.

Dr. Gray thought that in opening the abdomen for the purpose of relieving adhesions, new ones were likely to be produced, just as the adhesions had been formed in the first place.

Reflex Gastric Symptoms a Factor in Surgical Disease of the Abdomen.—In this paper Dr. John P. Reilly, of Elizabeth, spoke of the importance of such symptoms in the early recognition of pathological lesions. They were present at times when the lesion was not in the stomach, but elsewhere in the abdomen.

Dr. Gray had often wondered why a deformed or diseased appendix, particularly in a chronic case, gave rise to gastric pain or other gastric symptoms, and why a gallstone condition with adhesions about the biliary system caused gastric symptoms, including pain. He had sometimes thought that the sympathetic system might be more chargeable with the symptom complex than any other structure, for he believed it possible that the irritation of a diseased appendix or a diseased gallbladder, through the control of disturbances of circulation in the sufferer, might be able to produce the gastric disturbance. In his opinion, exploratory incision should be a last resort, and should not be undertaken lightly, because it is not free from danger. He thought, however, that the value of exploratory incisions must be recognized. When a patient gave a history of having had for a year or more gastric disturbances that had been treated by all available internal methods of treatment without success, one was warranted in opening the abdomen and making an inspection of the stomach.

Dr. EMERY MARVEL, of Atlantic City, said that in no other place in the body were so many reflexes manifested as in the stomach. The middle coat was a development of the plexus of Auerbach, which supplied and controlled the power of the muscle wall of the gastrointestinal tract. The pylorus and the ileocæcal valve were stronger than the rest of this, the former being the stronger of the two, and any irritation was likely to manifest itself there.

(To be continued.)

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Quain's Elements of Inatomy. Editors: EDWARD ALBERT SCHÄFER, LL. D., Sc. D., F. R. S., Professor of Physiology and Histology in the University of Edinburgh: Johnson Symington, M. D., F. R. S., Professor of Anatomy in Queen's College, Belfast; Thomas Hastie Bryce, M. A., M. D., Lecturer in Anatomy, University of Glasgow. In Four Volumes. Vol. I, Embryology. By T. H. Bryce. Illustrated by More than 300 Engravings, Many of which are Colored. Eleventh Edition. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1908. Pp. viii-275.

It is only in recent years that the great value of embryology in medicine has been widely recognized; now, however, there will be few to wonder that an entire volume of this great work is devoted to it.

We do not believe that it can be learned thoroughly from books, but certainly Dr. Bryce has here given us as clear an exposition of this difficult subject as it is possible to make for those who are not themselves versed in its literature and familiar by their own observation with its manifestations. Even this treatise must be read again and again by the student if he expects to remember more than the simplest outline of the science. Fortunately, the study is fascinating, though opportunities for its satisfactory prosecution are not at the command of most medical men. However, those who have had a good training in microscopy can do much in a practical way under the guidance of such an excellent teacher as Dr. Bryce, whose precision of description is admirably supplemented by such beautifully clear engravings as those with which this volume is freely supplied. The work of the publishers is in every respect deserving of the greatest praise. It is fitting that such a classical work as Quain's should be kept up by the three great teachers whose names appear upon the title page of the eleventh edition. more than half a century it has been a favorite, and it still deserves to hold its position.

Gayetés d'Esculape, Par les Drs. Witkowski et Cabanès. Paris: A. Maloine, 1909. Pp. 485. (Price, 5 francs.)

One of the authors of this amusing volume (Dr. Cabanès) is known to some extent as an historian of the odd and quaint in medicine, and his collaborator, Dr. Witkowski, is the author of several works dealing with antiquities in medical history. The volume under review forms one of a series of investigations into the quaint and curious in medical Nearly half of the book is taken up with a Rabelaisian account of the origin and development of the enema syringe, which will probably appeal especially to the French mind, characterized as it is by the modern Gallic wit, but it is to be feared that the healthy Anglo-Saxon intelligence will revolt at some of the descriptions and pictorial illustrations, though Hogarth, among English caricaturists, has been drawn upon for some satirical engravings, and the text is replete with sardonic reflections on both the physician and the apothecary, many humorous anecdotes being included. To those who like this sort of thing the book will prove of interest, but beyond the illustrations, which are classical in some respects we do not see how the medical historian is likely to profit by it.

Bericht über den xiv. internationalen Kongress für Hygiene und Demographie. Berlin, 23-20 September, 1907. Bänder II, III, IV. Mit General-Namen-und Sach-Register. Berlin: August Hirschwald, 1908.

These three volumes have quickly followed volume I, which were reviewed in the June 13th number.

Volume II contains the reports of the Sections in Microbiology and Parasitology, in Dietetic Hygiene and Hygienic Physiology, in Hygiene of Childhood and Schools, in Professional Hygiene and Care of the Working Classes, in Combating Infectious Diseases, and in the Care of the Sick. The United States is represented by M. P. Ravenel, of Madison, Wis., with a report on Infection by Food and Contact, the Alimentary Canal as a Portal of Entry for the Tubercle Bacillus; H. W. Wiley, of Washington, D. C., on Pure Food Legislation in the United States; Simon Baruch, of New York, Baths for

the Laboring Class; H. M. Biggs, of New York, on The Part of the Municipal Authorities in the Combat with Tuberculosis; and Dr. Strong, of Manila, on Protective Inoculation Against Plague.

Volume III, divided into two parts, gives the reports of the Sections in Hygiene of Dwellings, Townships, and Waters; in Hygiene of Traffic and Life Saving; in Military, Colonial, and Naval Hygiene: and in Demography. Dr. R. G. Freeman, of New York, reports on the control of milk.

In volume IV we find the discussions and lectures of the sections. V. C. Vaughan, U. S. A., read a paper on Proteid Susceptibility and Immunity, and another on Experimental Immunity to Colon and Typhoid Bacilli; G. M. Kober, of Washington, D. C., read one on the Production of Pure Milk for Infants. Louise G. Rabinowitch, of New York, presented one, in French, on the Method of Reviving Electrocuted Animals; G. M. Kober, of Washington, D. C., furnished one on Dwellings for Laborers; and W. H. Tolman, of New York, wrote on the American Museum of Safety Devices and Industrial Hygiene. This volume contains also a general index of names, and another of the subjects under discussion.

The five volumes give a well defined review of the congress, and they are carefully edited and

well got up.

Diseases of Injuncy and Childhood. Their Dietetic, Hy-gienic, and Medical Treatment. A Textbook Designed for Practitioners and Students in Medicine. By Louis for Practitioners and Students in Medicine. By Louis FISCHER, M. D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City, etc. Second Edition. With 303 Illustrations, Several in Colors, and Twenty-seven Full Page Half Tone and Color Plates. Philadelphia: F. A. Davis Company, 1908. Pp. xxiii-979. (Price, cloth, \$6.50; half morocco, \$8.)

It was only six months after the first appearance of Dr. Fischer's excellent textbook that this second edition was published, a fact that clearly shows that the work has been highly appreciated by the profession. Prominent among the additions in this issue is the section on hypertrophic pyloric stenosis, a condition which the author thinks is not so rare in infancy as is commonly supposed. The subject is well handled. We do not find that glandular fever is considered, but that affection may easily be overlooked, or possibly Dr. Fischer is one of those who do not admit its existence as a separate disease. The book is in every way to be commended, and we expect to see it appear in still other editions.

Books, Pamphlets, Etc., Leccived.

The Arr and V. subation of Subways. By Goorg. A Sopier. Ph. D., Member of the American Society of Civil Engineers, the American Chemical Society, etc. First Edition. First Thousand. New York: John Wiley & Sons, 1908. Pp. 244. (Price, \$2.50.)

Essentials of Refraction. By Thomas G. Atkinson, M. D., Author of Applied Physiology, Associate Professor of Physiology and Neurology in the American College of Medicine and Surgery, Chicago, etc. Chicago: G. P. Enpell and & C. 1907. Pp. 235. (Price, \$1.25.)

The Baby. Its Care and Development. For the Use of Mothers. By Le Grand Kerr, M. D., Professor of Diseases of Children in the Brooklyn Postgraduate Medical School, etc. Illustrated. Brooklyn: Albert T. Huntington, 1968. Pp. 1960. The Air and Vestilation of Subways By George A. Soper.

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Points of Practice in Maladies of the Heart. Lumleian

Points of Practice in Maladies of the Heart. Lumleian Lectures at the Royal College of Physicians of London. By James Sawyer, Knt., M. D. (Lond.), F. R. C. P., F. R. S. (Ed.), F. S. A., Consulting Physician to the Queen's Hospital, Lately a Professor of Medicine in the Queen's Hospital, Lately a Professor of Medicine in the Queen's Hospital, Lately a Professor of Medicine in the Queen's Hospital, Lately a Professor of Medicine in the Queen's Hospital, Lately a Professor of Medicine in the Queen's Hospital, Lately and Practical Dictary Guide for the Household. By Amy Elizabeth Pope, Instructor in Practical Nursing and Dietetics in the Presbyterian Hospital School for Nursing, etc., and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, N. Y. New York and London: G. P. Putnam's Sons, 1908. Pp. x-249.

Bienmial Report of the Board of Health of the City of New Orleans. 1906-1907. Pp. 126.

Transactions of the American Society of Sanitary and Moral Prephylaxis. Volume II, 1908. Pp. 246.

Gayetés d'Esculape. Par les Drs. Witkowski et Cabanès, Paris: A. Maloinc, 1909. Pp. 485.

Di alcune modificazioni citologiche nel sangue dei fratturati. Ricerche cliniche e sperimentali. Del Dott. Giuseppe Bernardi (Assistente) Pisa: E. Mariotti 1002.

turati. Ricerche cliniche e sperimentali. Del Dott. Giuseppe Bernardi (Assistente). Pisa: F. Mariotti, 1907. Pp. 105.

Miscellany.

Convalescent Homes in Boston, New York, and Philadelphia.--Morris Loeb, of New York, gives a good list of such institutions in Charities.

August 1, 1908:

Boston and Vicinity.—Convalescent Home of the Massachusetts General Hospital; 33 beds; M. and F. Convalescent Home of the Boston City Hospital; 34 beds; F. and C. Convalescent Home of Massachusetts Homeopathic Hospital; 20 beds; F. and C. Convalescent Home of Children's Hospital; 100 (?) beds; C. St. Luke's Home for Convalescents; 26 beds; F. Milton Home for Convalescents; 23 beds; F. and C. Children's Island Sanatorium; 30 (?) beds; S. C.

New York and Vicinity.-St. Andrew's Convalescent Hospital; winter, 35 beds; summer, 24 beds; F. and C. New York Home for Convalescents; 21 beds; F. Isabella Heimath; 28 beds; M. and F. St. Phoebe's Mission House; 12 beds; F. St. John's Guild; F. and C.; W. Convalescent Home of Henry Street Settlement; The Rest, Grand View on Hudson; 11 beds. St. Eleanor's Home; 44 beds; M., F. and C. Solomon and Betty Loeb Memorial Home for Convalescents; 100 beds; M., F. and C. St. Elizabeth's Convalescent Home (St. Vincent de Paul); 40 beds; F. and C. Caroline Rest; 100 beds; F. and C. Blythedale; 35 (?) beds; F. and C. The Presbyterian Rest; F. Health Home of the Children's Aid Society; 200 beds; M., F. and C. Convalescent and Fresh Air Home; 68 beds; M., F. and C. Holiday Farm for Convalescent Children; 17 beds; C. Riverbend Home for Convalescents; 16 beds; C. The Robin's Nest; 22 beds: C. Babies' Convalescent Home.

Philadelphia and Vicinity.—University, Episcopal, and Jefferson Hospitals maintain convalescent wards within the hospital grounds, which do not seem to fit into the scope of this inquiry. Richardson Home for Convalescents; 75 beds; M., F., and Seaside Home for Invalid Women; 100 beds; F. Children's Sea Shore Home; not exclusively a home for convalescents, but receives large numbers of this class. Jewish Seaside Home for Invalids:

(9) (2) beds; M., F., and C.

Dr. Elias J. Marsh.—Of Dr. Elias J. Marsh, who died at Paterson, N. J., at the end of his seventythird year, August 3d, an army officer of Civil War service writes: "He entered the Army Medical Corps in the spring of 1861 and served always with credit and, on occasions, with distinction until 1870. when to the disadvantage of the service he reentered civil life by resignation. Field duty, chiefly with the cavalry, and, soon after the war, at West Point brought him in contact with numerous officers, by the survivors of whom, and of the cadets of that period, he must be remembered with respect for his ability and affection and admiration for his character. He resigned when on the Pacific Coast and settled in Paterson, where his professional skill, his clear judgment, and his kindly and public spirited disposition soon made him conspicuous. He became in civic as well as in medical affairs a real leader, not through self seeking, but by natural selection. For many years he was a medical director of the Mutual Life Insurance Company of New York, an important office which he admirably administered entirely free in fact and in suspicion from any taint of the scandal which ultimately attacked that corporation. Connection with that great New York company did not interfere with his public work in Paterson as a director of the Danforth Public Library, as an organizer and administrator of a general hospital there, nor with numerous other phases of civic activity. He carried into civil life an excellent development of the better military methods, and, while depriving the army of qualities which ultimately would have developed into those of a broad and vigorous administrator, those were not lost to the world. Dr. Marsh always maintained an affection for the military service and for his old companions, and the army should regret the departure from this life of one who served it well when good service was important, and whose later life reflected credit upon his earlier connection with military affairs, Marsh during the last year of the war was on General Sherman's staff. He was often referred to as "the man who stopped the war," for the reason that he conveyed the orders of General Grant to "stop firing" while Grant and Lee were having the conference which resulted in the termination of the conflict .- Army and Navy Journal.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow tever, elviera and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week

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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 5, 1908:

BEAN, L. C., Acting Assistant Surgeon. Granted leave of absence for three days from August 5, 1008.

Carrington, P. M., Surgeon. Detailed to represent the service at the International Congress on Tuberculosis, to be held in Washington, D. C., September 21 to October 3, 1908; granted an extension of leave of absence on account of sickness.

CLARK, T., Passed Assistant Surgeon. Granted leave of absence for one day, July 18, 1908, under paragraph 191, Service Regulations.

CLEAVES, F. H., Acting Assistant Surgeon. Granted leave of absence for twelve days, from August 3, 1908.

CREEL, R. H., Passed Assistant Surgeon. Granted leave of absence for two months, from August 3, 1908, amended

to be effective from August 31, 1908.

Delgado, J. M., Acting Assistant Surgeon. Granted leave of absence for one day, July 30, 1908, under paragraph

210, Service Regulations.

HAMILTON, H. J., Acting Assistant Surgeon. Granted leave of absence for two days.

Herring, R. A., Assistant Surgeon. Granted leave of absence for one day, July 31, 1908, under paragraph 191, Service Regulations.

Hicks, W. R., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from June 1, 1908,

amended so as to grant five days only.

Носентом, М. W., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from August 8, 1908.

Меодw. Н., Pharmacist. Granted leave of absence for

thirty days, from September 1, 1908.

MULLAN, E. H., Assistant Surgeon. Granted leave of absence for seven days, from July 8, 1908, under paragraph 191, Service Regulations

PETTUS, W. J., Assistant Surgeon General. Granted leave of absence for one month and fifteen days, from August 22, 1908, with permission to go beyond the seas

ROWLES, J. A., Acting Assistant Surgeon. Granted leave of absence for five days, from July 29, 1908.

SAFFORD, M. V., Acting Assistant Surgeon. Granted leave of absence for five days, from July 28, 1908. under paragraph 210. Service Regulations.

SAVAGE, WALTER L., Acting Assistant Surgeon. Granted leave of absence for thirty days, from August 8, 1908. SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted leave of absence for seven days, from August 3, 1908, under paragraph 210, Service Regulations.

STILES, C. W., Chief of Division of Zoology, Hygienic Laboratory. Detailed to attend the annual meeting of the American Public Health Association, Winnipeg,

Canada, August 25 and 26, 1908.
Thomas, A. M., Pharmacist. Directed to report to Surgeon H. W. Austin, chairman of a board of examiners to determine his fitness for promotion to the grade of pharmacist of the second class

Weldon, W. A., Acting Assistant Surgeon. Granted leave of absence for thirty days, from July 30, 1908.

Wertenbaker, C. P., Surgeon. Granted leave of absence for one month, from August 9, 1908.

Wilson, J. G., Acting Assistant Surgeon. Granted leave of absence for one day, July 27, 1908, under paragraph 210, Service Regulations.

Resignation.

Pharmacist R. Miskimon resigned, to take effect August

A board of medical officers was convened to meet at New York, August 5, 1908, for the purpose of making a physical examination of officers of the Revenue Cutter Detail for the board: Passed Assistant Surgeon J. A. Nydegger, chairman; Acting Assistant Surgeon Edward E. Lindman, recorder.

A board of medical officers was convened to meet at San Francisco, Cal., on the call of the chairman, for the purpose of examining Pharmacist Thomas to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending August 8, 1908:

BAYLY, ROZIER C., First Lieutenant, Medical Reserve Corps. Ordered from Fort D. A. Russell, Wyoming, to Camp Emmett Crawford, Wyoming, for duty at field hospital during maneuvres

BOURKE, JAMES, Captain. Ordered from Fort Leavenworth, Kansas, to duty at camp near Fort Riley, Kansas.
Bratton, Thomas S., Major. Ordered from Fort Des

Moines, Iowa, with Second Cavalry to camp near Fort Riley, Kansas.

CARTER, W. FITZHUGH, Major. Granted leave of absence for one month.

DUNCAN, WILLIAM A., Captain. Granted leave of absence

for fifteen days FREELAND, HERBERT L., First Licutenant. Ordered to duty at Camp Emmett Crawford, Wyoming; granted leave of absence for twenty days, about October 1st.

HARRIS, HERBERT I., First Lieutenant. Granted leave of absence for sixteen days after close of maneuvres near Fort D. A. Russell, Wyoming. WELL, PARK, Captain. When relieved from duty at the

HOWELL,

U. S. Military Prison, Fort Leavenworth, Kansas, ordered to the Army General Hospital, Fort Bayard, New Mexico, for duty.

MABEE, JAMES I., Captain. Relieved from duty on the transport Sherman and ordered to Jefferson Barracks, Missouri, for duty; granted leave of absence for two

PALMER, FRED W., Captain. When relieved from duty at the Army General Hospital, Fort Bayard, New Mexico, ordered to Fort Benjamin Harrison, Indiana, for duty.

MUELLER, ARMIN, First Lieutenant. Ordered from Mil-waukee, Wisconsin, to Jefferson Barracks, Missouri, for

STEDMAN, CHESTER J., Captain. Granted leave of absence for three months

- Stone, John H., Major. Ordered from Newport News, Virginia, to the U. S. Military Prison, Fort Leaven-

worth, Kansas, for duty,
Wickline, William A., Captain. Left Leon Springs,
Texas, and arrived at Camp Emmett Crawford, Wyoming, with detachment of Company B, Hospital Corps. The following named First Lieutenants, Medical Reserve Corps, recently appointed from Contract Surgeons, U. S. Army, with rank from July 7, 1908, are ordered to active W. Bayley, Albion McD. Coffey, Harold L. Coffin, George W. Daywalt, Clarance F. Dickenson, John M. Hewitt, David D. Hogan, Leonard S. Hughes, John P. Kelly, H. Newton Kierulff, Clarence C. Kress, Henry F. Lincoln, Thomas S. Lowe, Clemens W. McMillan, Wallace E. Parkman, Henry du R. Phelan, Elias H. Porter, Jesse P. Truax, George B. Tuttle, Harry H. Van Kirk, Elsworth Wilson.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for

CARPENTER, D. N., Surgeon. Detached from the naval station, Cavite, P. I., and ordered home to wait orders.

FARWELL, W. G., Passed Assistant Surgeon. Detached from duty at Camp Ellicott, Isthmus of Panama, and ordered to the appeal requiring existing. ordered to the naval recruiting station, Philadelphia, Pa.

HERMESCH, H. R., Assistant Surgeon. Detached from the naval recruiting station, Cincinnati, Ohio, and ordered

to the California.

Mann, W. L., Jr., Acting Assistant Surgeon. Ordered to the Naval Hospital, Newport, R. I.

MINTER, J. M., Assistant Surgeon. Ordered to the naval recruiting station, Cincinnati, Ohio, when discharged from treatment at the Naval Hospital, Mare Island,

MORRIS, L., Surgeon. Detached from the naval torpedo station, Newport, R. I., and ordered to the naval station, Cavite, P. I., sailing from San Francisco, Cal., about September 5th.
Peck, A. E., Passed Assistant Surgeon. Ordered to the

naval torpedo station, Newport, R. I.

URIE, J. F., Surgeon. Placed on the retired list from
August 1, 1908, in accordance with section 1453, Revised Statutes.

Births, Marriages, and Deaths.

BATTENDIERI-AZZALI-In New York, on Monday August 3d, Dr. Oswald D. Battendieri, of Philadelphia, and Miss Rosina Azzali, of Rome, Italy

CASSIDY—LOUDER.—In Burlington, New Jersey, on Thursday, August 6th, Dr. John B. Cassidy and Mrs. Belle Louder.

KIRBY-ROHRBACH.—In Philadelphia, on Tuesday, August 4th, Dr. S. Stewart Kirby, of Mauch Chunk, Pennsylvania, and Miss Elizabeth A. Rohrbach.

LOEWY—AARONS.—In Philadelphia, on Wednesday, August 5th, Dr. I. D. Loewy, of the Isthmian Canal Commission Sanitary Department, and Miss Lillian Aarons.
OFFIELD—DOVLE.—In San José, California, on Thursday, July 16th, Dr. A. L. Offield and Miss Irene Doyle, of San

Power—Redmond.—In London, England, on Saturday, July 18th, Dr. William Thomas Power, of New York, and Miss Esther Redmond.

Died.

Brundage.-In Xenia, Ohio, on Saturday, August 1st, Dr. Lawrence H. Brundage, aged forty-three years. Croxford.—In Berwick, Maine, on Wednesday, August

Sth, Dr. Russell H. Croxford, aged fifty years.
Howe.—In Brookland, District of Columbia, on Wednesday, July 29th, Dr. Franklin T. Howe, aged sixty-seven

MARSH In Paterson, New Jersey, on Monday, August 3d, Dr. Elias J. Marsh, aged seventy-two years.

3d, Dr. Elias J. Marsh, aged seventy-two years.
Shotwell.—In Asbury Park, New Jersey, on Tuesday.
August 4th, Dr. John Haydock Shotwell, aged eighty years.
Sprager.—In Riverpoint, Rhode Island, on Sunday,
August 2d, Dr. Albert G. Sprague, aged seventy-one years.
Steves.—In Washington, District of Columbia, on Sunday, August 2d, Dr. John W. Stevees, aged fifty-eight years.
Waldeck.—In Cleveland, Ohio, on Sunday, August 2d,
Dr. Carl E. Waldeck, aged forty-five years.
Wall.—In Goshon, New York, on Saturday, August
1st. Di. Eliza I. Wall

New York Medical Journal

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VOL. LXXXVIII, No. 8.

NEW YORK, AUGUST 22, 1908.

WHOLE No. 1551.

Original Communications.

A REVIEW OF RECENT WORK ON SPIRILLAR FEVERS.*

By F. Percival Mackie, F. R. C. S. (England), Bombay,

Captain, Indian Medical Service: Assistant to the Director, Bombay
Bacteriological Laboratory; Fellow of the Royal Society of
Medicine; Fellow of the Society of Tropical Medicine and Hygiene; Corresponding Member
of the American Society of
Tropical Medicine.

Published under the Imprimatur of the Amèrican Society of Tropical Medicine.

The association of spirilla with human disease has been recognized since the discovery by Obermeier (1) in 1873 of the organism which bears his name, but it is only during the last few years that the parasitology of this class of fevers has received particular attention.

In the light of facts which were discovered concerning African tick fever, the spirillar diseases which are met with in other parts of the world have been the subject of careful attention, and the results obtained are so important that I think it of interest to pass them in review and to consider some questions which have arisen out of our extended knowl-

Professor Novy and others have suggested that the various relapsing fevers are caused by different spirilla, and it is partly with the object of collecting evidence on this point that this paper has been written. The question concerning the zoological relations of the spirillum will also receive attention and reference will be made to some animal diseases due to spirilla in so far as they throw light on similar phenomena in man.

For the sake of comparison, and to make what may prove to be a purely arbitrary division of the subject, I propose to deal separately with the relapsing fevers which are met with in the four continents and the literature, so far as it is accessible to me, has been examined with that object.

The fevers and their parasites are conveniently referred to as follows: The European disease and the Spirillum Obermeieri; the African disease and the Spirillum Duttoni; the Asian disease and the Spirillum Carteri; and the American disease, with which we may associate the name of Professor Novy (Spirillum Novyi).

*Read by title at the fifth annual meeting of the American Society of Tropical Medicine, held in Baltimore, March 28, 1908.

Pending the decision as to its zoological position the parasite is referred to as a "spirillum" rather than as a "spirochæta."

I. SPIRILLUM OBERMEIERI.

Morphology.—Length, from 12 μ to 45 μ ; breadth, from 0.3 μ to 0.5 μ . The number of curves varies from four to sixteen, and they are sharp and fairly regular. The ends are pointed. No structure can be made out even under the highest powers, though Obermeier (1) described irregularities in the course of the filament which were probably due to commencing degeneration.

Koch originally described one or more flagella at either end of the spirillum, and the observation was confirmed by Karlinski (2).

Quite recently Fraenkel (3) has shown the presence of peritrichous flagella of extreme tenuity like those described by Borrel (4) in the case of Spirillum gallinarum and Spirillum Duttoni.

Provazek (5) and also Schellack (6) believe that these lateral flagella are but artefacts produced by Zettnow's flagella method.

Most observers agree on the absence of an undulating membrane, though such has been described by Schaudinn (7) and also by Leishman (8).

The movements of the spirilla are varied; there are three easily distinguishable. The first is a rapid, corkscrew motion accompanied by translation from one part of the field to another; this is seen at the beginning of an attack, when the parasite is most vigorous. The second consists of an undulatory movement of the whole thread, and is seen as the crisis approaches or when the spirilla are losing their vitality—Weigert (9) and Moczutkowsky (10). The third is a swaying motion and is the last sign of vitality. To these Munch (11) adds tetanic movements.

All observers have failed to cultivate the organism in vitro, though it is capable of surviving as long as a fortnight or more at room temperature (Gabritchewsky) (12). It lives longer in blood drawn early in the disease than at the critical period, and longer at room temperature than in the incubator or in the refrigerator.

The relation of the spiritus to human disease.— They are present in the blood stream from the onset of the fever until the crisis, when they suddenly and totally disappear. They then collect in the spleen (Metchnikoff) (13), (Soudakewich) (14). Many writers have examined the secretions and excretions, and all agree with Engel (15) and Moczutkowsky (16) that the spirillum is never found except in the blood stream. Intrauterine infection of the fœtus has been observed by Albrecht (17). There is a progressive polynuclear leucocytosis falling with or about the time of the crisis.

Transmission to laboratory animals.-Until recently all animals, except monkeys, were stated to be immune, but lately Fulleborn and Martin Meyer (18) and also Uhlenhuth and Haendel (19) have shown that, although mice cannot be infected directly from human sources, yet if the spirillum is first passed through a monkey then infection can be set up in mice. The infection does not seem to be severe, and serial passages cannot be obtained. Inoculation with apyrexial blood is negative (Bullock). Fraenkel (21) noted that some mice became infected by devouring the carcase of a mouse which had died of the disease. Uhlenhuth and Haendel (22) failed to corroborate this, but found that the mice which had so eaten had acquired some degree of immunity. The same experimenters found that monkeys suffered from a severe attack of the disease, which was followed by a relapse. Rats and mice inoculated by the peritoneal route showed a blood infection in twenty-four hours, reaching a maximum in fortyeight hours. Spirilla persisted until the third day, but were then avirulent, owing to the presence of · antibodies.

The question of natural transmission.—This is believed to be due to insect agency, and suspicion has fallen particularly on the bedbug (Cimex lectularius). This insect has therefore come in for a large share of attention, and Tictin (23) and Karlinsky (24) assert to have transmitted relapsing fever by its agency. Their methods are open to criticism, as success was not obtained by infection through bites, but by bruising the bodies of recently fed insects in a mortar and injecting the resulting material into monkeys. They also found that bugs taken from infected dwellings frequently harbored spirilla, and, further, they were able to demonstrate them in the stomach contents of bugs as late as thirty days after feeding. Breinl and Kinghorn (25) tried to transmit both Spirillum Obermeieri and Spirillum Duttoni by bugs, but failed, and concluded that these insects would not be found capable of conveying the disease.

The gaedia of hermaty Inanunity is conferred by an attack, but it is not very marked, nor does it last long.

Metchnikoff (26), writing in 1897, believed that the disappearance of the parasite was due to phagocytic action, which took place principally in the spleen. In support of this view Soudakewitch (27) found that splenectomized monkeys passed through a very severe attack of the disease, in which the crisis failed to appear and death often resulted.

Tictin (29) (working with Spirillum Obermeieri) and Lamb (28) (with Spirillum Carteri) failed to show any difference between normal and spleenless monkeys. Gabritchewsky (30) and Lowenthal (31) showed the existence of active spirillicidal substances in the bleed, the hiercroad up to and beyond the crisis According to them, when these bodies have mached a contempte one precontation of the six

rilla takes place, which marks the crisis, following which they are phagocytosed in the spleen.

Schellack (32) does not believe in the destruction of spirilla by phagocytes, but in extracellular de-

struction in the liver and spleen.

Many observers have demonstrated the presence of spirillicidal substances in the blood and the destructive effect of the serum of recovered animals on active spirilla. These facts have been used to distinguish the various spirillar infections from each other and from other diseases, and have formed the basis of treatment by serum therapy. Gabritschewsky (33) and Lowenthal (34) produced such a serum from horses and injected it into patients suffering from the disease. They reported that the treatment seemed to prevent the occurrence of relapses, but on the whole the results were indefinite.

The course of the disease is unaffected by drugs. Morbid anatomy.—There are no characteristic changes in the organs of persons who have died of relapsing fever; such morbid appearances as are met with are those generally associated with severe septicæmia. Thus, there is marked fatty degeneration of the heart muscle, whilst the spleen and liver are enlarged, and show necrotic patches, which are due either to infarction or to local concentration of

spirillar toxines.

Hæmorrhages are not infrequent, especially in the kidneys. Some degree of bronchitis is constant. The bone marrow shows necrotic patches, which are apparently due to infarction.

2. SPIRILLUM DUTTONI.

Morphology-Ross (35) gives the length as varying from 15 \mu to 45 \mu. Dutton and Todd (36) give 13 / to 43 /, and describe it as having pointed ends, from 2 to 6 undulations, and of uniform staining. The width is given as from 0.2 to 0.4 \(\mu\). They describe certain Y shaped forms. which suggest longitudinal division.

Koch (37) found that the spirillum is longer than the European variety. He failed to find evidence of an undulating membrane or of longitudinal division, and did not see chromatin dots in the course of the spirillum. He saw nothing to suggest a cycle of development either in the human

blood or in the bodies of ticks.

Breinl, Kinghorn, and Garrett (38) state that the length of the individual spirillum is from 14 " to 16 \mu, and they describe refractile dots in the

The question of flagella is controversial. The earlier observers found no evidence of terminal or lateral flagella, but Zettnow (39) describes and figures diffuse peritrichous flagella corresponding closely to those described by Borrel (40) in Spiril-

Breinl, Kinghorn, and Garrett, and later Stephens (41), deny the presence of either undulating membrane or flagella. The last named observer describes, however, a terminal whip at one end and a sheath, adding that he has seen eviscerated forms which have left the sheath still retaining its original

Commenting on this appearance Breinl and his coworkers advance similar arguments used by me in reference to Novy's spirillum, namely, that the so called flagellum is merely part of the empty and extenuated sheath.

Dutton and Todd (42) have recently published some new observations on the morphology of Spirillum Duttoni. The organism, they say, is ribbon shaped and consists of a central core and a periplastic sheath. The latter is continued to form a flagellumlike process and there are no peritrichial flagella. The core is composed of a series of grannules interrupted by lightly staining areas. Median or terminal knot like swellings are frequent, and some thickened individuals suggest longitudinal division. Occasionally they are met with inside both red and white corpuscles, especially just before the crisis. They describe an undulating membrane, also longitudinal division, as not infrequent, and think that conjugation takes place. They also describe a change which the spirillum undergoes in the tissues, which results in a body distinguishable with difficulty from a blood platelet, and they believe it to be a sporocyst.

In the bodies of ticks they find that the spirillum undergoes a sort of encystment, which appears as "a faint blue or red spherical matrix about 5 μ to 7 μ in diameter, in which are imbedded perhaps a score of deep red granules." They believe that these sporocysts may rupture and the granules de-

velop each into a new spirochæta.

Schellack (43) gives the maximum length of the individual as 24 μ , with 8 to 12 undulations, and the width as 0.45 μ . He has not satisfied himself as to the presence of an undulating membrane and believes the peritrichial flagella to be artefacts.

The relation of the spirillum to human disease.— All writers are unanimous in stating that the spirillum is much less common in the human blood than

is the case in other spirillar infections.

Ross (44) goes so far as to say that they may not be found in the first attack, but only in the relapse.

Moffat (45) says they are sometimes "excessively

scarce after the first attack.'

Spirilla have not been found, except in the blood stream. There is a leucocytosis, as in the European disease.

Transmission to animals.—Ross and Milne (46), and again Dutton and Todd (47), found that certain monkeys (cercopithecus, cynocephalus) were susceptible, but that ordinary laboratory animals

were not so.

Breinl, Kinghorn, and Garrett (48), however, found that most ordinary animals were susceptible in varying degrees. Thus white rats were the most so, and to a lesser degree dogs, horses, goats, sheep, rabbits, guinea pigs, rats, and mice, whilst cats, chickens, pigeons, and goldfish were insusceptible. The incubation stage in monkeys (by tick transmission) is five to seven days; each febrile attack lasts three to four days; the animals suffer from three or four relapses at intervals of from five to nineteen days, so that the whole course of the disease in these animals lasts from three to eight weeks (Todd and Dutton). The spirilla are more numerous than in man.

The monkeys only occasionally die, but small animals frequently do,

In rats the incubation stage is only a few hours,

and the duration from one to forty-five days, punctuated by successive relapses. The parasites are very numerous and the mortality high. The virus is exalted by frequent passage.

The infection is capable of passing through a Berkfeld filter fine enough to keep back Bacillus prodigiosus. The passage of the spirillum from mother to feetus, already described in Europe by Albrecht (49) and Spitz (50), has been substantiated by Breinl and Kinghorn (51), working with rats and the African infection.

They draw the following important conclusions:

"(1) Spirillum Duttoni passes through the placenta from the maternal to the fœtal circulation; (2) the majority of fœtuses carried by infected mothers are themselves infected; (3) spirilla are more scanty in the fœtal blood than in the maternal blood, but the placental and maternal blood are equally infected with the parasites; (4) the parasites in fœtal blood show no morphological change; (5) there is no tendency to abort, but few of the young animals reach maturity; (6) the young born of infected mothers possess no marked immunity either to direct inoculation or to the bite of the tick."

Natural transmission.—Transmission by ticks occurs in one of two ways: Either by direct infection from the bite of a tick which has itself previously bitten an infected person, or by the bites of ticks

born of infected females.

Koch (52) showed that when a tick had taken in infected blood the spirilla disappeared from its stomach after a few days and were then to be found on the surface of the ovary, where they underwent multiplication. A considerable proportion of the ova of such a tick were infected. There was no cycle of development in the tick, and the route of the infection was not clear, for spirilla were not formed in the salivary glands.

Koch found that from five to fifteen per cent. (once fifty per cent.) of the ticks taken from infected

huts contained spirilla.

Markham Carter (53) found that six out of thirty-two eggs laid by infected ticks contained spirilla. He speaks of some spirilla in the eggs as undergoing longitudinal division and refers to minor alteration in form. Breinl and Kinghorn tried to transmit the disease by the agency of bedbugs, but failed.

Morbid anatomy.—This has been carefully studied by Levaditi and Manouelian (54) by aid of the silver impregnation process described by the former, and they come to the following conclusion: The spirilla cultivate themselves exclusively in the blood stream, and under no circumstances invade the cellular protoplasm. There is no evidence of any intracellular stage in the evolution of the parasite. The spirillum, they say, causes necrotic foci in the liver, and these foci are visible to the naked eye as soft, yellow patches, and microscopically as areas of cell necrosis. These they believe to be chiefly embolic in origin and only partly due to the action of soluble toxines. They believe that the

Herein this spirillum differs from the Spirillum gallurirum and from Irepenema bulklum, which are both true treate incades. Becauth by described Spirillum Observation as battar present in the interior of splenic cells, but the French observers named look upon them as an agonal invasion.

critical destruction of spirilla is essentially a phagocytic phenomenon, and does not depend at all on the direct intervention of spirillicidal substances. They find that the parasites often occupy the macrophages in curved and ringed shapes, and they consider this to indicate degeneration and not to be resting forms, as Schaudinn and Prowazak believed. Similar curved spirilla are seen coiled around the red blood cells, though these cells are never penetrated. Sawtchanks (55) demonstrated that fixative substances (opsonins) acted on the spirilla of recurrent fever, rendering their phagocytosis more easy.

Levaditi and Roche (56) estimated the influence of opsonins on the mechanism of the crisis and came to the conclusion that the destruction of spirilla at this period was not due either to bacteriolysins or to opsonins, and that the latter only came after the disappearance of the spirilla from the blood stream

3. SPIRILLUM NOVYI.

Morphology.—Our knowledge of this spirillum is due partly to the investigations of Norris, Pappenheimer, and Flournoy (57), but particularly to those of Novy and Knapp (58). These observers give the length of the smallest spirillum as from 7 to 9 μ and of the longer forms as multiples of those numbers, indicating end to end union. There are but two or three turns to the short forms, and the curves are sharp and regular. The American spirillum is shorter and finer than either the African or European. A well marked terminal flagellum is pictured, and the writers say there are no lateral ones. Fraenkel (59) and others, however, working with Novy's spirillum in Europe, differ and find the disposition of the flagella as being identical to that in the other two, that is, peritrichous.

The mechanism of movement is similar to that of the other spirilla described, and division is said to be always transverse and never longitudinal. Norris and his coworkers describe the cultivation of the spirillum in citrated blood, but Novy and Knapp, following their methods, failed to convince themselves that true multiplication took place. latter experimenters have since (60) by following the method adopted by Levaditi (61), who worked with Spirillum gallinarum, Spirillum Duttoni, and Spirillum refringens, succeeded in cultivating the American spirillum in collodion sacs placed in the peritoneal cavities of white rats. The spirilla multiply exceedingly under these conditions, and have been carried through twenty generations. The authors conclude that neither red nor white corpuscles are necessary to the multiplication of the spirilla, and that there cannot therefore be an intracellular stage.

Transmission to animals.—Monkeys, white mice, and tame and wild rats were found susceptible to the American spirillum, and with the exception of the last named all are subject to relapses. White mice are especially susceptible, and show an infection within twenty-four hours of injection, which persists up to the end of the third day. The infection is very heavy.

The mechanism of immunity.—Novy and Knapp (62) have paid special attention to this part of the subject, and their results are thus summarized:

"A powerful specific germicidal body is present in decline and in recovered blood, notably in blood of hyperinimunized rats. This body does not originate after the blood is drawn, but exists within the living animal. An immunizing body is also present, and is probably distinct from the germicidal agent,"

Pfeiffer's phenomenon can be demonstrated in vitro and in vivo. In the peritoneal cavity of hyperimmunized rats the spirilla are killed almost instantly, after which they are taken up by the macrophages or large mononuclear cells. Active immunity follows recovery from the infection. By successive injections of spirillar blood this immunity can be increased to a remarkable degree.

Passive immunity can be imparted by injections of recovered or hyperimmunized blood. Both active and passive immunity may last for months.

Hereditary immunity can be obtained, and is probably the result of infection in utero.

Preventive inoculations can be successfully made in rats, mice, and monkeys. Infected rats, mice, and monkeys can be promptly cured by injection of hyperimmunized blood. Subsequent relapses, if any, can be prevented by curative doses of blood. Agglutination of spirilla occurs in vitro and in vivo under the influence of recovered or hyperimmunized blood. To a slight extent it occurs during crisis. The agglutination, germicidal, and immunizing properties of recovered blood can be used in the serodiagnosis of relapsing fever, and also for the identification of spirilla. The evidence points to the existence of a group of relapsing fevers.

It is not clear whether relapsing fever is indigenous to the American continent, or whether it was originally imported. It appears to be very rare, and clinical descriptions of the disease are not accessible to me.

I am not aware of any theories as to its transmission among human beings.

An outbreak of relapsing fever has recently been described by Franco, of Bogota, in Columbia, South America, and reported by Blanchard (63). The spirillum resembled that of tick fever, and was associated with the bites of ticks, and of these Blanchard incriminated particularly *Ornithodorous turicata*.

4. SPIRILLUM CARTERI AND ASIAN RELAPSING FEVER.

Morphology.—Length, 12 μ to 16 μ , by 0.3 to 0.5 μ wide. These are the measurements of the common form seen in circulating blood, which show no sign of dividing. Shorter individuals measuring 7 to 8 μ are sometimes seen. In the organs of infected lice spirilla only 2 or 3 μ long are seen; these are in the form of a single S curve, and would be irrecognizable were it not for their association with those of normal dimensions.

Novy has noticed the presence of similar short forms in the substance of phagocytes, and it may be that these represent the essential units of which spirilla are composed.

These short individuals show no fragmentation or other sign of degeneration. In the healthy spirillum no structure has been made out, but when degeneration commences the cytoplasm breaks up into minute dotlike segments, which give the chromatin reaction, but are not acid fast.

There is a terminal filament at one or both ends,

similar to those described and figured by Novy as flagella. I have hitherto looked upon these as empty sheaths for reasons already advanced (64).

Multiplication takes place in the circulating blood by transverse division, but recently I have seen appearances in the stomach of the louse which strongly suggest conjugation or longitudinal division.

I have not been able to demonstrate an undulating membrane. Cultivation has not yielded positive results, but multiplication takes place in centrifugalized citrated blood for the first twenty-four hours and then stops.

The spirillum has been recovered alive from blood three weeks after withdrawal from the body.

The relation of the spirillum to human disease,-The spirillum is readily found in the blood during the acute attack, becoming more frequent as the crisis approaches, at which time it completely disap-

The secretions and excretions have since Vandvke Carter's time been held to be free from infection, and some experiments recently performed by me bear out this statement. It is true that several times spirilla of some sort were present in the urine, but inoculation of them into monkeys failed to produce the disease. The spirillum, moreover, is present in the menses, in placental blood, and in the blood from hæmorrhages. A series of cases among the staff of a lying-in hospital in Bombay appeared to be due to infection from placental blood

The apyrexial blood of patients has hitherto been looked upon as incapable of producing the disease, but there is some evidence which throws doubt on that observation. One carefully conducted experiment of mine showed that the spirilla appeared simultaneously in the blood of an inoculated monkey and in the relapse blood of the patient from whom it was taken. The incubation period in the monkey was delayed from the usual three days to five days. Blood taken at the same time from the human patient, citrated and preserved in vitro, did not show

In this connection it may be noted that Albrecht (65) in 1881 showed that blood drawn from patients, either one, two, or three days before a relapse was due, showed a development of spirilla even in vitro, and that the development coincided with

the time of the relapse in the patient.

Dr. Row, of Bombay, has informed me of a sim-

ilar observation on his part.

Carter explained Albrecht's observation by saying that spirilla appear in the blood before the temperature begins to rise, but are scarce and difficult to find, and hence, although Albrecht assumed them to be absent, they were really present, but in such small numbers as to be overlooked.

Transmission to animals.—Carter and subsequent observers failed to produce the disease in any animals except monkeys, but recently I have shown that white mice, white rats, white rabbits, black rats (Mus rattus), brown rats (Mus decumanus), and to a lesser extent guinea pigs, are all susceptible, but dogs, cats, goats, and pigeons are refractory.

The infection in animals other than monkeys is transient, and is not accompanied by marked symp-

toms, and the blood infection is light.

It is possible to infect monkeys by using much

smaller doses of infected blood than that usually employed, and also by light scarification of the skin and application of infected blood. Further, by the use of a grooved needle, to imitate the proboscis of an insect, the infection was carried from an infected to a noninfected monkey by transpuncture. Again, I showed that monkeys readily became infected by feeding with spirillar blood; the incubation stage is prolonged from three to five days, but a typical attack follows.

These experiments show that the agency of insects would probably suffice for transmission, and, further, that such transference is probably mechanical, or, at any rate, does not necessitate the occurrence of any intermediate stage of development.

The question of natural transmission.—Ten carefully organized experiments have been made, at intervals spreading over a year, to transmit the disease from an infected to a noninfected monkey through the agency of bugs. The first experiment was successful, but the nine following ones failed.

No cases of natural transmission have taken place in the monkey room, and no monkey has ever shown

natural or unexplained immunity.

The organs of bugs (Cimex rotundatus) have been examined with minuteness at different stages after an infected feed, and spirilla have been found with regularity up to the sixth day after feeding, but only in the stomach and only in the presence of fresh blood and without sign of multiplication. More definite results have been obtained with the body louse (Pediculus corporis), and the observations on the Nasik epidemic have just been published (66).

Thus fourteen per cent. of lice taken from the heavily infected boys' ward, two per cent. taken from the scantily infected girls' ward, and thirteen per cent. of artificially fed lice showed multiplication of spirilla in the internal organs. The principal seat of multiplication was the stomach of the louse and the upper part of the alimentary tract and the ovaries, and sometimes the Malpighian tubes were secondarily infected. A fluid rich in active spirilla could be obtained by gentle pressure on the heads of infected lice.

The question of immunity.—By injecting the blood of man and monkeys into monkeys and into goats a marked, though not high, degree of immunity was called out. The serum so obtained was found to have the power of killing the spirilla and producing lysis in a short time (fifteen seconds) in dilution of

About 30 c.c. of such serum was injected into a patient during the height of the disease. The result was indefinite.

The observations I have made incline me to believe that the action of spirillicidal substances determines the crisis, and that phagocytosis, if it takes place at all, is carried on in the internal organs, and is of secondary importance.

I have never seen phagocytosis taking place in the blood stream, although I have frequently observed dead spirilla engulfed by leucocytes when both were

kept in vitro.

Lamb found that the spleen was not of such importance in the crisis as Soudakewitch and others had supposed, for he found that spleenless monkeys did not suffer to a greater degree than normal ones. He also carried out experiments to determine the relative importance of phagocytosis and of spirillicidal substances in the mechanism of the crisis. He came to the conclusion that it was the increase of spirillicidal substances which determined the crisis, and that phagocytosis was only secondary. He advanced a theory to explain the recurrence of infection similar to that put forward by Wright and others to explain relapses in enteric fever.

According to this idea, spirilla escape by finding areas protected from the full spirillicidal pressure of the blood and remain there until such pressure has been reduced by excretion or by the production of antispirillicidal bodies. They then are able to recultivate themselves in the blood stream and so

produce a relapse.

Morbid anatomy.—The very careful description of post mortem examinations in Vandyke Carter's monograph (68) serves only to leave the impression that there are no lesions characteristic of the disease. If the tissues are stained by those methods which are usually chosen for revealing bacteria or protozoa, the spirilla are demonstrated with difficulty. They are seen to occupy the bloodvessels and the tissues in the neighborhood of hæmorrhages. From this I believed (69) that the spirillum was a true blood parasite and lived only in the circulating blood. More recently by using Levaditi's silver impregnation method this view has been modified. The spirilla were seen to be scattered throughout the liver, and not confined to the bloodvessels, though it is true no special relation to the tissue cells could be demonstrated.

This observation requires substantiation, but if it is true it tends to bring Spirillum Carteri more into comparison with Spirillum gallinarum and Treponema pallidum than with Spirillum Duttoni, which, as has been shown above (Levaditi and Manouelian) (70), is a true blood parasite.

The course of the relapsing fever in man.—For the account of the European disease I refer the reader to the article Relapsing Fever in Clifford

Allbutt's System of Medicine, i, 1905.

The African tick fever has been well described by Moffat, of Uganda, and the clinical course of the Asian disease has been most fully dealt with by Vandyke Carter. I have not been able to see any clinical descriptions of the American disease, and it is not clear how far the accounts in the American textbooks of medicine are the result of the experience of the writers and how much is taken from the classical description of the European disease.

Having studied the account of the disease from these various sources, I am in a position to call attention to certain points of difference between them.

In Europe the incubation stage varies from five to seven days, and there are generally one and sometimes two relapses. Jaundice of a mild degree is almost invariable, but bears no special relation to fatality. Pregnant women nearly always abort. The mortality varies between four to eighteen per cent., but Rabagliali (71) averages it at not more than five per cent.

The African tick fever is more severe. Moffat (72) believes there is more than one type of the disease in Africa, and contrasts that met with on the

Zambesi with that with which he is acquainted in Uganda. The incubation stage is said to be only of a few hours' duration in the former, while in Uganda it is between seven and ten days. Ross and Milne (73) in their original paper give the incubation period as being from one to five days, but Ross in Clifford Allbutt's System of Medicine (ii, part II, 1907) gives it as three to eight days.

The duration of the initial attack is from three to four days, and the first apprexial period lasts five to eight days (Moffat), one to three weeks (Ross).

The number of relapses is from three to five, and if less Moffat suspects some degree of immunity. There may be as many as eleven relapses.

The disease is very much more severe in the European than in the native, in whom a partial de-

gree of protection may be suspected.

There is a form of pneumonia, disappearing with the crisis, and in which the sputum is loaded with spirilla. Moffat also lays stress on certain eye symptoms which he looks upon as pathognomonic.

No figures as to mortality are given, though in one batch of coolies on the Zambesi the mortality is given as fifty per cent. The Uganda disease is

certainly less severe.

Fraenkel (74) has compared the spirilla met with by Koch in British East Africa with that described by Dutton and Todd in the Congo district. He finds no differences in their morphology or in their action on animals, but immunity against each is powerless to prevent an attack by the other. He concludes that these two spirilla are distinct, and suggests similar relationship between them to those uniting the paratyphoid and the typhoid bacilli.

THE RELAPSING FEVER OF INDIA.

The incubation stage and the first pyrexial period and the first apyrexial interval are each of seven days' duration. Low delirium often appears after the crisis, and disappears at the beginning of the succeeding relapse. One relapse is the rule; next most commonly there is no relapse; more rarely two relapses. Choksy, who has seen 6,000 cases in Bombay in recent years, has only once noted five relapses.

True pneumonia is rare, and I have never seen spirilla in the sputum. Parotitis occurs in ten per cent. of cases. Eye symptoms are rare, and are not

of the type described by Moffat.

When the patient is pregnant, abortion is the

There is a distinct type of spirillar fever called by Carter "the bilious typhus type." It is associated with great enlargement and tenderness of the liver and spleen, with much tympanites and marked jaundice, the presence of muttering delirium, and the absence of a crisis.

The mortality is very high. McCowen (75) had a series of seventy-nine cases in a native regiment. The total mortality was 20.25 per cent., but whereas sixty-one cases of the ordinary type gave a mortality of 6.5 per cent., there was a mortality of 66.6 per cent. among the eighteen cases of the bilious typhus type. Vandyke Carter gives the mortality of all cases as 18.02, but Choksy finds it varying from fifteen per cent. in 1807 to forty-three per cent. In 1901, and averaging thirty-eight per cent. during the last seven years.

The mortality among children in Bombay during that time was only eleven per cent.

It is possible that plague may have influenced the relapsing fever rate in Bombay.

A COMPARISON OF HUMAN SPIRILLA.

Morphology.-The American spirillum is described as being shorter than the other three. Uhlenhuth and Haendel, comparing the European, African and American spirilla, found that the African was the most vigorous and was less typically spiral in shape and formed more open flexures. The American showed the most regular and typical spirals, and was less vigorous, while the European was intermediate. Schellak (77) took great precautions to make accurate comparisons, and found that the flexibility and the intensity of movement of the European was less than the Russian, but greater than the American.

He finds that there is a difference in size; thus the maximum length without sign of division of the African is 24 \(\mu \) and width 0.45 \(\mu : \text{maximum length} \) without sign of division of the American is 17-20 μ and width 0.31 μ; maximum length without sign of division of the European is 19-20 / and width

I was able to compare the American spirillum with the Asian, and I found a markedly different picture, and have no hesitation in saying that the two could be readily distinguished by any one who was familiar with either. The American is shorter than the Bombay spirillum, and the individuals are discrete, instead of forming end to end aggregations, as the latter frequently do. It is also thinner and more delicate, and does not stain so intensely as Spirillum Carteri. The American is typically spiral, the Asian is rarely so. The Spirillum Novyi lie separately, whereas the others generally lie knotted together in twos or threes. Transverse division is more clearly marked than in the Asian

Then as regards cilial disposition. Fraenkel finds the European and the American spirilla possessed of peritrichous flagella. Novy and Knapp described only a terminal flagellum on their spirillum. Zettnow (78) found that Spirillum Duttoni had peritrichous flagella, but the Liverpool workers deny

this, and describe a terminal whip.

I found that the Indian spirillum possessed a terminal filament which did not agree with my conception of a true flagellum. Schellak described lateral polyflagella on all three occidental spirilla, but believes them to be artefacts, splitting of the periplast, due to the various manipulations used in Zettnow's flagellum method.

Leishman (79) has examined the African, Euro-

pean, and Indian spirilla, but doubts whether any distinction could be drawn between them on morphological grounds. He failed to find flagella on any of them, and believes that questions of vitality, etc., suffice to explain the alleged differences of shape and so forth.

All observers are agreed that the Spirillum Duttoni is very scarce in the blood of human beings, and this contrasts markedly with the heavy infection met with in the case of the European and Asian diseases. Otherwise the relation of the spirilla to

the human disease is similar in all.

Transmission to laboratory animals.—Here again there are noteworthy differences.

Spirillum Obermeieri is only transmissible to the smaller laboratory animals after preliminary passage through monkeys, whereas Spirillum Duttoni, Novyi, and Carteri are readily transmissible to a variety of animals. Fraenkel found that the African was more toxic than the American spirillum. Monkeys suffered as many as three and four relapses. Rats and hamsters showed one relapse, and most mice and squirrels inoculated died during the primary attack. The American spirillum does not produce a relapse in monkeys or small rodents, and the latter rarely die from the disease. Uhlenhuth and Haendel found that Spirillum Obermeieri produced a severe attack in monkeys, which was followed by one relapse. Spirillum Carteri is very mild in its effects on animals, only monkeys show any clinical manifestations, and I have never seen one (out of about eighty inoculated) die from the fever. Lamb's (80) experience was similar to mine. The other susceptible animals show no sign of disease, except the presence of spirilla in the blood.

The comparison of the clinical course of the disease met with in the four continents brings to light

some marked differences.

The much greater severity of tick fever, followed as it is by four or five relapses, and the frequency of certain eye symptoms detailed by Moffat, contrast with the relative mildness of the European disease and its low mortality. The Asian type is different in showing a fewer number of relapses and by the occurrence of a very fatal type associated with jaundice and the absence of a crisis. The large mortality of relapsing fever in Bombay contrasts with that met with in selected communities in other parts of India, such as Regiments, Asylums, and Jails, and may be due to high incidence of plague in that city.

The best reason, however, for considering the spirilla to be different varieties is that afforded by the serum reaction. Fraenkel, Uhlenhuth and Haendel, Manteufel, Breinl, Kinghorn, and others

Minimal length: Flagella:

Animals susceptible:

Course in animals: Course in man: Parasite in human blood:

Natural transmission: reactions

Sp. Ober ... European. Obermeieri, Spiral, Peritrichous,

Small rodents only after passage through mon keys, Mild, One, sometimes two, re-

lapses, Heavy infection,

Immune, serum without effect on Norvi or Duttoni,

Sp. Duttoni, African. open flexures, small redents and many animals, very suscep-tible, very severe, severe, four or five re-lapses,

TABLE OF COMPARISONS.

by ticks, immune, serum without effect on Norm of effect on Obermeieri,

Sp. Carteri, Asian, regularly spiral, terminal, (Novy) peritrichous (Fraenkel), small rodents, very susceptible, open flexures. ".

small rodents infected with difficulty.

larses, variable, by lice (?) immune, serum without offect on Xxxx;

have shown that animals which are completely immunized against one spirillum are still susceptible to either of the other two. Again, spirillicidal substances formed during the course of the disease only act on their own parasites and Pfeiffer's phenomenon is similarly specific.

I found by testing Spirillum Carteri with serum of animals highly immunized against Spirillum Novyi that they were quite unaffected by it, although they were quickly killed by the serum of animals which had recovered from the Indian dis-

From these data I think we may conclude that the four organisms, although closely related, are not identical, but are different varieties.

The appended table summarizes the points of

divergence.

The following precis of the chief spirillar diseases of animals is appended; it is interesting as showing the morphological similarity of the various spirilla, and so emphasises the fact that such similarity is no criterion of identity, for it is certain that these animal spirilloses are clinically very different from one another and from those affecting

Spirillosis of fowls (Spirillum gallinarum).— Marchoux and Salimbeni (81) described this disease, and showed that it could be transmitted by feeding fowls with blood or excrement of infected fowls or by inoculation with infected blood. They found it was transmitted in nature by a species of

The spirillum loses its virulence in blood or in the juice of the organ after forty-eight hours.

The serum of fowls which have recovered shows some immunizing properties, and the same serum in vitro possesses marked agglutinative and immo-

bilizing action on healthy spirilla.

Writing later on the same subject Levaditi and Manonelia (82) find that the septicæmia is not exclusively due to intravascular growth, but the spirilla invade the various glandular tissues and enter into intimate contact with the cellular elements. The crisis, which terminates the infection, is due to phagocytosis of the spirilla by the macrophages of the spleen and liver. The spirillum is capable of infecting the egg of the fowl.

Levaditi (83) in a further paper describes the development of embryos from infected eggs, and shows that death and maceration of the embryo often follows. He describes the various tissue changes associated with the disease and compares it with the course of infection in hereditary syphilis, which it resembles. As in syphilis, so in fowl spirillosis, the gland most heavily infected is the liver, which filters off the spirilla from the infected mother as the blood passes through the umbilical circulation.

A similar fowl spirillosis has been described from Egypt by Balfour (84), and lately by Reaney (85) from Central India. In both these cases the description given followed closely those given by the previous writers, and ticks were held responsible for transmission, as in the originally described disease; it is probable, therefore, that Spirillum gallinarium is a widespread parasite.

Spirillors of bats. This spirillosis was carefully

described by Nicolle and Comte (86) from Tunis. The spirillum had a length of 12 μ , to 18 μ . by 0.25 \(\mu\). width. It had pointed ends, and multiplied by transverse division. There was no evidence

of undulating membrane or of any internal structure, and its movements were vibratory, contractile, and resulted in displacement.

It was transmissible to healthy bats by inoculation, and the virulence was unaltered by frequent passage. If large doses were given infection was noted in forty-eight hours; if in small doses the appearance was delayed for three, four or five days. Recovery was the rule, but relapses occurred, and later some immunity was established.

Theiler (87), describing spirillosis of cattle in South Africa, was able to transmit the disease from ox to ox and from them to sheep. The disease was specifically distinct from piroplasmosis of cattle. It was transmitted by ticks, the offspring of infected

females.

Dodd (88), reviewing the subject of spirillar diseases of horses, oxen, and sheep, concludes that they are caused by identical organisms. Heanley (89) describes an epidemic of spirillar disease amongst Chinese buffalos; the disease was clinically like Rinderpest or hæmorrhagic septicæmia. The spirilla were from 16 \(\mu \) to 32 \(\mu \) long, and were possessed of 8 to 12 spirals; they were present as blood parasites

Stordy (90), in the same journal, describes the disease in the horse as one of rapid course, followed by extreme emaciation. Spirilla abounded in the blood stream. He was unable to transmit it to

a dog.

Many other descriptions of spirillar disease in animals might be referred to, but those given here will suffice to show how widespread these diseases are, and how similar the parasites are in their main morphological characters to one another and to those affecting man.

THE NATURE OF THE PARASITE.

The spirilla were until recently unhesitatingly placed amongst the bacteria, but in 1904 Schaudinn threw the great weight of his authority against this view. He came to this conclusion as a result of his work (91) on Spirillum Ziemanni and the alternation of its generations in the owl and in the mosquito, and he gave his opinion that the spirochætæ represented the flagellate stage of a sporozoon. He further stated that Spirillum Obermeieri and others were possessed of an undulating membrane, a nucleus, blepharoplast, and flagellum; that is, they were practically identical with trypanosomes. His deductions concerning Spirillum Ziemanni were found later to be of doubtful nature, and latterly he acknowledged that it was very far removed morphologically from the typical spirochætæ.

Since then the trend of opinion, led by Novy, has veered back, and many writers now consider that these organisms are more closely related to the

bacteria than to the protozoa.

Novy and Knapp (92) have accumulated considerable evidence in favor of this view and they lay emphasis on the following points: Spirilla are like the bacteria in that they are structureless, possess multiple flagella, and divide transversely. On the other hand they possess neither nucleus, blepharoplast, nor undulating membrane, as the trypanosomes do. They multiply rapidly in the blood stream, giving rise to a disease which runs a short and severe course, such as is common enough amongst the bacteria, but unusual amongst protozoa.

Trypanosomes are very susceptible to plasmolytic changes, but spirilla, like the bacteria, are very little affected by changes in the osmotic tension of

the fluid in which they are suspended.

Spirilla are again, like bacteria, much more re-

sistent to heat than trypanosomes.

The spirilla retain their form under various conditions, when trypanosomes become degenerated or involuted.

Active immunity is readily called out by infections due to bacteria and spirilla, but only slowly and with great difficulty by trypanosome infection.

They also add that aerotropism is a marked feature of trypanosomes, but is absent in the case

of spirilla and bacteria.

An argument upholding this view and one which I have not seen brought forward is that afforded by the leucocyte reaction. Speaking generally, bacteria, when they affect the leucocyte wave, do so by producing a polynuclear leucocytosis, whilst protozoa generally produce a leucopenia, with a relative increase of large mononuclear leucocytes (malaria, kala-azar, etc.).

Relapsing fevers are characterized by a heavy polynuclear leucocytosis, like the bacterial diseases, and I consider this as a very strong argument in favor of the bacterial affinities of the spirilla.

Some writers persist in the belief that sometimes longitudinal division and even that conjugation takes place, and some recent observations of mine in the case of infected lice lead me to incline towards this

Again, the methods of natural transmission by ticks and perhaps by lice is suggestive rather of a protozoon than a bacterium, but this argument is not so powerful as at first sight appears. Firstly, because no intermediate stage or involution form has yet been found in the body of the insect host, secondly, because insect transmission is not peculiar to protozoal diseases, for the Indian Plague Commission has recently shown (93) that plague can be disseminated by the agency of fleas.

Whilst most writers agree that spirilla differ in their characters from both bacteria and protozoa, there is considerable difference of opinion into which group they should be admitted. Zettnow (94), looking to their cilial disposition, their transverse division, and the absence of an undulating membrane, thinks they approach the bacteria, whilst Prowazek (95), who has observed their penetration into red blood corpuscles, and also on account of their reaction to solutions of sodium chloride and other weak alkalies, upholds their protozoal nature. Both are in favor of establishing a new genus for these parasites. Again, Neufeld and Prowazek (96) incline to the protozoal view because of the behavior of the spirilla to solutions of saponin and of bile salts. Bacteria, they say, are not at all affected by saponin and only the pneumococcus is sensitive to bile salts. Animal cells, however, the protozoa, and with them the spirochætæ, are readily destroyed by those agents.

A very important paper, by Swellengrebel, on the morphology of this group of organisms, has recently appeared (97), but his observations, which are in great detail, can scarcely be adequately dealt with in the limits of this paper. He studied and compared a typical spirillum (Spirillum giganteum) (Migula), and two spirochætæ (Spirochæta Balbiani Laveran and Mesnil, and Spirochæta buccalis).

A few of his most important conclusions are here summarized. All these organisms are possessed of a cell membrane which contains within it a protoplastic structure containing vacuoles, and these latter constitute an osmotic system like that described by Fischer (98) in the true bacteria.

The cell body of spirochætæ and spirilla is elon-

gated, with rounded extremities, the pointed appearance at each end is due to the presence of a periplastic cap (la calotte). The nucleus of Spirillum giganteum and of Spirochæta Balbiani is shaped like a spiral filament and is composed of chromatin and divides longitudinally.

The division of the cell as a whole is transverse. Division of Spirillum giganteum and Spirochæta buccalis is brought about by a nipping in, and results in the formation of a fine filament connecting the two daughter cells.

In Spirochæta Balbiani division is effected by transverse cleavage. At one or both ends of the organism the cells' membrane is prolonged to form la calotte. This process is pointed, and terminates in a fine filament—the flagellum.

Sometimes there is a tuft of cilia (Spirillum giganteum).

The flagella of spirilla and spirochætæ are homologous, and both arise from a chromatin granule. Spirochæta Balbiani has no flagellum, but the chromatin band takes origin from a granule embedded in the periplastic appendage. This periplastic appendage is an alveolar structure which winds around the cell and resembles somewhat an undulating membrane.

Spirochæta buccalis and Spirochæta Balbiani and Bacillus maximus buccalis react similarly to solutions of alkalies and acids and degenerate in the

In conclusion, Swellengrabel sees no valid reason for removing the spirochætæ from the family of Spirillaceæ (Migula), but thinks the family should be widened to admit them.

He divides the spirillaceæ into two families, (a) the flexile spirilla, (b) the nonflexile spirilla. latter group contains the true spirilla, which may be subdivided according to the number and disposition of their flagella.

Those with a single flagellum form the genus vibrio, and those with many the genus spirillum.

Here is his scheme in full:

SPIRILLACE.E (MIGULA).

Cells with rounded extremities forming a part of a spiral. Cell division is transverse, and is generally brought about by transverse cleavage, previous to which the cell increases in length. Sometimes division is accompanied by nipping in of the mother cell. After division the daughter cells remain for some time united by an unbroken filament. The flagella, when present, take their origin from a periplastic sheath cap, and are themselves prolongations of the periplastic appendage.

The calotte gives the cell a pointed appearance. FIRST SUBFAMILY.—Spirillaceæ (new family).

Cells not flexible. Genera. Spirillum and vibrio (of Migula).

SECOND SUBFAMILY.-Spirochætaceæ (new family). The cells are flexible.

First genus. Spirochæta (Ehrenberg). Cells without flagella, with a well developed periplastic appendix, and often showing an alveolar structure. Sometimes there are myonemes in the appendage. Types—Spirochæta plicatilis (Ehrenberg); Spirochæta Balbiani (provisionally).

Second genus. Treponema (Schaudinn). Cells with a flagellum at one and sometimes at both extremities, which is the prolongation of the sheath cap. A periplastic appendage has sometimes been demonstrated. Types: Spirochæta buccalis dentium; Treponema pallidum.

Third genus. Borrelia (new genus). Cells with peritrichial flagella. Type: Spirillum gallinarium.

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March 2, 1891.

CYSTITIS. BY ROBERT E. DAVISON, M. D., Pittsburgh, Pa.

The acquisitions to the knowledge of the bladder made in the past decade have been most valuable as well as most gratifying to the physician. Its anatomy and pathology have been practically rewritten, and its symptomatology, through the perfection of new instruments, has been given a better interpretation. The didactic nature of this paper will permit our dwelling for a few moments on some of the most important anatomical findings.

The adult bladder lies within the true pelvis. The bladder at birth lies between the symphysis and the umbilicus. At the ninth year it has descended to adult position, but on distention rises above the symphysis. Not until the twenty-first year does it

reach a permanent location.

The capacity of the bladder is not definite, but variable. The distensibility is remarkable. It may rise above the umbilious, filling almost entirely the abdominal cavity. Most normal bladders hold from 300 c.c. to 500 c.c. of urine without discomfort to the patient. The vesical ligaments bind it quite firmly to the symphysis. The superior and posterior surfaces are covered by the peritonæum. In the male the prostate, seminal vesicles, and rectum are closely related to the bladder, while in the female the ovaries, tubes, uterus, and vagina are important relations.

By cystoscopy the interior architecture of the normal bladder can be beautifully seen. Its cone shape and prevailing salmon tint will first arrest

the attention.

The important structures are seen at the base. The urethra has its origin in the neck, and the fundus lies between the neck and the posterior wall. The body is an indefinite part between the fundus and the apex. The deep red triangular portion of the base is the trigonum. Those two little red points seen at the posterior angles of the trigone are the ureteral The interureteral ligament crosses between the ureteral papillæ. The fundus behind this ligament may become abnormally pouched, which is spoken of by the French writers as the bas fond. The bas fond forms a receptacle for retained urine and microorganisms. It will be observed that the mucous membrane is plicated save over the trigone, void of villi, smooth, glistening, and transparent. Dark bundles of the detrusor muscle can be seen crisscrossing the bladder walls.

Histological examination of the mucosa shows that the bladder is lined with large flat epithelial cells of the squamous type, which may be found abundantly in the urine of the inflamed bladder. Beneath the squamous cells are several layers of cylindrically shaped cells, very much like the epithelium of the upper urinary tract. In fact, it is doubtful if they can be distinguished by the ordinary microscop-

ical examination of the urinary sediment. The plications of the mucous membrane are due to the loose submucosa.

The trabeculated arrangement of the musculature is well adapted to allow the greatest expansion with the least possible damage to the bladder walls. In bladders working against resistance, the muscle bundles may become enormously hypertrophied.

This usually takes the form of trabeculation, and should be considered a pathological condition. In trabeculated bladders the walls may be pouched out between the muscle bundles, forming sacules or cellules. Their presence denotes a weakness of the wall, consequently, in irrigating these bladders. much force must not be used for fear of rupturing

The bladder is very richly supplied with blood. The venous return is mostly by plexuses, which empty from one to another, finally reaching the internal iliac veins through the prostatic plexus in the male, and the vesicovaginal plexus in the female. A better architecture for passive congestion can hardly be imagined, especially when there already exists a circulatory disturbance as is seen in the prostatic.

Sensory impressions pass from the bladder to the second, third, and fourth sacral segments of the cord, and motor impressions, from the eleventh and twelfth dorsal and first lumbar segments to the bladder. With the exception of the trigone the mucous membrane is not very sensitive.

Mucous glands are found about the trigone, which secrete actively in inflammatory conditions of the

The absorptive powers of the bladder are not of

a high order, but ought to be considered when applying local anæsthetics to the mucosa. Ætiology.—Cystitis is inflammation of the blad-Inflammation is the reaction of the tissue to an irritant. In cystitis infection is the irritant. Not-

withstanding, inflammation used in its broadest sense does not necessarily mean infection, however; in cystitis it is in the main correct, and must be always considered in the treatment. When it is recalled that Ford demonstrated the presence of bacteria in the kidneys of fifty per cent. of his laboratory animals, which were apparently healthy, the cause of many of the so called cryptogenetic cases will be evident. Cystitis, howsoever caused, means infection. Pus and microorganisms must be present in the urine. When there is pus there are always organisms, but there may be organisms without pus, as in bacteriuria. Inflammation is not a calamity, as it were, that has befallen the bladder, but must be looked upon as a salutary process. In the words of Adami: "Inflammation is a danger signal, but by no means necessarily a danger. Whenever we observe the outward and visible signs of inflammation we have the indications that something abnormal has occurred in the tissues, something that has brought about a reaction on their part. Thus it is our duty to determine as soon as possible what that something is." The presence of bacteria alone will not produce a cystitis, as may be seen in a typhoid fever patient whose urine may contain the bacillus of Eberth in abundance, yet his bladder may be in a perfectly healthy condition.

The bladder mucosa is very resistant to infection;

something must occur to lower that resistance before there can be an infection.

Thus two factors enter into the cause of cystitis, the predisposing cause, or preparatory, and the direct, or bacterial invasion. The predisposing causes may be grouped under three general headings, as follows: (1) Tramua; (2) congestion; and (3) retention of urine.

Trauma may be considered the predisposing cause in cystitis, following injuries of the bladder wall, as

in catheterization and vesical stone. Congestion may be looked upon as the predisposing cause in cystitis following the ingestion of certain drugs, as cantharides, such practices as excessive venery and masturbation, and remote causes. such as constipation, hæmorrhoids, and cold.

Retention of urine is frequently a predisposing cause of cystitis in men with stricture of the urethra or an enlarged prostate.

Microorganisms are the direct cause. The number of bacteria entering the bladder is legion, and it follows that they cannot all be pathogenic. However, there are certain well defined forms found in cystitis which have been proved by experimentation to be pathogenic. Casper classifies the most common ones in order of frequency, as follows: (1) Bacterium coli commune, (2) streptococcus, (3) proteus of Hauser, (4) bacillus of tuberculosis, (5) Diplococcus ureæ liquifaciens, (6) Staphylococcus ureæ liquifaciens, (7) Streptobacillus anthrocoides, (8) gonococcus, and (9) Bacillus typhosus.

As might be expected, the colon bacillus is first on the list in order of frequency. It enters so much into the infections of the abdominal organs, it seems that its field of invasion is unbounded. One can conceive how readily these bacilli may pass through the kidneys to the bladder, and there infect a prepared soil. It is rather surprising to see the gonococcus eighth on the list, when the frequency of

specific urethritus is considered.

A few of these bacteria throw off ferments which decompose urea, thus forming a carbonate of ammonia. The urine becomes strongly alkaline by the presence of the ammonia, and the mucus in the urine is gelatinized into a ropy, stringy material. This condition is seen in neglected cases of chronic

cystitis with retention of urine.

The chemical reaction of the urine in cystitis is usually acid. It is really of little importance to know the reaction of the urine when considering the treatment of cystitis. The reaction is mostly due to the character of the bacteria present when it varies from the normal, consequently there is not much to be gained by giving alkalies, or acids, to change the natural secretion of the kidneys.

Bacteria may gain entrance to the bladder in many ways. The urethra is a common route. The urethra about the meatus is normally invaded by microorganisms, many of which are pathogenic. It is evident that the bacterial flora depends to a great extent upon the cleanliness of the person. The smegma bacillus is commonly found in the urethra, and it is very difficult to distinguish from the tubercle

The length of the male urethra is highly protective to the bladder from this invasion, but the short female urethra offers very little protection. The frequency of cystitis in women suffering from leucorrhœa, or puerperal infection, is due to their short urethra. Notwithstanding this lack of protection, cystitis is not so common in the female as in the male. This may be due to the proneness of the male to congestions about the prostate, his reckless exposures to gonorrheal infection, and his greater liability to stone in the bladder.

It has only been during the past few years that the descending infections-from the kidneys and ureters-have been given the prominent place in the ætiology of cystitis that they justly deserve. The colon and tubercle infections are common examples of this mode of infection. That some infections take place through the blood stream, the lymph stream, the bladder wall, the colon, the uterus, tubes, and ovaries, is not at all improbable. Women with pyosalpynx are commonly sufferers from attacks of

It is no wonder the bladder is so frequently the seat of inflammation, when it has so many avenues of infection.

Cystitis may be circumscribed or it may be diffused. It may affect only the neck of the bladder, or trigone, or portions of the wall, but the tendency is ever to become a generally diffused inflammation. For clinical purposes, inflammations of the bladder may be divided into acute and chronic, with the understanding, however, that it is an artificial division and not in any way a natural one. Abrupt lines of demarcation are not found in nature, consequently it may be at times the clinician will be puzzled where to assign a given case. Notwithstanding this, it is better to preserve this established terminology, although it may be apparent that a classification based on pathological, or bacterial findings, is a more rational one.

In simple acute cystitis the mucous membrane is red, contrasting with the salmon tint of the healthy bladder, œdematous, hyperæmic, vascular, vessels distended, and the glistening transparency replaced by a dull, velvety, reddish appearance. It may affect the entire mucosa or only circumscribed areas. In the severer cases there are in addition spots of ecchymosis and denuded surfaces from which the epithelium has exfoliated.

Sections of the bladder for microscopical study show in the milder grades the epithelium swollen and the mucosa infiltrated by round cells; in the severe ones the epithelium is lost and the round celled infiltration extending through the entire thickness of the wall.

The urine contains pus, organisms, epithelium, and sometimes blood.

Chronic cystitis often affects the neck and trigone only, but it may be a diffuse cystitis. The mucous membrane is grayish, swollen, thickened, covered with secretion, and occasionally granulations and excrescences are seen which look much like papillomata. Exfoliation of the epithelium is extensive, leaving denuded areas, and in some cases the epithelium may be entirely lost.

Sections of the bladder wall show a deep round celled infiltration throughout its entire depth, and in some instances it has been found in the perivesical tissue. The epithelium is gone, and the tisues are in a state of general fibrosis. The bladder becomes virtually a sac with walls of scar tissue. The tendency of the bladder in this state is to contract, and it nearly always does, excepting when there is urinary obstruction, when dilatation is the rule. The contraction may be so great that bladder capacity is lost, when the urine will dribble from the bladder as fast as the kidneys throw it down. If the fingers are pushed into the pelvis over the pubic arch the bladder may be detected as a round hard mass, feeling not unlike a fibroid tumor.

The urine is loaded with pus, organisms, epithelium, and sometimes stringy mucus and triple phos-

phates.

Occasionally cases of cystitis are seen in which the organisms are either exceedingly virulent or else the resistance of the tissue is very low. Deep ulceration, sloughing, or gangrene are likely to occur. As Adami has pointed out, the inflammation is not excessive, but the irritant is; in fact, the inflammatory reaction is inadequate. The line of treatment follows removal of the irritant and augmentation of the inflammatory reaction by every way possible.

The cardinal symptoms of cystitis are strangury, pain, and purulent urine. In acute cystitis strangury and pain are prominent symptoms, but in chronic they may be entirely absent. There is always pus; there can be no cystitis without pus. Strangury is frequency without increase of the quantity of urine. It is present both day and night, but not quite so bad at night; and is due to the inability of the mucous membrane to expand freely with the increase of urine. The frequency of nervous origin is present by day and absent by night. Pain is chiefly a symptom of the acute form. It may be present constantly whether the bladder is at rest or in action. Usually it is more acute during urination, either just preceding the act or closely follownig it, when the last drops are expelled. In bad cases the patient suffers intense pain with every act of micturition. Beads of cold sweat stand out on his forehead, and his countenance is expressive of great agony. In inflammation about the neck of the bladder, the pain is at the close of urination. The pain is frequently referred to the symphysis, perineum, and the end of the penis. However, there may be referred pains to any region supplied by the sensory nerves coming directly, or anastomosing with the filaments, from the second, third, and fourth sacral segments of the

The amount of pus in the urine varies, and is in direct proportion to the extent of the mucous surface involved. In many urines the pus is so evident that the naked eye may detect it, but on the other hand it may be so slight that the microscope will be required. If the patient voids his urine in three glasses each glass will contain purulent urine, whilst in urethritis the third glass will be clear. The comma shreds seen in the third glass are indicative of prostatitis and not of cystitis.

Cystitis is an inflammatory affection, but not always a febrile affection. In acute cystitis and in the acute exacerbations of the chronic form a rise of temperature may be expected. Especially is this true of children; when seen, however, by the physician there is rarely any fever. In a patient suffering from chronic cystitis, if a sharp rise of temperature comes on with a chill it may signify the onset

of an acute exacerbation or a kidney infection. The so called chronic urinary fever, with its irregular evening rise and morning drop, seen occasionally in old prostatics, invariably means kidney infection. Uncomplicated chronic cystitis is an afebrile affection.

Diagnosis.—The diagnosis of cystitis is not difficult. Strangury, pain, and purulent urine are sufficient to make a diagnosis. If the surgeon wishes to treat his patient intelligently he will not be satisfied with simply making a diagnosis; he will go further, endeavoring to arrive at the cause. At first thought it may appear difficult, and it will be in some cases. However, if the surgeon will gather a correct history, make a careful examination of the urine, and apply ordinary skill in the use of modern instruments and the common rules of physical diagnosis, he will rarely fail in definitely locating the source of the infection.

Gonorrhœal cystitis affects the neck and trigone of the bladder, and seldom extends to its body. The first glass is the cloudiest, because it contains pus from the urethra as well as from the bladder. It is markedly painful, and terminal hæmorrhage is frequent. The surgeon must not mistake gonorrhœal cystitis for tumor of the bladder; sometimes the hæmorrhage is very great. This is the only acute cystitis benefited by irrigation. The relief is so marked when irrigated with a silver nitrate solution that it becomes a valuable therapeutic test in a distinctive diagnosis. A smear of the pus may or may not show the gonococcus.

The mild attacks of cystitis so common in women are generally due to infection passing through the nort urethra from without. The inflammatory reaction is usually adequate to overcome the irritant, and a cure takes place without medical attention.

Cystitis accompanying or following attacks of appendicitis is usually a descending infection coming from a pyelitis, the pyelitis having been caused by the organisms passing through the kidney from the infected area. Sometimes the infected appendix is of sufficient length to come in direct contact with the bladder wall, thus supplying the source of infection.

Formerly it was erroneously taught that the pus in acid urine came from the kidney, and in alkaline urine from the bladder. The older writers reached this conclusion by reasoning from false premises, since they believed that cystitis was due to a change in the chemical constituents of the urine. They were satisfied that alkaline urine in some way set up a cystitis, and had many ingenious theories to prove its truth. In their treatment they endeavored to change the reaction of the urine, and to this day the ear marks of that teaching can be found in almost any textbook on genitourinary diseases.

The cystitis following stone or foreign body in the bladder abates promptly upon their removal.

Cystitis with retention is usually chronic, subject to acute exacerbations. Exposure to cold, excessive drinking of alcoholic beverages, and venery are responsible for many of the acute attacks in these patients. Strangury and pain are pronounced during the acute condition, but ordinarily the only symptom is purulent urine. The prognosis depends on how well the retention can be relieved.

In cystitis following cord lesions with a large residual urine, a cure can hardly be expected. Young reports a few cases benefited by hydraulic stretching of the bladder. The bladder is usually dilated, trabeculated and saculated. The urine contains pus, organisms, ammonia carbonate and triple phosphates, and products of decomposed urine. The urine is constantly dribbling through the urethra from the overflow, and a disagreeable stench surrounds the patient. These bladders should either be regularly catheterized or a retained catheter used with the leg urinal.

The benign tumors may or may not cause a cystitis. There is scarcely any pain or strangury.

Hæmorrhage is the prominent symptom.

The malignant tumors invariably sooner or later set up a cystitis. When disintegration begins fragments of the tumor may be found in the urine.

A general plan should be followed in the examination of patients having urinary symptoms. A concise history must be obtained, including the patient's family history, past history, and his present illness. The urine should be voided in three glasses; women can be directed to void in three vessels, the urine then placed in as many bottles. The urine test must include both a chemical and microscopical examination; the former for albumin and sugar, and the latter for tube casts, pus, and blood. To make a bacteriological examination of the urine the bladder must be aseptically catheterized, which at times becomes necessary to do.

Inspection gives valuable information. Palpation is more important. The rectum should be carefully palpated, and the condition of Cowper's glands, the prostate, and the seminal vesicles determined. In women, besides the rectal, a vaginal examination should be made to determine the condition of the

uterus, tubes, and ovaries.

Sometimes a stone in the female bladder can be felt through the vesicovaginal sæptum. The old practice of forcing the finger through the female urethra to palpate the bladder is not countenanced to-day. Percussion gives little information beyond determining a distended bladder. Auscultation is of no importance. The steel sound is valuable in determining the urethral calibre, and also in diagnosticating stone of the prostatic urethra. In searching for vesical stone it is best to use a stone searcher, for the steel sound may be too short to go over the entire bladder wall. The patient should be catheterized to show the presence or absence of residual urine, and also to determine the bladder capacity. It is important to know the bladder capacity, because the frequency might be due to a contracted bladder. which is not at all rare in severe grades of cystitis. The cystoscope is the most valuable instrument the genitourinary surgeon possesses, and to its perfection is due, in most part, the revolution that has taken place in the treatment of bladder affections. Experience and cerebration must be back of the instrument, and it should be considered rather as a reserved diagnostic procedure, following the exhaustion of other simpler methods of diagnosis. It we start that there eight to be a good and sufficient reason for putting a patient through an examination which, if not painful, is at least most uncomfortable. It may be necessary to determine whether

the kidneys are not the source of the pus, and if they are, which one. In a simple cystoscopy, when there is a pyonephrosis, a stream of pus may be seen pouring out of the ureter; in other less well marked cases the catheterizing cystoscope or segregator will be required. The Röntgen ray is not the valuable diagnostic agent for bladder work as it is for the upper urinary tract. The cystoscope will give more information than the skiagram.

It is not the writer's purpose to discuss the diagnosis and treatment of tuberculosis of the bladder in this paper; however, the chief diagnostic points should be considered, in order that a distinctive diagnosis might be made. The tubercle bacillus, as it is better understood, is more and more recognized as a causative factor in disease. This is as true of the bladder as it is of the rest of the body. The end result of the tubercle on a mucous surface is an ulcer. The coalescence of many of these ulcers is spoken of as tuberculous cystitis. This is a most painful affection, perhaps the most painful of all the bladder infections. In case there is an ulcer present in the bladder, and no apparent cause for it, it is good medicine to make a reserve diagnosis of tubercle infection, for simple ulcers are very rare, and then endeavor to prove the presumption. If upon a careful search of the urine the tubercle bacilli are found, and the smegma bacilli have been excluded, then the diagnosis is positive, but if not found this must not be considered negative evidence. The biological test may then be tried; it is done by injecting a few drops of the urine into the abdominal cavity of the guinea pig, when positive tuber-culous lymphatic glands can be found post mortem. Ophthalmoreaction and the tuberculin test may be of assistance. It is not likely that all these tests will be negative in tuberculous cystitis, but if they should be and the appearance of the ulceration is suspicious, it is best to consider it tuberculous, especially if the urine is alkaline and free of organ-

Prophylaxis.—A great deal has been written on prophylaxis, covering the ground thoroughly and exhaustively; therefore, the only excuse the author has to offer for bringing this subject into his paper is its vast importance, and to sound once more the danger of careless instrumentation of the urethra and bladder. The simplest and best aseptic technique should be instituted and followed routinely The external genitalia scrubbed with soap and water, and douched with an antiseptic solution. The anterior urethra irrigated with a solution mildly antiseptic. The lower abdomen, external genitalia, groins, and thighs of patient covered with sterile towels, or towels wrung out of an antiseptic solution. The instruments must be sterile and kept sterile till used. The operator's hands should be cleansed thoroughly, or better, sterile rubber gloves

Treatment.—Scarcely more than principles of treatment can be considered in a brief paper. The physician should first unload his memory of all textbook prescriptions, so called bladder mixtures and cystitis cures. The common sense tenets of general medicine prevail in the treatment of the bladder, as they do in the treatment of any other organ. A full appreciation of the pathology to be

met is necessary, and then the physician should endeavor to promptly meet it. "If we incise or otherwise operate, our object must be not primarily to reduce the inflammation, but to remove the irritant. If we determine that operation is inadvisable, then first we must secure physiological rest for the inflamed part, so that there be no waste of energy on the part of the tissues, that energy being devoted to its fullest to counteracting the irritant."

There are certain general principles of treatment to be observed applicable to all cases of cystitis.

The patient should drink freely of pure water. There is no advantage in the advertised mineral waters. The bowels should be opened and kept well open. The food should be light and bland, but nutritious; liquid food is sometimes advantageous, because it enables the patient to take more water, but this mode of treatment must not be pushed to the point of malnutrition. Alcoholic beverages should be prohibited excepting in weak old people, when they are permissible. The sickroom should have plenty of fresh air, and better if the patient can be kept out of doors. The aged should be gotten out of bed at the earliest possible moment. Tonic and roborant treatment are frequently required. Urotropin should be administered in doses ranging from one to four grammes daily.

It follows from these statements that the general health must be cared for, the hygienic surroundings the best possible, and all the excretory systems

brought freely into play.

Treatment of acute cystitis. The patient must be put to bed with the hips elevated. Strangury and pain will demand attention from the first visit. Heat and the anodynes are the best remedies to relieve the patient. Heat may be applied by the full bath, by the sitz bath, by the hot water bottle, and by rectal and vaginal douches. Of the anodynes, injections hypodermically of morphine combined with atropine act very promptly. Rectal suppositories of opium and hyoscyamus, twenty drop doses of the tincture of hyoscyamus or tincture of belladonna, act kindly. Sinapisms over the hypogastrium sometimes afford relief.

Infusion of buchu leaves seems to possess a curative value besides its diluent effect on the urine. Two teaspoonfuls of the leaves may be boiled in six ounces of water, and this quantity taken several times a day. For acute gonorrheal cystitis, irrigations of silver nitrate solution give the best results. A I in 2,000 or I in 1,000 solution of argentic nitrate is run slowly into the bladder through a catheter using 200 to 300 c.c. This may be done every other day. With the exception which I noted, irrigations should never be given in acute cystitis. If practicable all instrumentation of the urethra

and bladder should be avoided.

In the course of a week or ten days strangury and pain abate, and the patient feels fairly comfortable, i. e., in an average case. If the reaction has been adequate to overcome the irritant the patient will go on to complete recovery, and no treatment applied directly to the mucosa will be required. Unfortunately, this happy event too rarely happens, and frequently the surgeon sees his acute cases pass insidiously into the chronic form.

Treatment of chronic cystitis. Usually if the pa-

tient has been carefully treated during the acute attack the chronic cystitis is readily cured by a few irrigations of a boric acid solution. The chronic cystitis following a neglected or a badly treated acute cystitis presents an entirely different pathology. Strangury and pain are not prominent symptoms save during the acute exacerbations. The bladder wall is in a state of fibrosis, anæmic, thickened, and covered with pus. The treatment naturally suggests itself. Remove the cause, if possible, cleanse the bladder by irrigations, augment the inflammatory reaction, improve the local blood supply, and strive to aid absorption by the administration of potassium iodide.

Bladder irrigations come nearer fulfilling the requirements of treatment than any other procedure known. The irrigations must be given properly, intelligently, and the quantity must be sufficient to distend the bladder walls. It has not only a cleansing effect, but a hyperæmia is caused by the bladder distention. The irrigation may be repeated as often as is necessary to keep the bladder clean. In very filthy bladders, when the irrigations have to be repeated every few hours, it is best to insert a retained catheter. However, if there is much inflammation about the neck of the bladder, the patient will complain bitterly of the pain, and it may have to be re-

moved.

The irrigating solution may be plain sterile water. A very soothing solution is Thompson's fluid, which is composed of borax, sodium chloride, glycerin, and water. Boric acid, I in 50, is also very agreeable. The best results will be obtained by using the antiseptic solutions. The following are standard solutions: Argentic nitrate, I in 2,000 or I in 1,000; potassium permanganate, I in 6,000; bichloride of mercury, I in 60,000; oxycyanide of mercury, I in 40,000. It is a good plan to change the solution from day to day.

In the badly contracted bladder, Young, of Baltimore, has got very satisfactory results by using hydraulic stretching. That the method is safe in selected cases cannot be denied. The writer has seen some gratifying results follow this treatment in Dr.

Young's clinic.

In chrone cystitis of the female the short urethra will permit topical applications to be easily made. These prove very effective in the circumscribed cases. A ten per cent, solution of silver nitrate is

applied through the Kelly cystoscope.

The author is not in sympathy with the cystotomies done for the relief of cystitis in women or in men. It is questionable whether they should ever be done, with the possible exception of cystitis caused by a malignant growth in the bladder. The procedure is opposed in every sense to the pathology present.

Conclusions.

- I. Cystitis is an infection of the bladder.
- 2. The source of infection should be determined, and eradicated if possible.
- 3. When the surgeon is puzzled what is best to do for the patient, he must not make a hole in the bladder without a full appreciation of the results of such an operation.

4. A full knowledge of the pathology in a given

case is the key to the successful treatment of that

In the preparation of this paper the author has drawn freely from the writings of Adami, Caspar, Ford, Kelly, Keyes, Piersol, Skene, White, and

632 FULTON BUILDING.

TWO UNUSUAL CYSTOSCOPIC PICTURES.*

By J. Bentley Squier, M. D., New York.

The writer has chosen to report the following two cases before this association, one simply as a matter of interesting observation and record, the other hoping that it will draw out some discussion which will aid him in the management of it.

CASE I.—The first patient is a gentleman, sixty-three years of age, who presented himself with symptoms of prostatism of a year's duration. The most distressing condition was frequency of urination, which had become so intense that he would have to urinate every hour during the day and four or five times at night. Associated with this was severe pain across the loin. By rectum, one could feel a small, hard prostate gland. He had two ounces of residual urine. Cystoscopy being decided upon to ascertain the presence of median obstruction, an interesting picture presented itself. There was present a prominent median lobe, which undoubtedly was the cause of his prostatic symptoms, and in addition to this four definite ureteral openings. Squirting from each the characteristic swirl of urine could be distinctly seen. Two openings were normally placed at either end of the interuteric fold, the other two, one on either side, were anterior to these and some-what externally placed. Unfortunately, the patient refused to allow catheterization of these openings, as I had hoped to catheterize them with a stilletted catheter and then have a radiograph taken. I hope to persuade the patient to allow me to do this, as it is rather an interesting anatomical

The second case is one of ureteritis cystica chronica and is of such rarity that scarcely fifty cases have been reported. The majority of these have been discovered at autopsy, the patient dying of some intercurrent disease. In the cases already reported the condition of ureteritis cystica had also been more or less constant. As the ætiological factor of this rare condition is still uncertain I will give the patient's history in detail.

CASE II.—The patient was born in 1859, a healthy, normal child. He had the ordinary diseases of childhood. When fifteen years of age (1874) he was thrown from his horse, his foot catching in the stirrup, and he was dragged for a considerable distance before freeing himself. Following this accident the most serious result was the development of an attack of hæmaturia, which lasted a few days and subsided after rest in bed and expectant treatment only. No other urinary symptoms were noticed until 1882, when frequency of urination and burning at the vesical neck developed from apparently no exciting cause. The passage of a sound a few times relieved the discomfort. In 1888 he was refused a life insurance policy because of the presence of pus in the urine. This was the first time that he had any knowledge of an existing pyuria. In 1902, fol-lowing a large dose of quinine which he took for malaria (? symptoms malaise only, no chill or temperature), hæmaturia developed. As there was no pain attending the bleeding, this was considered by the attending physician to be due to the action of the drug. The hæmaturia lasted a few hours. Since this attack of hematuria he has had at intervals of a year or so two other attacks of hematuria. During the second attack, which developed while on a railroad train, he "felt something give way in the right groin," but there was no severe pain or any suggestion of renal colic. The hæmaturia disappeared in twenty-four hours and the patient did not lay up or refrain from going to business. to V order a Good armary Surger

So much for the hæmaturia, but to the patient's knowledge the pyuria had been present ever since the insurance examination in 1888, and the knowledge of this had been the only source of discomfort or anxiety to him. His general health had been excellent. The patient was married and has four healthy children. There was no venereal history; the only serious illness which he had had was an attack of typhoid fever in 1896. Ten years ago the patient had been treated for pyuria by bladder irrigation, etc., and urinary antiseptics. Two years ago a prominent cystoscopist is said to have demonstrated pus coming from both ureteral

To sum up the most salient features of his case, these facts stand out: 1, Pyuria known to be present for twenty years. 2, Four attacks of mild hæmaturia lasting but a few hours with no history of renal colic. 3, No relief from pyuria by bladder treatment carried out by competent hands. 4, No apparent ill effects as yet from it, patient in good health. 5, Increased frequency of urination during the day only, the interval being every two hours.

The patient reported first to me in January of this year. He had just been through a thorough radiographic examination by Dr. Lewis Gregory Cole, of New York, who reported as follows:

Diagnosis: "From study of the radiographic plates one is justified in making a negative diagnosis of renal or ureteral calculus of sufficient size to warrant operation. In the first plate of the bladder region the bladder was full of urine and was distended. In the next of this region the patient had just urinated, and if the bladder was empty then I believe that the walls are greatly thickened."

The uranalysis, which was made by Dr. Sondern, I give in

full with his remarks.

URANALYSIS.

| Reaction,acid, |
|--|
| Sediment,moderate, |
| Nature of the sediment,heavy, |
| Albumin, heat and acid test, marked trace, |
| Albumin, nitromagnesium test,marked trace, |
| Amount, Esbach test,same, |
| Bile pigment,negative, |
| Urea, |
| Indican,no excess, |
| Color,pale amber, |
| Odor,not offensive, |
| Specific gravity, |
| Sugar, cupric test,negative, |
| Sugar, bismuth test,negative, |
| Amount,none, |
| Acetone,negative, |
| Chlorides, |
| Phosphates, no excess. |
| |

| EXAMINATION OF SEDIMENT, |
|---|
| Obtained by centrifuge at 1,800 revolutions for five minute |
| Blood,none, |
| Pus,moderate amount, |
| Mucus,small amount, |
| Casts,none found, |
| Bacteria, no tubercle bacilli found |
| Epithelium,few bladder cells, |
| Crystalline and amorphous matter, .none, |
| Other structuresnone. |

Remarks: The specimen contains more albumin than I believe the pus present would account for, but no renal ele ments could be found microscopically with a lowered gravity and a corresponding relative amount of urea. There are no microscopical evidences to indicate that the pus is of renal origin, but the general character of the specimen creates some suspicion in this direction. A careful search for tubercle bacilli resulted negatively.

A cystoscopic examination made by Dr. James Pedersen and the writer presented a picture of a bladder whose base was studded with multiple cystic nodules varying greatly in size from the proverbial millet seed to the size of a small The largest cyst occupied the centre of the intrathe cystoscopic lamp. Ureteral catheterization was impossible with the direct instrument of Dr. Brown, owing

to the cystic formation obstructing the catheters in their entrance to the ureter. Unfortunately, I have as yet been unable to obtain a distinctive renal examination, as the patient has objected to further attempts at ureteral catheterization, even by the indirect cystoscope. From January, when I first saw him, until the first of this month, the patient has been under local treatment with practically no

diminution in the amount of pus in the urine.

Two weeks ago the patient was operated upon for excision of varicose veins of the leg. A few days after the operation a very marked increase of pus appeared in the urine with difficulty in voiding it and increased frequency. At the end of the act a few drachms of creamy, sticky pus would be voided with some stringy detritus made up of mucus, pus, and red blood cells. This existed for five days, when the creamy pus disappeared, the urine assumed its usual milky look, and the patient began to have an elevation of temperature, which elevation lasted for three days, the highest of which was 102.5° F. Whether the anæsthetic caused a lighting up of the inflammation, or whether some of the cysts evacuated themselves, leaving a raw surface for the absorption of infection, is merely conjecture.

Cystitis and ureteritis cystica chronica from the standpoint of the pathologist has been recognized for a long time. Dr. Bond Stowe, in a report of the autopsy findings of ureteritis cystica chronica read before the New York Pathological Society in February, 1907, has brought the literature up to date. There seems to be contention in its causation: (a) Parasitic origin; (b) degenerate epithelial origin, or retention cyst.

Giani, of Turin, Italy, has produced cystica chronica by inserting foreign bodies in the bladder of rabbits and also by curetting its surface. The presence of local inflammation seems necessary for its existence. The weight of evidence is against

the parasitic (protozoa) theory.

The questions which suggest themselves in reviewing the history are these: How much will the presence of the pus in the urine jeopardize the patient's chance of longevity in view of the fact that the disease is usually accidentally discovered at autopsy? What conservative local treatment will benefit him? What operative treatment can be offered if ablation of the mucous membrane has caused the cystitis to occur in animals?

20 EAST FORTY-SIXTH STREET.

CARSICKNESS.

By Ira S. Wile, M. S., M. D., New York,

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The commonest aberrant conditions often pass unnoticed in medical literature while the rarest para-

site will provoke volumes of discussion.

Considering the frequency of seasickness, little is known of its frequency, ætiology, pathology, se-

quelæ, or true therapeutics.

Carsickness is a very common condition, belonging to the same category of medical ailments as seasickness, though apparently not identical with it. A hunt for literature upon this subject scarcely repays the hunter. Its most noticeable feature is its paucity. Carsickness is referred to, at times, in an offhand way when the subject considered is seasickness. As Beard notes, "seasickness is not confined to sea—one may be seasick on land."

By carsickness is meant the series of unpleasant symptoms as giddiness, staggering, nausea, vomiting, etc., due to riding in a car, horse, steam, or electric automobile, or baby carriage.

A rational consideration of carsickness requires at least a consideration of the literature of seasickness. As the two conditions are largely regarded as identical in ætiology, we must critically consider the various theories held to account for the unpleasant phenomena attendant upon them.

Shelmerdine (1) deems seasickness a motor neurosis. He regards the condition as the result of a

lack of proper balancing.

Sumner (2) believes in the psychic origin of seasickness. He attributes the condition to the confounding of old ideas of perpendicular and angular planes. This idea is well expressed by him: "Here we have the unusual vision of objects flying towards us and these impressions with some people come into conflict with the standard firmly fixed in mind for such things as trees and fences and ground. This struggle to associate the unusual with the usual results in the well known sickness."

Darnall (3) regards seasickness as a symptom rather than a disease. He places the ætiological factor in a disturbance of the sense of equilibration. He recognizes that the vomiting reflex is in intimate relation with the whole organism. Much of the condition is regarded as an evidence of motion transmitted to the endolymph. Stress is laid upon the proximity to each other of the nuclei of

the eighth nerve and the vomiting centre.

Barnett (4), in considering the ætiological sources, dismisses the stomach as overrated; discards the liver as an impossible cause. The nervous system is regarded by him as all important. As an exciting cause, the motion of the boat is considered. Especial importance is placed upon the connection of the auditory and vagus nerves through the facial nerve. The true cause exists in an irritation of the terminal fibres of the branch of the auditory nerve distributed to the membranes of the semicircular canals. To quote exactly: "Any motion which is contrary to that usually experienced by the fluid contained in the semicircular canals will cause a set of symptoms exactly similar to those of seasickness." He divides the symptoms into those referable to (a) the semicircular canals, (b) the brain, (c) the stomach.

Waugh (5) attributes seasickness to the psychic influences of thinking of it. The direct cause he

believes to be cerebral anæmia.

Beard (6) regards seasickness as a functional disease of the central nervous system. Mechanical agitation is the basis of his theory of origin. Because vomiting is a symptom of cerebral concussion, he interprets seasickness as the result of a series of mild concussions. He appreciates the fact that train motion, swinging, rocking, etc., may produce a similar set of symptoms from the same cause.

This brief résumé presents some of the ideas presented to account for seasickness and its congener carsickness. A consideration of the application of these views to carsickness is interesting.

Is carsickness a neurosis? A neurosis is "an abnormal nervous action or affection of the nerves or nerve centres of a functional nature." As far as is known, there is no appreciable organic alteration of tissue causing carsickness, so it may be termed a functional neurosis. Carsickness is a reflex neurosis, being "a functional nervous lisease

whose origin resides in some irritation or part distant from that in which the affection is manifested."

Classing carsickness among the reflex neuroses, still makes it necessary to further account for its origin. Many points of origin have been suggested for seasickness and they must be studied with reference to their applicability to carsickness.

Irritation of the optic nerve or vestibular nerve is a satisfactory cause to many observers. Cerebral concussion or a psychic origin suffices for others. The stomach supplies an all sufficient cause for a

few investigators.

While seasickness and carsickness belong to the same general category of neuroses, they are not necessarily identical in origin nor course. Individuals who are carsick may be first class sailors, not knowing seasickness at any time. Poor sailors, vice versa, who are prostrated almost as soon as they set foot on a boat, may never know what carsickness means despite prolonged car journeys. Seasickness rarely affects the extremes of life—infancy and old age. Beard is correct, however, in stating that "even young children do suffer somewhat from seasickness. Carsickness is comparatively common in infancy—and old age is not free from it. In fact true carsickness usually begins during infancy or childhood.

Seasickness and carsickness are alike in being much more frequent among females than males, possibly owing to inherent differences in the organization of their nervous systems. Carsickness presents an interesting phase not noted in seasickness. An inherited tendency to carsickness appears to be handed down in the female line. I have found quite frequently carsickness in three generations of a family and only in the female members thereof. In two series of three generations, where the question was asked, seasickness was not a common experience. In one series, the grandmother and mother both came from Germany and did not suffer from mal de mer. Both were sufferers from carsickness. The mother had suffered from infancy. Her child was carsick at six weeks of age, the first time it was taken for a trolley ride.

Is carsickness due to a lack of proper balance? equilibrium is "a state in which all the skeletal muscles are under control of nerve centres so that they combine, when required to resist the effect of gravity or to execute some coordinated motion." It is very apparent that the sense of equilibrium can only result from the sum total of all sensory impressions. Sight, audition, olfaction, tactile sensation, vestibular sensation, muscular sense, all contribute to the sum of sensations essential for a sense of equilibrium. If any part of the sensory impressions is erroneous or departs from the individual normal, a disturbance of the sense of equilibrium results, and certain reflex conditions, such as nausea, pallor, rapid pulse, clammy skin, vomiting, etc., ensue.

If this view of equilibrium is accepted, carsickness may be said to be due to a lack of sense of equilibrium.

The question then arises, Which sensory impression is distorted in carsickness? Is it one sense or all the senses which lie at the bottom of carsickness? In seasickness a person may become seasick from seeing the motion of the waves (visual), feel-

ing the motion of the boat (vestibular), smelling the oil (olfactory), hearing the noise of the machinery (auditory), seeing another person retch (psychic and visual), sympathizing with a wretched fellow traveler (psychic), overeating (gastric), sense of fear (psychic), sight of food (visual), smell of food (olfactory), taste of food (gustatory), thought of food (psychic), inability to walk (muscular), etc. Any one of these causes may operate to cause a lack of true sense impressions, and as a result seasickness ensues.

Adults usually account for their carsickness on the basis of the motion of the cars. They feel the motion of the cars after they have gotten off the cars. When carsickness begins in adult life, it is almost as frequently found in males as in females. Visual defects are usually the origin. With the correction of errors of vision, the carsickness disappears. In women, uterine displacements are not uncommon predisposing causes of carsickness. The psychic, auditory, or olfactory senses are rarely causes of carsickness in adults.

The fact that infancy is the most common age for the beginning of carsickness—a time when sensory impressions are merely in course of development—makes it difficult to assign a positive cause

for the existence of carsickness.

The fact that carsickness occurs during sleep tends to exclude the visual factor in carsickness. It is also noteworthy that recognition of objects is hardly developed before the sixth month. Even the power of coordinated ocular movement is lacking before the third month.

The gastric cause is negligible, because babies subject to carsickness will vomit whether food has just been given them or their stomachs are empty. The time of day or time after feeding has apparently no relation to the condition. It matters not whether the child is fed on mother's milk, water, cream, or coffee, so far as carsickness is concerned. On the other hand, babies that vomit easily from overloaded stomachs or for other reflex causes may ride on cars free from any disturbance.

Cerebral concussion, it is true, does cause vomiting, but children, subject to carsickness, suffer many severe concussions without any vomiting at all. And cerebral concussion severe enough to cause vomiting would cause more lasting effects than are apparent in carsick youngsters. The theory of cerebral concussion fails to explain the persistent sense of car motion.

The irritation of the vestibular nerve by movements of the endolymph of the semicircular canals appears to me to be the most reasonable and satisfactory explanation of the reflex causing carsickness. It is important to note that carsickness, begun during infancy, may persist throughout-adult life. There may be a gradual disappearance after puberty. The sickness may become moderate until only a slight feeling of nausea remains—or the sickness may only be induced after a gradually increasing period of car riding. There is no close relation between carsickness, sickness from swings, elevators or carrousels. Fundamentally they may be on the same basis.

Koellereutter (7) has determined that the auditory nerve reacts to irritation within a few hours

after birth. It is well known that during infancy the ears are particularly sensitive to sound. It is not unreasonable to believe that the vestibular branch is just as acute as the cochlear branch. The ear functions are the best developed in infancy, and are more important in determining equilibrium during the early period than the other special senses. Even tactile sensation is imperfect throughout the entire first year of life.

Wells (8) regards the majority of cases of vertigo as dependent upon disease of the auditory apparatus. The proximate cause of aural vertigo he places in the semicircular canals and vestibule of the labyrinth, while appreciating that actual disease of the

labyrinth need not exist.

Darnall calls attention to the vertigo and vomiting often caused in children by whirling around. The circular motion transmits its impulse to the endolymph. When the child ceases to whirl the motion of the endolymph does not cease immediately, and the child has the sensation of going round. This is a persistent sensory impression due to the unnatural disturbance of the endolymph. The sensation of persistent motion as described by children able to tell their sensations from carsickness speaks for the disturbed motion of the endolymph. Savory (II) makes this disturbance of the endolymph the real ætiological factor of seasickness.

Gray (12) says: "There can be little doubt, at any rate in mammals, that the functions of the canals and vestibule are correlated in some way with the extent and delicacy of the movements of the

head upon the trunk.'

Friedberger (9) and Fröhner describe a physiological vertigo of horses transported by boat or railroad. Hering states that seasickness is observable in dogs as well as horses. Fowls, too, are subject to carsickness. The occurrence of carsickness in these animals is naturally opposed to a psychic cause being the whole origin of seasickness and carsickness.

It is noteworthy that in the animals in whom maintenance of equilibrium during motion is most essential, as the fishes and birds, the semicircular canals are particularly well developed. Fishes, in fact, have practically merely semicircular canals. Experimental work on birds has shown that section of the semicircular canals causes the bird to sprawl

and go through forced movements.

Ménière's disease with its vertigo has long been attributed to disease of the labyrinth. The semicircular canals are recognized as the main factors in equilibration. Gowers has stated that "in nine cases out of ten in which there is definite giddiness, not epileptic in nature or obviously due to organic brain disease, it is due to a morbid state of the labyrinth or auditory nerve endings." Without going into all the anatomical and physiological details, I have come to the conclusion that carsickness is a motor neurosis due to a disturbance of equilibrium, dependent upon irritation of the vestibular nerve, originating in disturbance of the endolymph.

A few practical points have arisen in consideration of carsickness. Parents seldom say their children suffer from carsickness unless specifically asked. The vomiting of carsickness may at times suggest an overloaded stomach or the onset of an infectious disease. In adults carsickness has frequently caused a suspicion of drunkenness to fall upon its victim. Carsickness has been mistaken for appendicitis. It is most important to distinctively exclude carsickness in all cases of acute illness occurring on trains and other cars, just as one must distinguish seasickness from other sickness at sea. The condition of a carsick person may appear most serious-in fact, suggest a fatal outcome, but this does not occur. Carsickness is so common that a narration of cases would not add anything to the subject. A careful study by otologists and pathologists of intraaural conditions in children known to have carsickness might give some little light upon the true proximate cause of what is now merely termed a neurosis.

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2493 BROADWAY.

SOME IMPORTANT POINTS IN THE ANATOMY AND SURGERY OF THE PERITONÆUM.*

> By Arthur J. Wolff, M. D., Hartford, Conn., Gynæcologist to St. Francis Hospital.

In the primary phases of ontogenesis there appears between the two layers of the divided mesoderm an irregular sinuous space which represents the origin of the pleuroperitoneal cavity. primitive coeloma, at first single, is soon divided by two vertical partitions (mediastina) and a horizontal one, the diaphragm, into secondary cavities, the pleural, pericardial, and peritoneal. Thus, all the splanchnic serosoties, distinct in descriptive anatomy, are in reality contiguous diverticula of the same system, the original unity of which is demonstrated by their development.

This close embryonogenetic relationship is again to be seen in pathology, where the same general laws prevail as to the ætiology, pathological anatomy, and clinical evolution of the different varieties

of pleurisy, pericarditis, and peritonitis.

If these points are carried in mind the apparently complicated ætiology of these affections, and particularly of peritonitis, would be greatly simplified. However, if the common origin of these serous membranes explains the analogy of their morbid tendencies, the diversity of the anatomical relations which they bear to neighboring organs, produce pathological conditions entirely different. Thus. while the pleura, pericardium, and the meninges envelop viscera which are normally aseptic, the peritonæum, on the contrary, covers the most septic of all the organs of the body, the intestines.

^{*}Read before the Section in Surgery of the Hartford (Com) Medical Society, May 25, 1008.

At this place a most thin and fragile barrier, the intestinal wall, separates the most infected cavity of the economy from a membrane which is the most sensitive to infection. Thus, while the other serous membranes are the most often infected in an indirect manner from the circulatory system, the peritonæum, on the contrary, derives pathogenic agents from the most proximate sources; is infected directly by effraction, contiguity, or continuity, dependent upon the septic organs which it invests.

Amongst the unfortunate peculiarities of the peritonæum (unfortunate from the medical and surgical standpoint), is the fact that when the inoffensive saprophytes which exist within the intestines are transplanted upon it, they soon become most virulent pathogenic microbes; and between these two contrary conditions of bacterial activity there is but the minute thickness of the intestinal walls; and yet, as Wegner states, the surface of the peritonæum is so extensive as to be equal to the whole integument of the body.

Turning our attention for a moment to the anatomy of the membrane, we find that it is mostly constructed of connective tissue as a framework, superficially of a network of white fibres, while situated more deeply are to be seen large numbers of elastic fibres, which, as has been remarked by Baker, give to it its extensibility and adaptability. "No matter how much the abdomen may be distended by pregnancy or ascites, the peritonæum returns to its normal size when the distending body is removed. When the organs are displaced, the peritonæum stretches and follows them; when they return to position, it returns also, its elasticity enabling it to do this without wrinkling. Hence it occurs that the so called cavity of the peritonæum is only a virtual one, for when the organs are in a state of health, the parietal and visceral layers are closely applied to each other. In case of effusion

the cavity becomes real."

Covering the fibrillar structure of the membrane is to be observed a layer of flat endothelial cells, placed in such a maner that they are set together by their edges, not unlike mosaic work, and in certain parts, particularly upon the diaphragm, there are larger areas in which are found larger cells possessing a granular structure, which are described by

into the sac, the layers are at once separated, and

Klein as "germinating cells." Simple though the structure of the membrane appears, it is extremely rich in bloodvessels, and, owing to the cellular and connective tissue arrangement, the bloodvessels are formed in it with very great rapidity; thus, while the membrane is light gray in appearance in health, or in the inactive state, it very quickly becomes of a deep red color when attacked by inflammation. Beside the bloodvessels, the peritonæum is especially rich in lymph capillaries which ramify in great numbers all through it, thus making the cavity the most important one in the body in its relations to the lymphatic system, and explaining many of its pathological and physiological characteristics. The lymph capillaries here found in immense plexuses simply follow the rule that is found to be true in other portions of the body, that this is one of the most important functions of the connective tissues viz., to serve as a bed or

origin to the lymphatic vessels. I wish it were possible to enter more fully into the anatomical structure of the peritonæum in its relations to the lymphatic system, but I have only time to touch upon these points and to call your attention to one or two points of physiological importance, and of great interest to the surgeon.

Following Foster's description of the anatomy and physiology of the peritonæum, we may say that wherever bloodvessels go in the peritonæum, lymph spaces go too. Thus, it is to be remembered that certain parts of the blood plasma pass through the walls of the bloodvessels and become lymph in the lymph spaces. From here it is gathered into larger lymphvessels, until, at last, it finds its way into the blood current again, either into the thoracic duct which joins by a valvular opening the junction of the left jugular with the left subclavian veins, or in the smaller, less important, right lymphatic trunk with the same vessels on the right side.

Thus a constant flow of lymph is going on throughout the whole extent of the peritonæum, as in all parts of the body, from the bloodvessels through the lymphatic vessels, and back again to the blood, and in this regard it is important to remember, I, that the lymphatic vessels are richly supplied with valves, while the lymphatic capillaries are unsupplied with them; 2, the aspiration effect of the thorax, which tends to suck the lymph from the terminal trunks into the veins, and thus to maintain the lymphatic current; and 3, the effect of pressure at the periphery, which really originates in the left ventricle.

From what I have said so far, the peritoneal cavity, as well as the pleural, pericardial, and other large serous cavities, are really parts of the general lymphatic system, and the serous fluid which is at all times found in them is in reality lymph.

Another important point of interest to the surgeon in the histological structure of the peritonæum is the existence of "stomata" formed by a converging group of cells, which stomata are surrounded and guarded by a crown of granular cells. These are much more numerous in the centrum tendineum of the diaphragm. The orifices are guarded as in other places, but here they seem to have a more regular arrangement as well as a more effective function.

This portion of the diaphragm seems to be more richly supplied, too, with lymphatic vessels. Now, it is very well known that the movements of the diaphragm in breathing greatly increase and assist the flow of lymph through the stomata in this situation. and it is also well known that if a solution of Berlin blue is injected into the peritoneal cavity of a living animal, it soon enters into and injects the lymphatic vessels of the diaphragm; and the same result may be produced by injecting the coloring material into the cavity of the dead animal, and hanging it with the head downward, or even while in this position pouring the coloring fluid into the hollow of the diaphragm, and then producing movements of the diaphragm by efforts at artificial respiration. Thus bacteria and other infectious particles can find their way into the lymphatic system and into the blood stream, and to this fact is due the "postural" treatment of perturnus so highly lauded by Fowler, Kelly, and some of their followers.

Perhaps I have not sufficiently illustrated this principle by which lymph is carried back into the blood current along the regular and irregular lymphatic channels from whence it originally came, but I have only wished to recall to your minds the physiological fact that it occurs, and that this circulation is no uncertain thing; and, furthermore, that the rapidity of the current is increased by rhythmical contractions of the lymphatics themselves, which are (at least the larger ones are) distinctly provided with muscular walls.

There is a peculiar interlacing of muscular fibres above each valve, which suggests that these act after the fashion of a tiny heart, and by rhythmical systole drive on the fluid which, by the action of the valve below, collects at the spot. Some of the lower animals, as the frog and other amphibians, are actually provided with these pulsating lymph hearts. All the experiments, which I have cited, were done by injecting the fluids into the closed peritoneal cavity. But, if the cavity is opened, it will be found that the injection of the Berlin blue solution does not reach the centrum tendineum; on the contrary, a large quantity of lymph immediately begins to flow from the opening made, which carries with it the coloring material introduced, and this continues until the opening is either walled off by exudate separated from the lymph, or is closed. In other words, the current flows in the direction of the least resistance, and the amount of transudate is increased, due to the vasodilator impulses passing through the splanchnic nerves. This latter produces, of course, increased pressure in the capillaries, and results again in increased transudation.

The importance of the nerve supply in this regard will be appreciated when it is considered that parallel to the subperitoneal arterioles are distributed throughout the whole abdomen numerous sympathetic polyganglionar plexuses, and scattered here and there, in the same, may be observed numerous corpuscles of Pacini, which provide the peritonæum with a nervous supply perhaps richer than in any other portion of the body. This explains why it is that, while in the normal condition the peritonæum being almost devoid of sensibility, the slightest morbid activity suffices to render it most extremely

The peritoneal surface represents, then, a vast nervous surface, from which any powerful irritation reflects through the sympathetic nervous system upon the cardiopulmonary circulatory system and profoundly disturbs their equilibrium. We have here the explanation of the crises of asystole often observed in the beginning of a peritonitis, and also the manifestations of morbid innervation so often seen in these cases; and these, grouped together, constitute the peritoneal syndroma; as vomiting, constipation, meteorism, pain, tachycardia, alteration of the countenance, of the pulse, etc. It explains, also the ensemble of that group of nervous symptoms simulating peritonitis, described by Gabler under the name of "peritonism," which is very apt to be the cause of grave errors in both diagnosis and prog-

With these principles in view, we come, new,

to consider the peritoneal cavity from the surgical standpoint.

I do not hesitate to divide acute peritonitis into two varieties: The first, septic peritonitis, caused by pyogenic microbes, and the second, putrid peritonitis, caused by saprogenetic bacteria.

Of course, we can easily understand how one of these forms may occur during the course of the other, caused by the secondary migration of the bacteria of the intestines into a serous membrane already infected by pyogenetic microorganisms, or the ultimate predominance of septic bacteria over saprogenetic organisms in a case of mixed infection.

This division of acute peritonitis into two varieties corresponds in reality to bacteriological and clinical facts that are well known, of which the mixed form is by far the most frequent.

There is also another form of peritonitis of amicrobic origin, which one may call toxic, caused by the toxines which result from bacterial growth, or by general autointoxication without the assistance of bacteria, which is sometimes observed in Bright's disease, diabetes, etc., but, for our purposes, we may remark that every acute peritonitis we have to deal with is secondary to an infection of the peritonæum by bacteria which have gained access from without, or extrinsic infection, by intrinsic, local, direct infection, as from septic portions of the abdomen; by the general circulation, as during the course of the septicæmias, which may be called general intrinsic infection, indirect or metastatic infection.

Peritonitis which supervenes as the result of any traumatism, solution of continuity, operative or otherwise, is due to extrinsic infection. In general, one may say that by far the greater number of cases are due to extrinsic infection by the Bacillus coli communis, or the pyogenetic streptococci and staphylococci. In these cases the severity of the disease varies within the widest limits, and the poison may be so virulent as to cause death within twenty-four hours; and all that may be found at the autopsy may be a slightly reddened condition of the visceral peritonæum and a few ounces of blood stained serum in the most dependent portions of the cavity; or the disease may be accompanied with large flakes of tough lymph the thickness of chamois leather, gluing together large portions of the intestines, and pockets of pus may be seen here and there shut off from the general cavity or between the coils of the intestines shut in by lymph.

The explanation of the variation of the severity of the infectious process may very easily be found in the variability of the virulence of the organism producing it. Klecki has recently shown that the greatest variability in the virulence of Bacıllus coli communis can be produced by varying the conditions of growth in the intestines under just such circumstances as those in which the surgeon is liable to have to deal with this organism.

A simple saprophyte in the normal intestine. Klecki has demonstrated that equal quantities of Bacilli coli injected into the peritoneal cavity are much more virulent if taken from the ileum than those taken from the colon; and that the latter are much more active than that taken from the jejunum. The explanation for this may be found in the variation of the chemical reaction of the contents of the

mtestine at different heights. Klecki now made comparative investigations of cultures of Bacilli coli taken, first, from experimental strangulated hernia of the dog; second, that taken from a normal loop of intestine. He found, amongst many other characteristics of differences of virulence, that while it required a very large dose of a bouillon culture from the normal intestine to kill a guinea pig, that derived from the strangulated loop was so extremely toxic that it required but 1/6 c.c. to kill a guinea pig of the same weight when injected into the peritoneal cavity.

But Bacillus coli communis is not the only organism to be found in the intestines, and the variability of their virulence is similar to that of Bacillus coli; so that this symbiosis gives rise to a polyinfection when the organisms find their way into the perito-

neal cavity.

Another point brought out by the investigations of Klecki. He found that when he injected into the healthy peritonæum the toxines of *Bacillus coli*, an aseptic peritonitis was produced, which in a short time became transformed into a septic peritonitis by the passage of the germs through the intestinal wall into the cavity.

These experiments were repeated by Roger, and he has shown that appendicitis may be caused in the

same manner.

Arguing from the standpoint of the facts to which I have called your attention, the surgical treatment of cases of peritonitis is certainly indicated, especially when it is remembered that in general peritonitis medical treatment is of no avail. I have nothing to add to the ordinary technique: Certainly the laparotomy is simple enough. My opinion is fixed, however, on the following rule: Avoid too much irrigation in local peritonitis: use systematic and careful irrigation with large quantities of sterile water or normal saline in generalized peritonitis. My experience has led me to adopt this practice, and

I have had no cause to regret it. I cannot say that I am an advocate of the withdrawal of coil after coil of inflamed, paralyzed, and distended intestine, with the wiping of the peritonæum, as I have often seen done, and as recommended by Kelly and his followers. Such procedures may be very successful in his skilled hands, but I have never seen any marked benefit result from it in actual practice, and I have seen patients "practically disemboweled," to use Kelly's words, for the purpose of cleansing both coils of intestine and the peritoneal cavity. I never saw a patient recover after such manipulation, and I would record my vote against it in any advanced case of general peritonitis. Another vicious practice is that of tapping the intestines with a trocar or needle for the purpose of relieving the distended gut, in which I fully agree with Dr. Greig Smith, who says: "I would characterize the tapping of the bowels for tympanitis as a simple trifling with the complaint, and as dangerous trifling."

From what I have said, it may be inferred that I do not believe in the complete closure in all cases of laparotomy. When the peritoneum is wounded in ritiated, exudation occurs in direct proportion to the extent of the traumatism, and while there exists, as we have seen, great power of absorption, there

are circumstances in which the fluid cannot and will not be absorbed as rapidly as it is exuded; we must also consider and deal with the enormous quantity of sanguineous oozing which may occur from raw surfaces, and which may add in no small degree to the amount of the exudate. Thus it is imperatively necessary to avoid the collection of liquid in the pouch of Douglas, where it is extremely likely to undergo decomposition, occasionally from contamination through the intestinal coats; and if, in such cases, we feel that any doubt exists as to the transudation being likely to be greater than the absorption power of the peritoneal membrane, in cases where bleeding is apprehended, or septic or pyogenetic influences are at work, we certainly ought to drain. Another rule which has the high authority of Greig Smith, and which I have found in my experience to be true: "The older the patient is, the less active is the absorption by the peritonæum, and, therefore, the greater necessity for draining" (Greig Smith, ii, p. 126).

It being determined to drain in a given case, the

method of drainage is of grave import.

There is a certain class of cases where it is desired to set up a plastic process as soon as possible, a condition which is best obtained by placing naked gauze in the cavity. A channel is obtained, in which the affected area is soon isolated from the general cavity, and placed in the best condition for inspection and treatment without any danger of contamination.

But the gauze drain by its capillarity gives vent to a large quantity of liquid lymph, very soon becomes saturated, and in turn wetting the outer dressings, which, if properly changed, keep up the current of lymphatic action toward the drain, until it is completely walled off by plastic exudate. That the withdrawal of liquid through the drain is directly from the blood current is shown by the fact that when the drain is used the patient complains of great thirst very early. At this place I wish to call attention to the following from Martin in his monograph, After Treatment of Abdominal Section, for the purpose of expressing my dissent in as strong terms as possible: "We should insist upon total abstinence from fluids for forty-eight hours after the operation."

I consider these directions wicked and unscientific; such patients suffer cruelly with thirst. In cases where the drain is used, I allow plenty of water by the mouth, in fact, I encourage them to drink. If in bad cases, the usual large doses of saline as interstitial injections, or large quantities of water are put into the rectum, no better means can be used for cleaning out the peritoneal cavity. The extensive use of water increases the flow of the liquid through the capillary drain, and, for the reasons before stated, as the flow of lymph is reversed towards the drain, or in the direction of the least resistance, the toxines are washed out, diluted. and carried off very promptly. I have had cases in which the peritonæum was so thoroughly cleansed in this maner that the change in the condition of the patient was astonishing; while the alteration for the better in the odor and appearance of the liquid drained was remarkable. The use of large quantities of water, with good drainage, in these cases, directs the current of serous exudate towards the artificial opening, carrying with it the dead leucocytes laden with dead infectious bacteria, and, at least to a great extent, if not wholly, prevents their being carried through the cellular stomata in the diaphragm and thence into the general circulation. This is the principal reason that I urge the copious use of water and very free drainage in these cases.

The drain I use is prepared and applied in the following manner: Strips of plain gauze are made from two and one-half inches to four inches wide, and from twelve inches to fourteen inches long, according to the extent of drainage desired. gauze strips are of moderately fine mesh and of three thicknesses; it is well to have the three layers of the material sewed together at the ends. In the application of the drain, the stump of the suppurating tube, or focus of infection, is kept well in view, or secured by a proper clamp; a strip of the drain is doubled in the centre, thus making six folds of the material; this is placed behind the stump, and one folded in the same manner as the first is placed in the anterior portion of the wound, in front of the stump. One is put on either side, and we now have a "coffer dam," the spot of infection being at the bottom of the gauze dam. By separating three layers of the gauze, on each of the four sides, it will be a very simple matter if, in the judgment of the surgeon, it is necessary to pass a glass tube to the bottom of the drain for the purposes of irrigation, etc., without disturbing the walls of the wound, which in a very short time project large and very vascular granulations into the meshes of the gauze, thus completely and effectually walling off the part drained from the rest of the peritoneal cavity. presence of the gauze stimulates the growth of richly vascular granulations, which very shortly glue the outside and second layers of gauze to the whole tract of the wound.

Contrary to general opinion, I believe this to be of great advantage, as the separation of the infected spot is effectually secured by this means. This is one of the many reasons that I have for not using the "cigarette" form of drain, which I have wholly

discarded in my work.

But, with the ordinary method of gauze draining, the presence of the granulations in the meshes of the fabric is an objectionable feature to many, because it renders the removal of the pack at times very difficult, if not dangerous, while if my directions are followed, these disadvantages are completely obviated. In order to remove it, it is only necessary to separate the four sides of the "coffer dam," and, taking each side separately, count three layers from within outwards, and, grasping these with the forceps, pull gently upon them, when the gauze will strip away from the bottom towards the top of the opening, the strip when removed extending to its original length. This manipulation is repeated with the other three pieces of gauze forming the rest of the drain, and the whole track will be easily cleared from the gauze without any pain to the patient, or any injury to the tissues and granulations, and with complete absence of hæmorrhage.

I feel that the points brought out in this paper are worthy of the careful consideration of the surgeon.

, I SPRING STREET.

OXYGEN IN THE TREATMENT OF TUBERCU-LOUS PERITONITIS.*

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Three types of tuberculous peritonitis are recognized, the ascitic form, the fibrous form, and the ulcerative form. Many plans of treatment have been advocated for this condition, and while divergent views exist as to the efficacy of the various forms, practically all authors are in accord that it is only the first type that is amenable to treatment. Thus Moynihan (1) states: "The opinion of surgeons is now almost unanimously in favor of operation in the ascitic form and against operation in the fibrous and ulcerative forms. Operations performed upon patients affected by the fibrous form of the disease are rarely productive of good results and some harm may undoubtedly be done by the attempted separation of adherent coils of bowel." The American Textbook of Surgery (2) says: "It is only the ascitic form that is amenable to surgical treatment." According to J. B. Murphy (3), "Surgery attains its best results in the dessiminated serous form. It is of comparatively limited scope in the fibrous and ulcerous varieties.

In a general way two forms of treatment are recognized, the medical and surgical. Surgical treatmen had its beginning in 1862 when Spencer Wells, mistaking the encysted dropsy of tuberculous peritonitis for an ovarian cyst, opened the abdomen. It was not until 1884 that abdominal section as a therapeutic measure was urged by König. Surgeons are now agreed thaf abdominal section is the best method of treatment in the ascitic variety. Against this view Borchgrevink, who reported two series of cases, one treated by surgical means and one entirely by medical measures, holds that the first method is inferior to the second. He also states that approximately one third of all cases recover spontaneously or under careful medical treatment.

The advantages of surgical treatment have been studied by many writers. Rörsch reports 358 cases treated surgically. Of these thirty-two patients died as the result of the operation; fifty-one patients died in eighteen months from a recurrence or an extension of the disease; 275 patients showed improve-ment, in sixty-three of these the patients were in good health and apparently free of the disease after a lapse of two years. Wunderlich reports 344 cases; eighty-one patients died as the result of operation; eighty remained well after a lapse of three years. Moynihan states that "if those patients suffering from the ascitic form are alone treated by operation the results will show a permanently good result in at least fifty to sixty per cent. of cases." Czerny reports forty to fifty per cent. of cures. Murphy says: "With proper selection of cases and especially extending the surgical procedure it is reasonable to expect seventy-five per cent. of cures."

In addition to simple laparotomy other additional methods have been advocated from time to time. In 1903 J. B. Murphy suggested the advisability of revolving the focus of infection in addition to evacuating the fluid. W. J. Mayo, who adopted the suggestion, reports that in many instances where sim-

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ple laparotomy failed, a secondary operation for the removal of the focus of infection resulted in a permanent cure. A. Döll advises the use of vioform (iodochloroxyquinoline). He conducted a series of experiments on rabbits. In sixty per cent. of the cases the process was cured; in twenty-five per cent. there was an improvement of the condition, and in sixteen per cent. no favorable action occurred. After a simple laparotomy 331/3 per cent. of the cases showed a transient improvement, and in 66% per cent. no favorable effect could be seen. There was no indication of spontaneous cure in any of the controls. The solution used was 0.5 gramme of vioform to I litre of salt solution.

Rendau advises that one part of camphor and two parts of naphthol, fused by heat to make a liquid, be spread over the peritoneal surfaces. Free irrigation of normal salt solution and dusting the surfaces with iodoform have many advocates. age has been suggested, but the danger of permanent fæcal fistula has caused it to be abandoned as a

regular procedure.

Many theories have been advanced to explain the reason of surgical cures, but none have proved satisfactory. Head asks: "Is it not possible that in a large proportion of cases of the ascitic variety section may evacuate the débris after Nature's successful contest and by relieving tension and restoring normal contact aid in the cure?" Hildebrandt and Veit believe that when the accumulated serum is evacuated suddenly it is replaced by serum having bactericidal properties. Murphy thinks that "the cure by operation is effected by the subsequent inflammatory reaction with its cell proliferation which encapsulates the foci on the serous surfaces." Gatti believes that the fluid poured out by the peritonæum after operation is antibacterial.

The foregoing statements show that by the plans of treatment now in vogue the fibrous and ulcerous forms of tuberculous peritonitis are not amenable to treatment, and at best only seventy-five per cent. of the ascitic forms can be cured. Further, that no positive reason can be given for the cure by surgical intervention, so that it is impossible to devise a scientific form of treatment. For these reasons I have the temerity to suggest a plan of treatment which has given me admirable results. In April, 1904, reasoning from a false hypothesis, I was led to try the use of oxygen in all cases coming to me for treatment. In all I have used the method in fifteen cases; of these four were the fibrous variety. In this paper I intend to report only the latter cases, reserving the ascitic type for a later report, following further investigation.

CASE I.-Mrs. K., admitted to St. Agnes's Hospital March

6, 1904.
Examination: Uterus posterior, pelvis blocked, abdomen scaphold, examination of heart and lungs negative.

Diagnosis: Pelvic peritoritis.
Operation: Median abdominal incision. On opening the abdomen the intestines and pelvic structure could not be seen, being covered with a thick layer of lymph. The parietal peritonæum was covered with small tubercles. attempt was made to separate the adhesions, but was found to be impossible. I succeeded, however, in separating the uterus from the intestines. Oxygen was introduced the peritoneal cavity for twenty minutes. A glass d age tube was placed behind the uterus and daily inflation of abdomen with oxygen practised through the tube. The patient left the hospita with a need tistula

Her physician reported two months ago: The fæcal fisrefer physician reported two months ago. The factal natural is now closed. Patient is in good health and apparently free from her old trouble. She has gained weight and is able to attend to all her household duties. She con-

and its after to at their to at their inspection duties. She considers herself perfectly well.

Case II.—Mrs. H., admitted to the Medicochirurgical Hospital January 30, 1907.

Examination: Pelvis blocked, impossible to outline any of the pelvic organs; examination of heart and lungs

Diagnosis: Pelvic peritonitis.

Operation: Median abdominal incision. On operation the intestines and pelvic structures were bound together by dense adhesions. Tubercles scattered everywhere. Oxygen was introduced into the peritoneal cavity for thirty minutes. Incision closed, no drainage.

I examined this case three months ago. The abdomen was then soft. The pelvic organs could be outlined and the uterus was freely movable. Patient was in good health. She had gained weight and considers herself cured. She was able to fill her part regularly in a one night stand the trivial examination.

theatrical organization.

Case III.—Mrs. R., admitted to St. Agnes's Hospital March 4, 1906. Examination: Pelvis blocked, uterus fixed, abdomen scaphoid, examination of heart and lungs negative. No

history of pelvic infection.

Diagnosis: Probable adhesive tuberculous peritonitis.

Operation: Median abdominal incision. The intestines and pelvic structures were densely adherent. Operative diagnosis confirmed provisional one. Oxygen was intro

duced into the perioneal cavity for thirty minutes.

I examined this case a short time ago. Patient was then apparently in good health. She had gained weight and considered herself cured. Pelvic organs could be easily outlined, uterus was freely movable.

CASE IV.-Miss H., admitted to St. Agnes's Hospital

March 6, 1907. Examination: Free fluid in the peritoneal cavity. Examination of heart, lungs, kidneys, and liver negative.

Diagnosis: Ascitic tuberculous peritonitis.

Operation confirmed diagnosis. The intestines and omentum were lifted up above the umbilicus and densely adherent. Small tubercles everywhere. Encysted fluid below the intestines. The fluid was removed and oxygen introduced for thirty minutes. After operation she had a slight return of the fluid.

Two weeks ago her doctor reported as follows: Fluid disappeared shortly after her arrival home. There has been no return of the condition. She has gained weight

and is apparently in good health.

I use the method as follows: The water bottle of the oxygen apparatus is sterilized and filled with sterile water. The tube leading from the bottle and the rubber tip are sterilized. The tip is covered with several thicknesses of sterile gauze. The oxygen is introduced through the abdominal incision until the abdomen becomes inflated. The incision is now closed with gauze, and the oxygen is allowed to remain for several minutes. The gas is then allowed to escape, and the peritoneal cavity is filled again and again.

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THE ÆTIOLOGY AND TREATMENT OF ECZEMA. BY ZAMA FELDSTEIN, M. D.,

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In recent years most extraordinary progress and most wonderful advancement in the treatment of disease have been made in medicine. This is particularly true of cutaneous diseases, since there always has existed such diversity of opinion as to their causation and mode of treatment. Eczema is conceded to be one of the most obstinate of all diseases of the skin; it certainly is by far the most frequent, and hence practically the most important of all cutaneous affections. Erasmus Wilson, Malcolm Morris, Bulkley, and McCall Anderson agree that eczema forms one third of all skin diseases that come under treatment.

The causation of eczema has for centuries been a source of mental anxiety and controversy amongst the members of the medical profession, arising from a misunderstanding of its inherent nature, cause, and progress. The general impression until quite recently has been that eczema is produced by either local irritation or some constitutional impairments. We have been told that eczema may be caused by a disturbance in the gastrointestinal canal, producing an infection, or that it may be produced by gouty states, or some other indefinite general disturbance.

Unna, with his conception of the parasitic origin of eczema, has revolutionized ancient dermatology. He distinguishes twenty-three different types of cocci.

Eminent dermatologists of to-day have proved beyond doubt that eczema is primarily caused by the direct action on the skin of microorganisms or their toxic products. In making cultures they have found cocci of the type of the Staphylococcus pyogenes albus, Staphylococcus pyogenes aureus, and the Streptococcus pyogenes. The local infectivity and chronicity of eczema, the purulent manifestations which occur so easily, are no doubt ascribable to the presence of these microorganisms.

For its production two conditions at least are necessary: Firstly, a predisposition or special irritability of the skin; secondly, an exciting influence which brings this irritability into action. Cases of simple seborrhoea or dermatitis are frequently transformed into an eczema, and there can be little doubt that this is caused by the action of microorganisms

and the toxines which they secrete.

I hold that eczema is a parasitic disease, and the only thing necessary to produce an eczema is the congestion of the skin, which may be produced by constitutional ailment or defect, or by outside influences, such as cold or chill, and further I am of the opinion that the parasite, having been once called into activity, as it were, the primary cause can be cured, but the effect, i. e., the parasite, remains until destroyed by a parasiticide sufficiently penetrating to establish contact, and sufficiently stimulating to restore the skin to its natural activity. Neisser has summed up his belief as to the ætiology of eczema in the formula, "No eczema without micrococci."

Dermatologists the world over are gradually accepting the parasitic theory of eczema, because it is impossible to believe that parasites known to possess certain pathogenic properties can be present in every case of eczema, and in such numbers as they have been proved to be by most competent observers, without having a decided effect on the character and severity of the disease.

In the treatment of eczema we find that the majority of remedies used are of an antiseptic nature. That it is purely a parasitic disease, produced by

some local toxic or microbic irritant, and can only be treated locally, is proved by the fact that such drugs as resorcin, sulphur, ichthyol, salicylic acid, and creolin, all of which are well known antiseptics, are constantly being used in the external treatment of eczema. Being a parasitic disease, the constitution, when involved at all, plays but a secondary part in the process. There is no specific for eczema. In every case the great aim should be to cure the lesion as rapidly and as thoroughly as possible.

The local treatment by the application of a penetrating, stimulating parasiticide is usually all that is necessary to complete a cure, but where the constitution is involved, appropriate constitutional remedies must be employed. I do not want to deprecate the constitutional treatment, but the latter treatment is only useful as an adjunct, and that is why I assert that, where the constitutional treatment is indicated, it is only necessary as an adjunct to the local treatment. It seems to me that it is a fallacy to look upon eczema as a provision of Nature for the elimination of toxic principals resulting from constitutional and often hereditary disorders of nutrition.

Tar and its derivatives and mercurials, which penetrate the skin, are the most active remedies, because they are parasiticides. Carbolic acid, aluminum acetate, potassium permanganate, and thymol are other antiseptics which have proved to be of great value.

In the treatment of eczema the following aims are to be constantly kept in view: 1. Destroy microorganisms. 2. Protect the inflamed surface from further microbic invasion. 3. Regulate the strength of the remedy employed to the tolerance of the patient's skin. 4. Soothe when acute. 5. Stimulate when chronic.

In using parasiticides it is always essential to carefully regulate the strength of the remedy in accordance with the sensitiveness of the patient's skin and the severity of the disease. The simplest procedures are often the most successful. It is always good to commence with the very mildest possible remedies, and then gradually to increase the strength of the remedies employed. Diet has only an indirect influence. Patients should take such food as they find most suitable to their digestive powers. When, however, some constitutional ailment coexists with the eczema, such as gout. diabetes, etc., then, and then only, is special dieting

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Therapentical Aotes.

The Treatment of Pulmonary Hæmorrhage.—In the Journal of the American Medical Association for July 11, 1908, it is noted that the question of the proper treatment of this condition or emergency constantly recurs, and it seems to be necessary to reiterate the advice that the blood pressure should not be raised by such drugs as ergot, digitalis, etc., with the idea of stopping the bleeding. All hæmorrhage from the lungs, unless it is from an aneurysm, tends to stop, but the proper treatment for the condition is to lower the blood pressure with nitrites.

At a meeting of the American Therapeutical Society. in Philadelphia, Dr. Lawrence F. Flick stated in a paper which he read on the treatment of tuberculosis that whenever he found a pulmonary second sound accentuated or increased in force he put the patient immediately on nitroglycerin, and in this way he believed he minimized the danger and frequency of hæmorrhages.

Dr. Albert P. Francine, in the Pennsylvania Medical Journal, January, 1908, very ably discusses the treatment of hæmoptysis. He uses the official spiritus glycerylis nitratis in one minim doses immediately on the occurrence of pulmonary hæmorrhage, and repeats the dose at two hour intervals. or oftener in severe cases, and in severe hæmorrhage has given a minim (two drops) every half hour for four or five doses. If the hæmorrhage is alarming and the patient is nervous, he administers 14 grain of morphine with 1/150 grain of atropine, hypodermically. It is often advisable to use morphine to quiet the patient's nervousness in pulmonary hæmorrhage, but 1/8 grain, or one half the above, is almost invariably sufficient. If this small dose is administered atropine is then not needed to stimulate the respiratory centre or to prevent the overaction of the morphine, and, as it is a vasoconstrictor, it is best not to administer it.

Francine lays down the usual rules for the immediate treatment of this condition, viz., absolute rest. flat on the back with one or two pillows, as the patient prefers. Talking must be forbidden. No warm drinks, alcoholic or otherwise, are allowed, and no solid food is permitted. Cracked ice in small amounts may be given to dissolve in the mouth, and perhaps a light weight, flat ice bag may be put over the heart to quiet its overaction. Similar ice bags may be placed over the site of the bleeding, if deemed advisable. Strapping the chest on the affected side and limiting its mobility is sometimes of service, and Francine speaks of the occasional necessity of bandaging the extremities so as to retain the blood in them until the hæmorrhage ceases. If this is done the bandages should be loosened gradually and not all at once, so that too much blood will not be thrown into the lungs at one time.

It is probably rarely advisable in pulmonary hæmorrhage to do transfusion with blood, salt solution, or any other solution, or even to do hypodermoclysis.

Francine thinks that after the arrest of the harmorrhage the patient should be kept in bed at least ten days. This, of course, depends on the amount of the hæmorrhage and its cause.

Francine advises the usual treatment to prevent hæmorrhage, viz., the administration of calcium chloride or lactate, and the feeding of gelatin, as a jelly. He cautions against using large doses of calcium chloride too long, as it tends, in large doses. to interfere with the coagulation of the blood. This aution was concurred in by Dr. Meyer Solis-Cohen, of Philadelphia, in discussing Francine's paper; he stated that Dr. A. E. Wright, of London, has shown that when large doses of calcium chloride are given for some period, the coagulation of the blood is interfered with. Therefore, after two or three days of the ordinary dose of calcium chloride, it is well to suspend its administration.

The following methods of administering the calcium salts are recommended:

Granulated acacia. 3iii;
Cinnamon water, 3iii;
M. et Sig.: A teaspoonful, in plenty of water, every three

Calcium chloride, in spite of the mucilage, is irritant to the stomach, and sooner or later causes considerable irritation, consequently the following tasteless preparation is the better:

Fac chartulas 20.

Sig.: One powder, with water, every three hours.

When Sodium Bicarbonate Is Best Administered.—In a note on the action of sodium bicarbonate on the gastric contents cited by the Pharmoceutical Journal from Bulletin Commercial, it is stated that, if the stimulating effect on the gastric secreting organs is required, sodium bicarbonate should be given before meals. The first effect is to render alkaline the gastric contents; this is gradually neutralized and the secretion of acid is stimulated until ultimately the normal acidity of the gastric juice is exceeded. If the drug is administered to an over acid subject during the process of digestion, the food may pass out of the stomach before the normal acidity has been restored, so that the beneficial action would be lost. Some time should he allowed to elapse, therefore, between the administration of the dose and the ingestion of food. This period varies with different quantities of bicarbonate. The maximum of acidity is generally attained in two hours after a dose of eight grains; in three after one of sixteen grains. Small doses may therefore be given at meal times, but larger quantities should be given about an hour before meals. The dose itself must be varied according to the case; in some instances as much as eighty grains will be required, given an hour before meals to attain the maximum of acidity, but this quantity is much too great for patients with accentuated hypoacidity; for these eight grains may prove sufficient. In the case of excess of acidity larger doses should be given some time after meals so that the chyme may leave the stomach before the acid condition has been reestablished. Sodium bicarbonate is found to relieve the pain of tardy digestion in a very effective manner in cases of deficiency of acid.

Liniment for the Breast.-A correspondent of The Prescriber for August, 1908, sends the following prescription for the dispersion of a benign tumor in the external breast:

Soap liniment, ... ad. 5ii.

M. et Sig.: Shake the bottle and then rub breast between nipple and base of mamma, backwards and forwards, awice daily. Cover with flannel or Gamgee tissue.

Catarrhal Conjunctivitis. The application of a vellow oxide of mercury ointment of the following composition has given good results in the treatment of catarrhal conjunctivitis in the hands of M. Mallet (Bulletin général de thérapeutique, June 15, 1908):

Gentle massage of the cyclids is to be recommended in association with this treatment.

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INEQUALITY OF THE TWO BREASTS.

M. Variot and M. Lassablière have been investigating an anomaly which, so far as we know, has not often if at all engaged the attention of physicians, that of a difference in the size of the two breasts. They reported, at a recent meeting of the French Academy of Sciences (Semaine médicale, August 5th) that they had examined the breasts of 550 women from the country who sought employment as wet nurses in a Paris hospital for children. They found inequality of the two breasts in size to be by no means exceptional, but rather the rule, during lactation; in fact, in only twenty-four per cent. of the women examined did they find the two breasts of the same size. Generally it was the left breast that was the larger, 281 times, while in only 138 instances did the right breast exceed its fellow in size.

As the efficiency of a secreting organ is proportionate to its size, other things being equal, it is not astonishing that they found that more milk was secreted by the larger breast than by the other one. They milked forty women dry, and the difference in the amounts of milk obtained from the large and from the small breasts ranged from 40 to 335 cubic centimetres (approximately, ten fluid drachms to ten fluid ounces and a half). But it does not seem so easy to account for differences in the quality of the milk from the two breasts. The smaller gland, they find, yields milk richer in fat and casein, but somewhat defective in sugar. As a conse-

quence, the baby is inclined to avoid the little breast, and that leads to a still greater reduction of its size, so that sometimes it undergoes such a degree of atrophy that the nurse is left with only one available breast.

Our authors state that this inequality of the breasts as regards size exists in young girls as well as in nursing women. This fact they set down as probably due to heredity, but they add that in the nurses examined by them the difference in the size of the breasts was manifestly due to the greater frequency with which, for reasons of convenience, the women gave the left breast to the child. Now, if the anomaly which they have investigated is really hereditary, why should they endeavor to account for it as something acquired? At all events, it ought to be corrected, they remark, and they think that the best way to secure that result is to insist on giving the infant the lesser breast.

MERCURY IN TUBERCULOUS DISEASE.

Surgeon Barton Lisle Wright, of the navy, contributes to the July number of the United States Naval Medical Bulletin a second article on this subject. It is preceded by an extract from Medical Inspector C. T. Hibbett's letter of transmittal in which he says: "We are almost convinced that mercury, judiciously used, is a specific in the treatment of tuberculosis in all its forms." In the article itself Surgeon Wright declares that he is convinced to that effect, the only question left to be decided being that of how long it will take to effect a cure. He fortifies his opinion with sufficiently detailed histories of twelve cases and argues very effectively that it is not merely syphilitic lesions that he is curing at New Fort Lyon. He properly insists that all known agencies for the cure of the disease must be kept at work during the administration of the mercurial course. He does well to keep the subject before the profession, for the sooner a consensus is arrived at in regard to it the better. We expect to publish still another of Surgeon Wright's articles on the mercurial treatment of tuberculous disease in our next issue.

AN INDETERMINATE NERVOUS AFFECTION.

No wise physician ever underrates the importance of "nervousness," unless indeed he believes it to be assumed or purposely magnified. The complicated mechanism of the nervous system is easily thrown out of gear, and all its derangements, however trivial they may appear, are terribly real to the person in whom they show themselves. Most of them, if not all, depend upon some actual ab-

normity, though it is often extremely difficult to ascertain its situation and its nature. A very painstaking and praiseworthy attempt to detect the pathology in two cases has been made by Dr. Hamilton Graham Langwill, physician to the Leith Hospital. Dr. Langwill set forth his investigation of these cases before the July meeting of the Edinburgh Medicochirurgical Society in a paper entitled Note on the Treatment of a Type of So Called "Fainting Attack," which appears in the August number of the Edinburgh Medical Journal.

Dr. Langwill's first patient, a woman, forty-eight years old, had been under his care most of the time for twelve years. Her attacks were usually ascribed to her heart, but there was never any dyspnœa, palpitation, cardiac murmur, or irregularity of the pulse. Nevertheless, she was treated with strychnine and strophanthus, but on an occasion when she was more than usually distressed with what she called "queer feelings" and "fainting attacks" it is recorded that "her pulse had not improved as on former occasions" under the use of these drugsso there must have been some abnormity of the pulse. During the night following this observation Dr. Langwill was called in haste to see her, as she was thought to be dying in one of her attacks. He found her extremely pale, with a pulse rapid and of remarkably small volume, unable to speak, but acutely conscious of her surroundings. The paroxysm was rapidly overcome by a subcutaneous injection of adrenalin. Dr. Langwill gives the following additional data concerning the phenomena of the attacks:

They begin, she says, with a sudden feeling coming over her "as if something dreadful was going to happen"; then follows a strange feeling of inward shaking and "sinking" in the umbilical region, unaccompanied by any pain or dyspnæa, but with an overpowering sensation as if she was dying, consciousness, however, being always intensely alert, though the power of speaking or even moving is lost.

1. It is interesting to note that she has by experience found that she often goes to sleep most easily in the prone position.

2. Another interesting condition, she states, occurs frequently if she is awakened suddenly, viz., a feeling as if she "woke up in detachments"—her consciousness wakes quite brisk and vivid, but the power of speaking and moving distinctly lags behind for an appreciable period.

The second patient, a woman, thirty-eight years old, had almost precisely the same symptoms. She found relief by assuming the knee elbow posture, "so as to benefit by the flushing of the bloodvessels in the extremities which results on relaxing the 'tourniquet' action of this 'forced flexion.'" Immediately after a confinement she imputed her alleviation to the pressure of the obstetrical binder. In both cases the blood pressure was found to be very low, and both patients derived considerable benefit from wearing an abdominal pad and bandage. Dr.

Langwill suggests that the true explanation of these attacks is a rapid withdrawal into the splanchnic "venous pool" of a large amount of blood owing to the dilatation of the arterioles in this area. However that may be, the exciting cause is sometimes apparently psychic, for we know of a case, that of a man now past middle age, in which the paroxysms, to which he has been subject for more than twenty-five years, invariably come on under circumstances of constraint, as at the theatre, in church, or at a funeral, where the man has an oppressive consciousness of an unusual need of decorous behavior. In his case the dread is, not of impending death, but of impending loss of consciousness. We think that these attacks would usually be called "spells" by the laity in this country.

THE BLOOD IN ANIMALS WITH EXPERI-MENTAL TRYPANOSOMIASIS.

One of the characteristic features of the blood in cases of infection with protozoan parasites is the increase in the large uninuclear leucocytes, which is seen in its most striking form in malarial disease. In the few cases of human trypanosomiasis in which blood studies have been made, this increase has been observed. Yakimoff (Archives des sciences biologiques, xiii, 3) has contributed a systematic study of the changes in the blood accompanying trypanosome infection. He has employed Trypanosoma Brucei and Trypanosoma equinum, inoculating them into nine white mice, four white, mottled, and gray rats, ten guinea pigs, five dogs, and two foxes. The work was designed to determine the quantitative and qualitative changes of the erythrocytes and the leucocytes, the changes in the hæmoglobin percentage, the number of trypanosomes in a cubic millimetre of blood and its relation to the number of erythrocytes in the same quantity of blood, the chemical alterations of the blood, and its changes in specific gravity.

The author found that there was oligocythæmia in animals infected with the trypanosomes under consideration. The reduction varied from ten to sixty-seven per cent. in the various animals experimented with. There was, however, no poikilocytosis or any change in the tinctorial characteristics of the erythrocytes. There was also oligochromæmia of varying intensity. In some of the animals the color index was high; in others it was less than one. The author concluded that there was no reason to attribute the reduction in the hæmoglobin percentage to the destruction of the erythrocytes, because neither the color of the blood serum nor that of the urine indicated a solution of the hæmoglobin.

The infection was followed by a leucocytosis,

which reached its maximum on the third day, to be followed by a diminution in the number of these cells, which persisted until the death of the animal. The leucocytosis was due to an increase in the absolute and relative numbers of the polymorphonuclear cells. These cells showed, first, a primary increase; second, a diminution; and, third, a secondary increase. The lymphocytes were decreased in number and the large uninuclears played no part in the reaction.

The number of trypanosomes in a cubic millimetre of blood varied from a maximum of 5,280,000, in one of the mice, to 27,219, in one of the dogs, when the infecting organism was Trypanosoma Brucei. On the other hand, when Trypanosoma equinum was employed, the maximum number of parasites found in a cubic millimetre of blood was 792,000, in one of the mice, and the minimum was 10,416, in one of the dogs. Trypanosomes appeared in the blood between the second and the ninth day after the infection, and death occurred between the third and the twenty-first day. In the majority of cases the maximum number of trypanosomes were found in the blood just before death. The duration of the disease appeared to be due to the development of the trypanosomes; when these parasites reached a certain number the animal died.

The author supposes that the trypanosomes produce a substance which is positively chemotactic for the polymorphonuclear leucocytes, and that they elaborate a substance which produces fever even before the organisms can be detected in the peripheral blood by microscopical examination. Further, he believes that the parasites generate an acid which reduces the alkalinity of the blood. The cause of the symptoms of the infection and of the death of the animal is considered to be partly the morphological lesions of the organs or abnormal function of the organs, and partly intoxication with toxines or a diminution of the alkalinity of the blood.

There are other interesting questions discussed in the paper, which is concluded by a division of the disease produced by the infection with trypanosomes into three stages: First, the period from infection to the appearance of trypanosomes in the peripheral blood, characterized by an increase in the total number of the leucocytes, an increase of the polymorphonuclear neutrophiles, and a diminution of the percentage of the lymphocytes. Second, the period from the appearance of trypanosomes in the blood up to the point of death, characterized by a diminution of the total number of leucocytes, a diminution of the polymorphonuclear neutrophiles, and an increase in the percentage of lymphocytes. Third, the period of fatal termination, characterized by an increase of the total number of leucocytes, an increase of the polymorphonuclear neutrophiles, and oscillations in the percentage of the lymphocytes and their consecutive diminution.

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THE AMERICAN HOSPITAL ASSOCIATION.

The tenth annual conference of this association, which is to be held in Toronto on September 29th and 30th and October 1st and 2d, promises to be one of great interest, for the programme includes the titles of many papers on topics of importance in connection with hospital construction and management. The organization is not a medical association; its active members are members of hospital governing boards and executive heads of hospitals, and its associate members are "executive officers of hospitals next in authority below the superintendent." Nevertheless, such subjects as will be discussed at the Toronto meeting are always of interest to medical men, and the association has indeed a fair proportion of medical members. The president is Dr. S. S. Goldwater, of Mt. Sinai Hospital, New York. The conference will be held in the King Edward Hotel.

VAGRANT DOGS IN NEW YORK.

We hope that the Health Department of New York will not relax its efforts to rid the city of vagrant dogs. The danger from rabies is very great at times, and it seems to be considerable at the present time, though it has nothing to do with the "dog days," for the disease may be as prevalent in winter as at any other time. It was well to initiate the movement during the hot weather, however, because the dog day tradition probably secures for it greater popular support than it would be easy to obtain at other times. We doubt if the method adopted by the department is appreciably more cruel than the impounding to which dogs have been subjected here in times past, and there is no injustice done to the owners of the dogs, for they know well enough that they can secure immunity for them by using the muzzle or the leash. It should be borne in mind that the danger of spreading rabies is not the only reason for attempting to rid the streets of stray dogs; they are a nuisance from all points of view.

SHARP CURVES IN STREET RAILWAYS.

Some of the new street cars in New York are exceedingly long, but the wheels are situated at a considerable distance from the ends of the car, too near its centre perhaps in some instances. It follows from this arrangement that when a car of such

construction is forced over a sharp curve in the track, as at the confluence of Broadway and Park Row and in Forty-second Street and Fourth and Madison Avenues, the ends of the car overhang the outer rail of the curve to a very great distance, thus subjecting unwary pedestrians to considerable danger of being knocked down and seriously injured. It may be impracticable to alter the situation of the wheels, but it has been suggested that some stationary protective or warning device should be adopted, such as a brass outline in the pavement to indicate the limit within which it is unsafe to stand when a car is approaching. The suggestion seems to us commendable. The brass line, it is thought, would probably arrest attention and its meaning be readily understood, and it would not obstruct traffic.

Aews Items.

Personal.—Dr. Warren Royer, of Trappe, Pa., who is the oldest practising physician in Pennsylvania, celebrated his eighty-eighth birthday anniversary on August 4th. Dr. Royer was born in Trappe in 1820. He graduated from Princeton in the class of 1842, and received the degree of doctor of medicine from the University of Pennsylvania in 1845. In the same year he settled in his native town, where he has continued practising for sixty-three years.

Dr. Samuel D. Shull, of Chambersburg, has been appointed resident physician at the Frankfort Hospital, Philadelphia.

Dr. Eric Carl Beck, of New York, son of Dr. Carl Beck, professor of surgery at the Postgraduate and St. Mark's Hospital, is in the Mt. Vernon Hospital, N. Y., suffering from injuries received while alighting from a train at the Pelham station of the New Haven Railway. Dr. Beck missed his footing and fell, his head striking a railroad tie. The condition of Dr. Beck is said to be improving.

French Surgical Congress.—The twenty-first French Surgical Congress will convene at Paris, October 5, 1908.

Oswego Hospital, Oswego, New York.—A maternity ward has been established in connection with the Oswego Hospital.

Atlantic City Hospital.—The opening of the Atlantic Municipal Hospital for Contagious Diseases will take place during the month of September. The hospital consists of a series of buildings covering a city block.

Fifth Pan American Medical Congress.—The fifth congress of the Pan American Medical Association, which opened on August 6th, ended August 13th. The next congress will be held in Lima, Peru, August, 1911.

Plague Epidemic in India.—The plague mortality in India is at present slightly decreasing, but about two million five hundred thousand people have perished since the beginning of the epidemic. Thirty thousand cases are still occurring weekly, ninety per cent. of which are fatal.

Baltimore Medical College.—The Baltimore Medical College has received permission to erect a new building at 851 North Howard Street. The cost of the building will be \$22,000, and on the ground floor will be a lecture hall, with class rooms above.

French Medical Association.—The second annual meeting of the French Medical Association met at Lille, on June 25, 1908, with about one thousand five hundred members in attendance, representing over seven thousand five hundred practitioners.

Civil Service Examination for the State and County Service.—The State Civil Service Commission of New York will hold examinations on September 5, 1908. Among the positions is one for assistant physician at the Rome State Custodial Asylum, \$600 to \$900 and maintenance. The last day for filing applications is August 20th

Remodelling of the Vanderbilt Clinic.—The four story building of the Vanderbilt Clinic of the College of Physicians and Surgeons, of New York, which is located at Sixtieth Street and Amsterdam Avenue, is to be remodelled and will be used as a dispensary in the future.

Cholera in St. Petersburg, Russia,—The Department of Health of the Russian capital has declared officially that the city of St. Petersburg is threatened with a cholera epidemic. The authorities are making special efforts to quarantine new arrivals and to inspect foodstuffs.

German Deaconess Hospital at Cincinnati, Ohio.—Mr. E. H. Huenefeld presented to the trustees of the hospital the beautiful Scarlet Oaks Cottage at Cincinnati. The mansion is to be an annex to the Bethesda Hospital, and is to be equipped for convalescents principally.

Responsibility in the Death of Dr. Carlton Flint.— The coroner's jury which investigated the death of Dr. Carlton Flint at Seabright, N. J., rendered a verdict holding responsible both the owner and the chauffeur of the automobile by which the doctor was fatally injured.

National Association of Negro Medical Men.—The association, which has in its membership physicians, denists, and pharmacists, will hold its tenth annual session on August 24th to August 26th, at Brooklyn, N. Y. A big banquet and reception have been planned for August 25th.

New Orleans, Louisiana, Statement of Mortality for the Month of July, 1908.—The official report of the Board of Health of the City of New Orleans gives the death rate for one thousand per annum for the month of July as 13.63 whites; 24.09 colored; total whites and colored, 16.68.

St. Louis University School of Medicine.—Warren P. Elmer and William Engelbach have been appointed assistant professors of medicine; William W. Graves, assistant professor of nervous diseases; M. G. Seelig, assistant professor of pathology; James M. Wilson, associate professor of embryology.

New Infirmary for Chicago.—Plans have been approved for the first of the group of buildings to be erected on the Cook County Hospital grounds at Lincoln and Polk streets. It is estimated to cost about \$2,000,000, and will be a modern structure for the care of those in advanced stages of disease.

Buffalo Good Samaritan Free Dispensary.—Incorporation papers were filed in the county clerk's office by the Buffalo Good Samaritan Free Dispensary, signed by the directors, Grover W. Wende, Nelson G. Russell, Samuel B. Botsford, Walter S. Goodale, Thomas B. Carpenter, and James E. King.

Wheeling Medical Library Association.—A medical library association has been founded at Wheeling, W. Va. The authorized capital stock is \$10,000 and the incorporators are Frank L. Hupp, Andrew Wilson, William McLain, C. A. Wingerter. W. S. Fulton, M. Gaydosh, J. Schwinn. C. M. Truschel, H. E. Cesterling, and John L. Dukey, all of Wheeling.

Trained Nurses of the District of Columbia.—According to a report submitted to the commissioners of the District of Columbia by the examining nurses' board for the year ended June 30th, the applications of seventy-eight graduate nurses were approved without examination, while twenty-nine graduate nurses had to undergo an examination.

Women Nurses for the Navy.—Orders have been prepared at the Navy Department of the United States for the organization of a corps of female nurses to correspond with the female nurse corps of the army. This corps of female nurses is to serve in various naval hospitals and is to consist of fifty nurses. The nursing on ships of war is to be left to the regular stewards.

Chicago Hospital Obtains Land.—The Memorial Association has leased the land and building for the Iroquois Memorial Emergency Hospital at 87 Market Street, for the sum of \$45,000, for ninety-nine years. The hospital will be under the management of the city. It is expected that another emergency hospital will be established near the stock yards by the association.

Tuberculosis Exhibits.—The tuberculosis exhibits shown in several cities of the State of New York during last winter will be demonstrated at thirty-five fairs this

summer. The State Health Department and the State Charities Aid Association have charge of the exhibits. Several of these exhibits will be combined and shown at the State fair which will be held at Syracuse, September 14th to 19th.

Building for Physicians, Denver, Colorado.—A six story fireproof steel building will be erected at the corner of Sixteenth Street and Court Place, at Denver. The new structure is to be given over entirely to the medical pro-fession. A special feature of the building will be a fully equipped operating room.

Annual Meeting of the Crow River Valley Association.—The sixty-first meeting of the Crow River Valley Medical Society was held at the Pilon Hospital in Paynesville, Minn., on August 14, 1908, members being present from Minneapolis, Litchfield, St. Cloud, Sauk Center, Eden Valley, and other points on the Soo line.

The Alleghany Valley Medical Society.—The Alleghany Valley Medical Society at a recent meeting at Cheswick, Fa., elected the following officers: President, Dr. W. A. Arnold, Tarentum; first vice president, Dr. W. A. Arnold, Tarentum; first vice president, Dr. W. P. McCullough, Cheswick; second vice president. Dr. R. E. McConnell, Parnassus; treasurer, Dr. A. F. Kaufman, New Kensington; secretary, Dr. W. T. Hall, Tarentum.

Death of Dr. Charles E. Parish .- Dr. Charles E Parish, president of the Otsego County Medical Society, died, August 15th, of Bright's disease, at the age of fiftythree years. His funeral was largely attended by the medical profession, the board of supervisors, of which he was a member, and the Masonic fraternity. Dr. Parish has prac-tised almost his entire medical life in Maryland, N. Y. He was the only physician in the place, yet few larger places have been better served. He was a broad man in every sense, beloved by his patients and his acquaintances.

Caroline Rest Club for Social Workers.—This club was opened at Hartsdale, N. Y., on July 25th by the New York Association for Improving the Condition of the Poor. The opening of the club has been made possible by the about an hour from New York and three minutes from the Hartsdale station. At present it consists of a three story colonial building, surrounded by a broad veranda. The entire first floor is taken up by a large living room. On the second floor are separate bedrooms, while the third floor is given up to a large dormitory. The house will accommodate thirty guests.

The Health of the Canal Zone.—During the month of June, 1908, the population of the Canal Zone, including the cities of Colon and Panama, was 120,510. 293 deaths among this population, corresponding to an annual death rate of 29.17 per 1,000. There were 3 deaths from typhoid fever; 4 from astivoautumnal malaria; 29 from clinical malaria; I from hæmoglobinuric fever; 2 from amœbic dysentery; 13 from clinical dysentery; 3 from beriberi; 3 from purulent infection and septicæmia; 2 from rabies; 39 from pullmonary tuberculosis; 2 from other forms of tuberculosis; 3 from acute articular rheumatism; 3 from tetanus; 4 from bronchopneumonia; 16 from pneumonia; 35 from diarrhœa and enteritis under two years of age; 6 from diarrhœa and enteritis two years of age and over; and I from puerperal fever.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August

| | Aug. 8 | | \ttg, 15 | |
|--------------------------|--------|---------|----------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmonalis | | 137 | 143 | 100 |
| Diphtheria | 170 | 1.4 | 134 | II |
| Measles | | 7 | 106 | 5 |
| Scarlet fever | 30 | 2 | 87 | 7 |
| Smallpox | | | | |
| Varicella | 1 > | | 0 | |
| Typhoid fever | :0= | 20 | 124 | 17 |
| Whooping cough | 2.3 | 1.2 | 18 | 5 |
| Cerebrospinal meningitis | IO | 6 | 5 | 7 |
| | | | | |
| 77 4 - 1 | | | | |

Charitable Bequests .- The will of Dr. John Ordronaux, of Mineola, who left a fortune of \$2,757,000, includes \$6.000 to the Mary Hitchcock Memorial Hospital; and \$6.000 to the Morton Hospital, Taunton, Mass.

By the will of the late Dautel F Millerick, the following

hospitals are beneficiaries: St. Mary's Infant Asylum, Dorchester; House of the Good Shepherd, and the Carney

By the will of Mary E. Abbott, the West Philadelphia Hospital for Women becomes a contingent legatee to the extent of \$5,000 for the endowment of the Mary E. Abbott extent of \$5,000 for the endowment of the Mary E. Abbott free bed, and \$150 for linen, bedding, etc. In case the West Philadelphia Hospital for Women is not in existence at the time that this bequest becomes available it is to go to the Episcopal Hospital of Philadelphia. By the will of Senator William B. Allison, the Finley Hospital, of Dubuque, Ia., receives \$1,000. By the will of Miss Annie Van Read, of Reading, Pa., the Medico Chirurgical Hospital of Philadelphia receives \$6,500.

Joint Meeting of the Medical Societies of Frederick and Washington Counties, Maryland.—The first joint meeting of the medical societies of Frederick and Washington Counties, Maryland, will be held at Bradlock Heights, on August 26, 1908. The following papers will be read: A Message to Western Maryland, by Dr. B. W. Goldsborough; State Care of the Insane, by Dr. A. P. Herring; Prevention of Typhoid Fever, by Dr. C. W. G. Rohrer; When is Rheumatism not Rheumatism?—The Passing of the Term Rheumatism in the Light of the Newer Pathology, by Dr. C. W. R. Crum; Parasites, by Dr. Tracy E. Bishop; Medicine in the Tropics, by Dr. T. A. Poole; Chemical Use of Medical Remedies of Unknown Composition, by Dr. D. C. R. Miller; Nobless Oblige, by Dr. V. M. Reichard; Sunset in Greece, by Dr. S. M. Davis. meeting of the medical societies of Frederick and W S. M. Davis.

Syracuse University.—The following changes have been made in the faculty of the College of Medicine, Syracuse University: Frank P. Knowlton, associate professor of physiology, has been made professor of physiology; H. S Steensland, associate professor of pathology and bacteriology, has been made professor of pathology and bacteriology; H. D. Senior, associate professor of anatomy, has been made professor of anatomy; Ernest N. Pattee, professor of chemistry in the College of Liberal Arts, has been made a member of the faculty of the College of Medical Physical Management Professor of College of Medical Physical Management Professor of College of Medical Physical Management Professor Office Prof ocen induce a memoer of the faculty of the College of Medi-cine; Richard H. Hutchings, medical superintendent of St. Lawrence State Hospital, Ogdensburg, New York, has been appointed lecturer on psychiatry; Ralph R. Fitch, of Rochester, New York, has been appointed lecturer on orthopa-dics; Charles V. Morrill, recently assistant in zoology in Columbia University, New York, has been appointed lec-turer on histology and embryology.

Mortality Statistics of New Jersey.—During the month ending July 15, 1908, there were reported to the Bureau of Vital Statistics of the State of New Jersey 2,589 deaths from all causes, as compared with an average of 3.030 deaths for the previous twelve months. Of the total number of deaths, 607 were of children under one year of age, and 668 were of persons over sixty years of age. The principal causes of death were: Typhoid fever, 20; measles, 21; scarlet fever, 36; whooping cough, 22; diphtheria, 36; maiarial fever, 1; pulmonary tuberculosis, 265; tuberculosis, other than that of the lungs, 49; cancer, 130; cerebrospinal meningitis, 31; diseases of the nervous system, 315; diseases of the circulatory system, 265; diseases of respiratory system (pneumonia and tuberculosis excepted) 117; pneumonia, 123; infantile diarrhœa, 202; diseases of digestive system (infantile diarrhœa excepted), 187; Bright's disease, 156; suicide, 39; all other causes, 574.

International Congress on Tuberculosis in Washing-International Congress on Tuberculosis in Washing-ton.—Germany will be represented by thirty-five members; the leaders of the delegation will be Dr. Robert Koch, Dr. Martin Kirchner, and Dr. Lübe. The Norwegian Government has appointed as its delegate Dr. F. H. Harvitz, professor at the University at Christiania. The British Commission on Tuberculosis will be represented among others, by Dr. R. W. Philip, of Edinburgh, and Dr. G. Sims Woodhead, professor of pathology at the University of Cambridge, who is a member of the executive committee for Great Britain. Dr. Arthur Newsholme, chief medical officer of the local government board of England, will deliver a lecture on the Causes Which Have Led to will deliver a lecture on the Causes Which Have Led to the Decline in the Death Rate from Tuberculosis, and the Light Thrown by this History on Preventive Action for the Future. Professor Guido Vaccelli, of Rome, is the secretary of the Italian delegation, which consists of mem-bers of the universities of Turin, Naples, Florence, Bologna. and other cities.

New Hospitals.—The Italian born citizens of Philadelphia have decided to raise funds to erect an Italian hospital in Philadelphia.—It has been decided to erect a tuberculosis pavilion as an adjunct to the County Hospital at Denver, the estimate of which is about \$75,000.—The Hospital of St. Annhony de Padua, at Chicago, will be enlarged. The principal addition will be a five story structure, on the top floor of which will be an operating room. The cost of the extension is estimated at \$200,000.—Memphis, Tenn., is to have a hospital for consumptives. Dr. J. L. Andrews, president of the beard of health, intends to open such a hospital in a small way. As soon as the funds are available a large hospital will be erected.—The trustees of the Middlesex Hospital at Middletown, Conn., have voted to add a new building to the hospital, to be used as a nurses' home and a training school for nurses.—A project for the erection of a Swedish hospital has been started at Seattle, Wash.—The German Hospital at San Francisco, Cal., which has been lately dedicated, consists of two six story buildings which have been completed for the New City and County Hospital, San Francisco, Cal., at a cost of \$250.000. It is to be a three story, fireproof structure with a main building and two wings.

The Health of Philadelphia.—During the week ending August 8, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 42 cases, 5 deaths; scarlet fever, 16 cases, 3 deaths; chickenpox, 7 cases, 0 deaths; diphtheria, 26 cases, 5 deaths; chickenpox, 9 cases, 10 deaths; whooping cough, 29 cases, 9 deaths; pulmonary tuberculosis, 98 cases, 56 deaths; pulmonary tuberculosis, 98 cases, 50 deaths; pulmonary cases, 10 deaths; erysipelas, I case, I death; puerperal fever, 2 cases, 3 deaths; cancer, 17 cases, 22 deaths; mumps, I case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 14; dysentery, 2; cholera morbus, 1; diarrhoxa and enteritis, under two years of age, 92. The total deaths numbered 482, in an estimated population of 1,532,738, corresponding to an annual death rate of 16,31 per 1,000 population. The total infant mortality was 160; under one year of age, 147; between one and two years of age, 22. There were 31 still births, 16 males and 15 females. The thermometer registered above 80° F. on five days, and on the other two days of the week the maximum temperature was 79° F. The total precipitation was 1.53 inches. There were 3 deaths from heat and sunstroke, 1 adult and 2 minors.

Statement of the Mortality of the City of Chicago for the Month of July:

| | Tuly. | June, | July, |
|--|--------|-------|-------|
| | 1008 | 1908. | 1907. |
| Total deaths, all causes | 2,342 | 2,095 | 2,217 |
| Vneual death rate per 1.000 | 12.73 | 11.77 | 12.30 |
| Mais | 1.315 | 1.102 | 1,258 |
| L'emales | | 903 | 959 |
| 100- | | | |
| Under a year | 660 | 308 | 479 |
| Between r and s years | 185 | .68 | 216 |
| Between and 20 years | 163 | 165 | 191 |
| Between 25 and 66 years | 925 | 9.38 | 910 |
| Over 60 years | 400 | 436 | 391 |
| Important causes of death - | | | |
| Modern | 3- | 17 | 36 |
| Bright's disease | 105 | 1.33 | 141 |
| Bronchitis | 23 | 40 | 30 |
| Cor unqtion | 248 | 281 | 259 |
| Cancer | 126 | 118 | 106 |
| Convulsions | 22 | 14 | 23 |
| Diphtheria | 2.2 | 3.1 | 2.1 |
| Heart di cases | I ()1) | 16.3 | 157 |
| Intertinal descares, soute | 401 | 153 | 269 |
| Inthuetiza | | I | 2 |
| Melles | 10 | -23 | 25 |
| Norman diseases | 83 | 7.4 | 111 |
| Proportion and the contract of | 112 | 18. | 100 |
| scalet fever | 16 | 1.3 | 13 |
| · monde | 2840 | 18 | 3.1 |
| Lipland fever | 10 | 210 | -14 |
| in lence (other than suicide) . | 168 | 1000 | 165 |
| West use cough | 17 | 1.5 | 18 |
| supericke | 1.1 | 1.6 | 6 |
| All other causes | C == 0 | 1.644 | - 4 |

During the month of July 1998, 1,147 cases of contagious diseases were reported to the Department of Health, a decrease of 849 from the number reported in June. With the exception of tuberculosis and typhoid fever, all infectious diseases reported were fewer than for the preceding month.

Dith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

August 13 1908.

 Prophylaxis in Surgery, By R. T. Pye-SMITH.
 The Immediate Treatment Demanded in Certain of the More Serious Ocular Conditions that Are Frequently First Seen by the General Practitioner,

By Frederick E. Cheney.
Excision of the Os Inominatum Arthrodesis of the
Sacroiliac Synchondrosis, By Charles F. Painter.
General Therapeutics of Gastric Affections,

By MAURICE VEJUX TYRODE.

Examination of One Hundred Eye Cases in the Dedham Public Schools, By RALPH WALDO PLACE.

The Immediate Treatment Demanded in Certain of the More Serious Ocular Conditions that are Frequently First Seen by the General Practitioner.—Cheney speaks of acute glaucoma. iritis, ophthalmia neonatorum, and perforating wounds of the eyeball. Of these he says: To lessen the chances of infection, or at least further infection, the lids and their immediate neighborhood should be thoroughly cleaned and the conjunctival sac irrigated with a boric acid or some other mild solution. It is impossible to make the conjunctival sac absolutely sterile, but if the patient is placed on the back, the lids separated, and the eye washed out with three or four dropperfuls of a boric acid solution, it will at least be clean. A one per cent. solution of atropine should be instilled three or four times at five minute intervals for the reason that iritis will develop in at least eighty per cent. of these perforating injuries. If atropine is not used, and numerous iritic adhesions take place, as they frequently will within the first twenty-four hours, they may very seriously interfere with the future successful treatment of the eye. If the anterior chamber is evacuated, the pupil will not dilate until it is reestablished. It is, nevertheless, advisable touse atropine so that its effects may be obtained as early as possible after the chamber begins to refill. Some simple nonirritating ointment, a piece the size of a pea, should be placed on the inner surface of the lower lid and the eye then bandaged. A good dose of Epsom salts, calomel, or some other active cathartic should be given, and a leech to the temple is good routine practice and at times is of the greatest value. When the eye is bandaged, if the pupil is well dilated, it is usually unnecessary to change it oftener than twice a day, the eye being thoroughly washed out, atropine instilled, and the ointment applied at each dressing. In injuries from dynamite, powder explosions, firecrackers, etc. where the conjunctiva and the lids are usually more or less burned and lacerated, exceptions are to be made in this treatment, especially as regards bandaging. Mucopurulent conjunctivitis is very liable to develop in these cases, and many eyes are lost by a secondary infection of the cornea. Closing up the eye by bandaging under such circumstances would certainly add to the danger of infection. The best results are to be obtained by washing out the conjunctival sac every fifteen or twenty minutes with a boric acid solution, applying boric acid ointment to the surface of the lids, and in using cold compresses for the first two or three days; not

omitting, of course, the instillation of atropine as often as the condition of the pupil may demand. A delay in transferring these patients to the care of an oculist is, of course, often unavoidable, but a special effort should be made in cases complicated by a prolapse of the iris requiring abscission, and also where the perforating object is a bit of steel lodged in the interior of the eye and whose removal necessitates the use of a magnet.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

August 15, 1908

I. Acute Diverticulitis of the Sigmoid with Operation before Rupture,

By George Emerson Brewer. fore Rupture, Intestinal Anastomosis; Presentation of a New, Simple, and Aseptic Method, By Frank B. Walker.

Cardiospasm. With a Report of Forty Cases,

By H. S. PLUMMER.

A New Technique for Nephropexy,
By Alexander Hugh Ferguson.
Ulcer of the Duodenum, with Report of Two Hundred
and Seventy-two Operations, By WILLIAM J. MAYO.
The Diagnosis at Operation between Chronic Ulcer and Cancer of the Stomach, By F. B. LUND.

State Reciprocity in Dental Practice Licensing,
By A. H. Peck.

Medical Education in the United States; the Need of a
Uniform Standard,
By ARTHUR DEAN BEVAN.

Therapeutic Immunization in Mixed Infection,

By A. P. Ohlmacher.

- 1. Acute Diverticulitis of the Sigmoid. Brewer thinks that if the diverticulum is small or attached to the bowel by a narrow pedicle, removal, with closure of the intestinal wound by a pursestring or several Lembert sutures, would be indicated, providing the surrounding intestinal wall was not too much infiltrated. In the event of the diverticulum being large, attached by a broad base, or covered by a plexus of enlarged vessels, the safest method, in his opinion, would be extraperitoneal drainage. If the situation of the lesion is such that extraperitoneal treatment cannot be carried out, packing with gauze should be adopted, from the abdominal wound to the lesion, leaving this packing in place from forty-eight to seventy-two hours, or until firm adhesions have formed about the gauze column; then removal of the gauze and free opening of the abscess, allowing it to drain through the channel thus formed. If rupture has already occurred the intestinal wound should be united by suture, if this is possible; if not, adequate drainage should be provided.
- 4. A New Technique for Nephropexy.-Ferguson describes the technique for nephropexy. Incise the skin, subcutaneous fat, and the muscles of the lumbar region down to the lumbar fascia, beginning the incision one inch below the tip of the twelfth rib and extending it the full length of the rib and parallel with it. Cut the presenting lumbar fascia obliquely below the twelfth intercostal nerves, which brings into sight the perirenal fatty capsule. Expose the kidney by vertically severing this fat. Deliver the kidney into the wound by the traction afforded by several artery forceps clamped on to the fatty capsule. This procedure is facilitated by ven-tral pressure. Place as much of the fatty capsule below the organ as is easily done where it may act as a support and a normal protection. Reform the

normal bed of the kidney if it has been obliterated by fibrous adhesions. This is best accomplished by means of a gauze pledget, grasped by a long curved forceps, and forcibly separate the encroachments of the liver and diaphragm on the normal renal fossa. Posterior and lateral adhesions are cut if necessary. To prepare the kidney for fixation, split the fibrous capsule over its convexity to within an inch or so of its lower pole and then peel it off the parenchyma of the organ, except at the lower end. Insert four catgut sutures, two to the anterior half and two to the posterior half of the capsule. With a long, round, curved needle the anterior sutures are passed subcutaneously from within outward and above the twelfth rib, while the posterior sutures are made to penetrate all the structures posteriorly at the upper angle of the wound except the skin. Often two retention sutures are enough. Gently push the kidney into the bed prepared for it and pull on the sutures. The kidney must rest in situ without any tendency to displacement after these sutures are tied. Otherwise adhesions in the renal fossa have been overlooked or the fatty capsule has not been properly dealt with. When there is plenty of room the anterior suture or sutures may be fastened to the diaphragm. In order to deepen the renal fossa and at the same time to support and fasten the lower end of the kidney, raise a broad, thin flap from the anterior surface of the quadratus lumborum muscle and suture it to the lower end of the kidney. Close the wound in the usual manner and leave room for a small cigarette drain at the upper angle of the wound.

- 6. The Diagnosis at Operation between Chronic Ulcer and Cancer of the Stomach .-Lund remarks that in certain cases of indurated ulcer of the stomach the diagnosis between benign and malignant disease may be impossible, even with the abdomen opened. These are the early cases, in which the diagnosis of early cancer is important, as enabling thorough removal. These cases, broadly speaking, fall into two classes: 1. Indurated ulcers (usually of the lesser curvature), which are movable and free and may be benign or malignant. Here, even if the tumor is benign, gastroenterostomy is often unavailing, and partial gastrectomy should be performed. Excision here is easy and safe. 2. Indurated ulcers of the pylorus often extending from the duodenum and adherent to the pancreas or left lobe of the liver. These are usually benign; excision is difficult, and gastroenterostomy is safe and should usually be performed rather than excision. In class I excision should be done regardless of laboratory findings. In class 2 the laboratory findings are important and usually reliable. The responsibility of leaving a tumor which may be malignant is so great, however, that all diagnostic aids should be invoked, and in case of doubt excision, though at some risk, may be performed. The surgeon must decide in each case whether the risk lies in performing excision or leaving a tumor which may be malignant.
- 8. Medical Education in the United States .-Bevan observes that the minimum American standard should eventually include the following require-

ments: A. The completion of a course in a high school such as outlined by the committee of ten of the National Educational Association, or, in other words, a high school having a four year course and which requires for admission the work of eight years in the elementary grades. This standard has been adopted by the Carnegie Foundation for admission to colleges of liberal arts. B. A thorough training in physics, chemistry, biology, and one modern language, preferably German, which would mean the equivalent of at least one year's work in our leading colleges of liberal arts. Many of the schools will require two years of this work, which may probably be the better plan. C. A four year course in medicine, which should include: (a) Two years of study, consisting largely of laboratory work, in anatomy (including histology and embryology), physiology, chemistry (including physiological chemistry), pharmacology, bacteriology and pathology; and (b) two years of chinical work largely in dispensaries and hospitals, including thorough courses in the practice of medicine (including physical diagnosis, pædiatrics and nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynæcology, materia medica, therapeutics, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene, and medical jurisprudence. There should also be a course in clinical microscopy, including hæmatology. D. A year as an interne in a hospital. This last practical year is one of the most important in the course and should be made compulsory. Such a scheme of medical education is practical, concludes the author, and efficient, and it is possible for all medical schools which have any good reason for existence to come up within a reasonable time to this standard as their minimum requirement. It certainly would add strength to the movement to secure a high and uniform standard if our best institutions would adopt some such standard as has been outlined, which is practically the standard of Germany. One of the important functions of our great universities is to educate thoroughly competent medical men, and each one should turn out a large number of such men, not a limited number. Each should hold the same place in its community that is held by the great German universities and should provide largely the medical men needed in the section of the country in which it is located. Our better universities should not be put on a basis that will seriously limit the number of competent medical men, thus leaving the duty of supplying the great bulk of physicians to the poorer, illy qualified schools.

MEDICAL RECORD

The Surgical Treatment of Empyema,
By P. T. O'CONNOR.
Treatment of Negligent Speech by the General Practitioner.
By E. W. SCRIPTURE.

The Hospital and the Professional Anæsthetist,

By Algernon T. Bristow. The Improvement of General Anæsthesia on Basis of the Principle of Adapting the Boiling Point of the Anæsthetic to the Temperature of the Body (Schleich)—Ten Years' Experience at the German Hospital, By WILLY MEYER.

Anæsthesia at St. Luke's Hospital, By ROBERT ABBE.

6. The Administration of Anæsthetics at Mt. Sinai Hos-Anæsthetics at the Hospital for Ruptured and Crippled, By V. P. GIRNEY By HOWARD LILLESTHA

Amputation in Diabetic Gangrene,
By Eugene H. Eising.

Anæsthesia by Means of Chloroform and Ether, By EDWARD PENDITION

4. Chloroform-Ether-Ethyl Chloride Anæsthesia.- Meyer has used this chemical combination for ten years, seventeen per cent. volume of ethyl chloride mixed with eighty-three per cent. volume of molecular solution of chloroform and ether. This combination has a specific gravity of 1045, which is very close to that of the blood (1056 to 1059). According to volume, it contains seventeen per cent. of ethyl chloride, 35.89 per cent. of chloroform, and 47.11 per cent. of ether, representing a proportion of about 1:2:3. He also gives a hypodermic injection of morphine about one hour prior to the administration of the general anæsthetic. Anæsthesia is much more speedily induced in this way, and, besides, less of the narcotic is required in the course of the operation. With this anæsthetic, administered by means of the drop method and an Esmarch inhaler, the gauze of which is covered by some impermeable material with an opening in the centre, it will be observed that: I. Surgical anæsthesia is established in the majority of cases in about eight minutes. If morphine is previously administered, even this time is very frequently reduced by a few minutes. 2. The stage of excitation, if it sets in at all, is of very short duration. 3. Complete anæsthesia, having been gradually induced, the pulse is full and slow, of the chloroform anæsthesia type, and respiration regular, not stertorous. 4. In no instance has there been an increase in salivation or bronchial mucus during narcosis. 5. The face presents a healthy color. There is no pallor nor cyanosis. 6. If too little of the anæsthetic is given, the patient will begin to gag or vomit, as with chloroform; if too much is administered, respiration will become shallow, and, eventually, if still more is poured on the mask stop altogether, but the pulse will not be interfered with. In other words, the respiratory and not the circulatory centre is first affected by an overdose. There is, therefore, not the danger of the dreaded The tendency syncope, as with chloroform. throughout the narcosis is toward recovery from the effect of the anæsthetic, not toward a profounder anæsthesia; hence the advisability of administering it constantly, at a suitable rate and drop by drop. Of course, a careless narcotizer can kill a patient with this as well as any other anæsthetic. 7. After the anæsthetic has been stopped, the patient soon comes to, sometimes even while still on the operating table. If he sleeps longer, it is usually on account of the previously administered morphine. 8. Vomiting occurs in a small percentage of cases after return to consciousness. It is, however, not of a prolonged or distressing type. 9. Untoward after effects, such as bronchitis, pneumonia, nephritis, are not seen as a result of anæsthesia with this mixture. A preexisting catarrh of the bronchi or inflammation of the kidneys may, of course, become somewhat ageravated for a few days, but never to

the extent as happens after the inhalation of other gaseous substances. These complications certainly are never produced by this anæsthetic. 10. Patients afflicted with serious valvular cardiac lesions, chronic pulmonary affections, atheromatosis, diabetes, profound anæmia, or other complications of serious character, have stood this preparation most satisfactorily; contrary to what one would be justified in expecting in such cases, a better circulatory and respiratory condition was induced during anæsthesia. II. The total quantity used is generally small, his narcotizers very often carry a patient through an anæsthesia lasting from one to two

hours, with two to three ounces. 8. Amputation in Diabetic Gangrene.—Eising remarks that the hyperglychæmia is not an important factor in the induction of the gangrene, but looms into importance after gangrene has been established in so far that it invites septic infection and encourages the occurrence of phlegmon. Of the three acid bodies occurring in diabetes, acetone has a very low degree of toxicity, and probably does not contribute to the production of gangrene. Diacetic acid is always to be looked upon as a pathological ingredient of itself not very harmful and indicates that betaoxybutyric acid is being oxidized. Betaoxybutyric acid, when present in the urine, is to be viewed as the special chemical agent fostering gangrene, which, however, is ineffectual in bringing about that result if acting alone in the absence of arteriocapillary sclerosis. The quantitative ammonia excretion is the expression of measure of the amount of unburned betaoxybutyric acid. It is not an accurate standard of measurement, always registering too lit-The excretion of one gramme in twenty-four hours is to be looked upon as contraindicating operation except in great emergency. Nephritis is to be looked upon as a complicating circumstance, having little direct bearing upon the occurrence or course of the gangrene. It is to be considered, however, as an element of added danger in regard to operation and anæsthesia. Arteriosclerosis is the most important single factor determining gangrene in diabetes. Arterial disease is not caused by the diabetes; many protracted cases of diabetes are unaccompanied by arterial degeneration. The course of arteriosclerosis in the presence of diabetes is somewhat different from that unattended by diabetes. difference is probably due to the presence of betaoxybutyric acid in the blood in the latter instance. There is a difference between senile gangrene and diabetic gangrene. Senile gangrene is due to an end arterial ischæmia; the gangrene of diabetes is due to the same cause plus a devitalizing factor acting probably chemically. A knowledge of the tension is of value as a prognostic sign. Excessively high arterial tension is to be interpreted as an indication of advanced arterial change and probably interstitial nephritis. A low arterial tension indicates weakness from asthenia and secondary causes.

BRITISH MEDICAL JOURNAL.

August 1, 1908

Seventy-sixth Annual Meeting of the British Medical Association, held at Sheffield, July 28th. 29th, and

LANCET

August 1, 1908.

Presidential Address, Seventy sixth Annual Meeting of the British Medical Association, By S. SNELL. By S. SNELL Address in Medicine. On Modern Medicine,

By J. K. Fowler.

Address in Surgery. On Prophylaxis in Surgery,
By R. J. Pye-Smith.

Some Blood Changes in Ankylostomiasis,

By A. H. BREHANT. A Case of Carcinoma of the Jejunum, with Remarks on Malignant Disease of the Small Intestine,

A Note on the Treatment of Erysipelas,

Malarial Cirrhosis of the Liver, By A. J. B. Duprey.
An Unusual Fracture of the Clavicle, By J. W. Rob.

4. The Blood in Ankylostomiasis.—Brehant states that it is now generally acknowledged that the anæmia in ankylostomiasis is due to a toxine, and it appears probable that the eosinophilia is, in a way, a measure of the amount of toxines circulating in the blood, the function of the eosinophiles being probably the formation of an antitoxine. The writer has made a series of blood examinations on adult natives of Egypt suffering from the disease. An analysis of these counts shows that the average percentage of the eosinophiles was small compared to the European percentages, and also that there were none of those high eosinophilic counts which have so frequently been described. The average was only ten per cent. and the highest individual count was thirty-six per cent. A possible explanation of this may be found in the fact that most, if not all, of the poorer Egyptians suffer from old standing bilharziosis which is constantly associated with an eosinophilia. It is probable that they are in a state of tolerance to toxines of a certain nature; and consequently in case of an increase in the amount of toxines circulating in the blood the reactioni. e., the eosinophilic change—would not be so great as in those who had never suffered from a previous toxæmia of a similar nature.

5. Cancer of the Jejunum.-Keyser reports a case of cancer of the jejunum occurring in a woman, aged thirty-eight years. Cancer of the intestinal tract is usually found at those points where there is a change in the lining epithelium of the canal, such as the junction of the esophagus and stomach, the anus, etc., or where the canal is subjected to some form of irritation, such as the sigmoid colon and rectum, the hepatic and splenic flexures of the colon, or the cæcum. The small intestine being a tube which is free from sudden bends and containing only liquid matter, is seldom attacked by carcinonia. Nevertheless it is occasionally the seat of cancer. Of the three portions of the small intestine-duodenum, jejunum, and ileumthe first named is much oftener affected than the other two; in fact cancer of the duodenum alone occurs about as frequently as cancer of the jejunum and ileum together. Cancers of the jejunum and ileum are characterized by their relative benignity, the small size of the tumors, the spheroidal celled nature of the growths, which resemble primary cancer of the vermiform appendix, and by not causing the death of the patients. The symptoms of cancer of the small intestine are practically the

same as those of the upper part of the colon viz., pain, often colicky in nature, a tendency to constipation with occasional diarrhœa, anæmia, and later in the disease, cachexia Occasionally repeated violent hæmorrhages from the anus are seen. A tumor can be felt when the disease is advanced, but is most difficult to find in the early stages owing to the mobility of the small intestine. When palpable it is, in the majority of cases, to be felt in the iliac fossa, most commonly the left, and not in the upper part of the abdomen. Vomiting is not uncommon, but symptoms of obstruction are rarely seen, unless the disease is close to the ileocæcal valve. The annular form of growth, so common in the large intestine, is rarely found. Sudden perforation of the gut with resulting peritonitis not uncommonly occurs, when death almost invariably follows. The average age at which the disease is discovered is 43.9 years. Cancer of the small intestine occurs in the two sexes with about equal frequency. The chief point of interest in the pathology is that the growth frequently shows spheroidal as well as columnar shaped cells. If the case is seen early enough or a growth is discovered during the performance of an exploratory laparotomy enterectomy and end to end anastomosis should be performed if this is possible. If symptoms of intestinal obstruction are present and the neoplasm is irremovable a lateral anastomosis should be done.

6. Treatment of Erysipelas.—Gray states that in considering the methods of treating cutaneous erysipelas it is necessary to mention both the local and constitutional means of combating the infection. With regard to local measures very little need be said, because the recovery of the patient depends less upon the treatment of the infected area than upon the means adopted to increase the general resistance of the tissues against the disease. The local treatment may be dismissed by saying that the infected part should be kept dry by dusting with powder; a mixture of calomel, starch, and zinc oxide in equal parts is usually cooling and welcome to the patient, as it relieves the burning pain so commonly complained of. The constitutional treatment may be medicinal only or combined with vaccination or the use of sera. The writer has obtained excellent results from Metchnikoff's serum, especially when combined with the internal administration of quinine, stimulants, etc. The results of the use of antistreptococcal serum were very variable. In all the cases a dose of from forty to fifty minims of Metchnikoff's serum was given.

7. Malarial Cirrhosis of the Liver.—Duprey holds that the cases of cirrhosis of the liver and ascites in children, met with so often in the tropics, are the outcome of a chronic malarial poisoning. The disease is a slow fibrosis, starting in the liver and spleen, and finally ending in interstitial nephritis. It is the result of repeated attacks of malaria, especially when neglected, upon young, unresisting, and possibly badly fed subjects.

LA PRESSE MEDICALE

July 1, 1908.

Review of Hysteria by the Societé de Neurologie of Parts The So Called Hysterical Stiemata The "Pithiatic" and Trophic Troubles of Hysterical Percons. 2. Feetal Bronchopneumonia and Infantile Bronchiectasies.

By R. Romme.

1. Hysteria.—Meige reports the discussion by numerous speakers on this subject. It seemed to be the sense of the meeting that the so called stigmata not only lack the pathognomonic value lately attributed to them, but have a diagnostic signification, contestable and contested, which is of a secondary order. With regard to the question whether suggestion exerts an action on reflex phenomena, the accord seemed to be unanimous that suggestion is absolutely inefficacious over the tendinous and pupillary reflexes, and that former observations to the contrary were inexact. The diminution, abolition, or exaggeration of tendinous reflexes are not hereafter to be considered to appertain to the symptomatology of the paralyses and contractures called hysterical, and troubles with the pupillary reflexes are not met with in hysteria. Under hysteria is grouped clinical troubles, which may be recognized by the fact that they can be exactly reproduced by suggestion, and can be made to disappear under the influence of suggestion alone. The discussion is very interesting, but difficult to abstract.

July 8, 1908.

- Clinical Microbiology. The Acidoalcohol Resistance in
 Its Relations with the Identity of Koch's Bacillus,
 By J. Auclair.
- 2. The Question of Diabetes Produced by Adrenalin, By G. Makaroff.
- New Practical Rules Concerning Podalic Version by Internal Manœuvres Applied to Shoulder Presentations,
 By JULES ROUVIER.
 Empyema of the Maxillary Sinus of Dental Origin and
- Its Treatment, By G. MAHE.

 5. Diminution of the Vesicular Murmur at the Right
 Anex. By Montelli and Cornillor.
- I. The Acidoalcohol Resistance in Its Relations with the Identity of Koch's Bacillus. - Auclair arrives at the following three conclusions: I. The investigation of the acidoalcohol resistance should be conducted in conformity to precise rules, otherwise it is impossible to determine this reaction and the findings are without value. 2. A bacillus resistant to acid which is not at the same time resistant to alcohol is not a Koch's bacillus, because every true Koch's bacillus is resistant to both. 3. But every bacillus resistant to acid and alcohol is not necessarily a Koch's bacillus; thus when in a secretion, particularly saliva, there are present bacilli resistant to acid and alcohol, short, stocky, abundant, and when the cells are placed parallel to one another, like those of a palisade, the suspected matter should be inoculated in an animal and a positive result obtained before a diagnosis of tuberculosis is made.
- 5. Diminution of the Vesicular Murmur at the Right Apex.—Montelli and Cornillot were struck with the frequency with which they met with diminution of the vesicular murmur at the right apex while making an examination of the school children of Bordeaux, in about 33½ per cent. of all cases, and further study has led them to the conclusion that this diminution of the vesicular murmur at the right apex is a normal physiological phenomenon.

BERLINER KLINISCHE WOCHENSCHRIFT.

July 6. 1008

The Most Recent Epidemic of Diphtheria and the Serum Treatment, By ADOLF BAGINSKY. A Case of Congenital Elephantiasis,

Studies Concerning the Convergence Reaction in Reflex Immobility of the Pupils, By H. LACHMUND. A Case of Adams-Stokes's Disease with Induration in

the Bundle of His,

By J. KARCHER and G. SCHAFFNER. Concerning Soaplike Combinations as Complement, Angina and Miliary Tuberculosis, By Lublinsky.
The Intranasal Opening of the Maxillary Sinus,
By Sturmann.

By B. PRZEWALSKI Concerning the Great Omentum, The Bacteria and Leucocyte Double Staining in Studies Concerning Phagocytosis (Bacteriotropismus and Opsonization, By A. PAPPENHEIM.

10. Appendicitis during Pregnancy, Labor, and Childbed,

By ERNST RUNGE.

1. Diphtheria and the Serum Treatment .-Baginsky presents statistics drawn from the Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin and compares them with the statistics of the city of Berlin as a whole during the years 1905, 1906. and 1907. His conclusions will appear later.

2. Congenital Elephantiasis.-Nöggèrath describes the case of a slightly underweight, slightly rhachitic, psychically normal child, whose nutrition was very little interfered with, that presented a micropolyadenia, a slight anæmia, a tumor of the spleen, and a cushionlike thickening of both legs and feet. He believes this to have been a case of true congenital elephantiasis, which corresponded essentially with the acquired elephantiasis of adults.

3. Convergence Reaction in Reflex Immobility of the Pupils.-Lachmund reports a considerable number of cases of reflex immobility of the pupils which have come under his observation, and discusses the reasons why in some of them the re-

action of convergence was affected.

4. Adams-Stokes Disease with Induration in the Bundle of His .- Karcher and Schaffner contribute another case to the records of this rare condition, met with in a man, fifty-eight years of age. They find in literature only twelve cases of this discase in which a change in the bundle of His has been demonstrated on autopsy, and they present a full account of each of these cases.

Soaplike Combinations as Complement.-Von Liebermann and von Fenyvessy state that the complements are bodies constructed similarly to the unions or mixtures of soap and albumin in which other combinations of similar action may be substi-

tuted for either the soap or the albumin.

7. Intranasal Opening of the Maxillary Sinus. -Sturmann favors opening the antrum by an incision through the skin of the nasal aperture laying bare the maxillary bone by means of a curved raspatory and chiseling through the facial wall of the

8. The Great Omentum.—Przewalski makes a preliminary communication concerning the functions of the greater omentum, or rather of all parts of the omentum which are not evidently ligaments or suspensory ligaments, and have demonstrable mechanical functions. He presents the results of some experiments on dogs which go to show that the

omentain is a regulator of the peristalsis of the small

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

July 7. 1408.

The Nature of the Alternating Heart, By Hering. Concerning the Importance of Urobilinuria in the Diag-

nosis of Diseases of the Liver. By FISCHLER. The Treatment of Paralyses by Means of Plastic Operations on the Nerves,

Expectation Neurosis, By Iss.
Internal Treatment of Syphilis, By Pöhlis
The Cause and Treatment of Intestinal Hernia, By ISSERLIN. By PÖHLMANN.

By Koch.

The Etiology of Spondylitis Cervicalis Deformans, By PREISER.

The Serum Treatment of Puerperal Fever

By VON FELLENBERG. 9. A New Remedy for Whooping Cough, B.
10. Fibrolysin in Interstitial Hepatitis, By
11. The Treatment of Congenital Word Blindness By KAUPE. By Mörlin.

12. Radical Operation for Umbilical Hernias and for Epigastric and Subumbilical Hernias in the Linea Alba by Oblique Splitting of the Fascia and Shelling Out of the Muscle,

By Menge. 13. Obituary of Carl von Voit,

The Alternating Heart. - Hering asserts that the alternating heart is due to a part of the muscular fibres of the heart not responding to the stimulation at the time of the lesser systole. As this partial loss of reaction is present at the time of the lesser systole, but not at the time of the greater, we have to do with a periodically recurring partial asystole.

3. Treatment of Paralyses by Plastic Operations on the Nerves .- Spitzy reports two cases of paralysis of the region supplied by the peroneus successfully treated by implantation of the peroneus into the tibial nerve. He likewise successfully treated a case of radial paralysis, due to fracture of the arm at birth, by partial implantation of the median nerve into the radial when the patient was twelve years old.

4. Expectation Neurosis.—Isserlin describes several cases of what Kraepelin designated in 1904 as expectation neurosis (Erwartungsneurose). In these cases the expectation of an occurrence induces gradually increasing inner tension, which shows itself sometimes in certain false impressions, sometimes in all kinds of impulses to movement. If the anticipated occurrence is unpleasant and anticipations may be extremely tormenting and even painful. Of the functions that are interfered with by this trouble, that of reading is the most frequently affected and may be made impossible by flickering, sensations of tension, photophobia, and pain. Other functions affected may be writing, walking, standing, sleeping, swallowing, urinary, and sexual.

7. Spondylitis Cervicalis Deformans.-Preiser reports a case met with in a man, fifty-four years of age, which seems to support the views of those who asert that traumatism plays a certain rôle in the æti-

ology of spondylitis deformans.

AMERICAN JOURNAL OF SURGERY.

August, 1908.

1. The Treatment of Cancer of the Breast,
By J. B. Bissell.
2. An Improved Technique for the Radical Cure of CanBy F. G. Du Bose.
By M. Iverson

4. Practical Points in Anæsthesia,

5. Gastroenterostomy; Report of Three Cases with Observations as to the Physiological Effects on One Patient,

The Treatment of Gun Shot Wounds,
By George Franklin Shiels.

I. The Treatment of Cancer of the Breast.—Bissell remarks that without a better knowledge than we have at present of the cause, origin, and increase of that malignant lesion of human tissue called cancer, the only hope lies in surgery, early, completely, and extensively applied by means of the knife. Unfortunately, there is a limit to the promises even of surgery, but within its limitations its scope is powerful, certain, and wonderfully hopeful in the end results which it produces. We may assert, therefore, that as a result of modern surgical knowledge and operative technique and skill, the surgeon can assure to his cancer patients, if seen early enough, the definite certainty of a comparatively long life.

5. Gastroenterostomy. — Jones says that it appears that whether or not the gastric functions are interfered with; whether or not the food after gastroenterostomy passes through the pylorus or the stoma; whether or not bile regurgitates into the stomach; whether or not fat and proteid digestion are embarrassed—all are, in the face of clinical results, questions rather of academic, than of practical interest; and, therefore, when the operation of gastroenterostomy is indicated clinically, there is

no metabolic bar to its performance.

6. The Treatment of Gun Shot Wounds .-Shiels observes that if the intestine is perforated and not repaired the patient will die. The instrument inflicting the operation is not a matter of much moment. Prompt and immediate operation is imperative. It might be well to sound a warning for the guidance of the general practitioner, who, in the course of his work, occasionally meets with bullet wounds, and who may be tempted to probe or unnecessarily manipulate the wound with the object of cleansing it. Excluding wounds of the abdominal region and those which give rise to dangerous hæmorrhage, or pressure of the brain, and finally those in which the position of the bullet is clearly made out and its removal is not fraught with danger, simple aseptic dressing and awaiting developments is unquestionably the best policy. Of course, where bones are broken the ordinary treatment of bone fractures is in order.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE August, 1908.

I. A Brain Tumor Localized and Completely Removed, with Some Discussion of the Symptomatology of Lesions Variously Distributed in the Parietal Lobe, By Charles K. Mills and Charles H. Frazier.

 Herpes of the Membrana Tympani: Due to Zosteroid Affection of the Petrosal Ganglion,

- By Thomas J. Orbison.

 Tabes Associated with Trophic Changes Suggesting
 Acromegaly, By F. X. Dercum.
- r. A Brain Tumor Localized and Removed.— Mills and Frazier report a case of brain tumor in a woman, forty-five years old. The patient was successfully operated upon, and the tumor, a simple scrous cyst, removed. The patient made a prompt

recovery. From the standpoint of physiology, especially as regards the functions of the parietal lobe and the possibility, in considering lesions of this lobe, of subdividing it functionally into several parts. the case was of much interest. The authors state that they have had the opportunity of studying at least four classes of cases, giving different symptom complexes, according to the degree of implication of the various portions of the parietal lobe. Possibly in time more than this number of syndromes can be separated for diagnostic purposes. These symptom complexes are: (1) Pronounced hemianopsia and ataxia, combined with pressure symptoms varying in intensity, such as hypæsthesia, hypastereognosis, and slight paresis of the face and limbs; (2) astereognosis and ataxia, combined with symptoms showing various degrees of involvement of cutaneous, muscular, and arthroidal sensibility, but without hemianopsia and with no or only slight paresis; (3) hemianopsia and hemiataxia, with hypæsthesia and hypastereognosis and pronounced paresis, especially of the face and upper extremity; and (4) astereognosis and ataxia, with hypæsthesia and pronounced paralysis, especially in the lower and upper extremities. These symptom complexes, more or less pure at first, become complicated as the tumor or cyst increases, and with it the variety and extent of the symptomatology. In considering the question of the position and extent of an opening for the removal of a tumor or cyst, the authors remark, the osteoplastic flap should be planned somewhat differently in accordance with these symptom complexes. For the first, in which pronounced hemianopsia and hemiataxia are the dominating symptoms, the incision for an opening three and a half or four inches in length for its superior boundary should be made, about one inch from the mesal edge of the hemisphere and in such manner that about one half of it should be cephalad and the other caudad, of the line of the parietooccip.tal fis-The base line connected by the somewhat converging sides of the opening should be over the upper part of the temporal lobe. With the second symptom complex in view-that in which astereognosis and ataxia, without hemianopsia, are the chief guiding symptoms-the opening should be carried as close as possible to the middle line of the skull, and should be an inch more anterior. The incision for the upper line of the third opening, for a case giving the syndrome in which hemiataxia, sometimes with hemianopsia and also with hypesthesia, impairment of the muscular sense and hemiparesis or hemiparalysis, especially in the face, are present, should extend about one third in front and two thirds behind the central fissure, and about one inch or one and one half inches from the median line, the base, as in the first opening, being over the temporal lobe. The incision for the upper limit of the fourth opening should be as near as possible to the midline of the skull, while its sides should be in about the same relative positions to the central fissure, that is so as to uncover the cerebral surface about one third in front and two thirds behind this fissure. By having the lines of the opening in the manner here indicated, the surgeon will probably find the main portion of the growth near the centre of the field of operation.

AMERICAN JOURNAL OF OBSTETRICS

August, 1008

- A Glance over the Development of the Technique of Modern Gynæcological Operations, By A. MARTIN.
- Is Pubiotomy a Justifiable Operation? By J. W. WILLIAMS.
- The Choice between the Intrapelvic and Abdominal Methods of Delivery in the Lesser (nonabsolute) Degrees of Mechanical Obstruction. By E. REYNOLDS.
- Pressure Conditions within the Abdomen

By R. R. SMITH.

- Foreign Bodies Left in the Abdominal Cavity after Operation, By P. Findley. The External Ante Partum Examination,
- By W. W. REED. Some Interesting Cases, By T. C. SMITH.
- Obstetrical Drawers. By J. G. DRENNAN.
- The Choice between the Intrapelvic and Abdominal Methods of Delivery in the Lesser (nonabsolute) Degrees of Mechanical Obstruction.—Reynolds affirms that while the elective Cæsarean section at the beginning of labor has, under favorable conditions, no greater material mortality than elective intrapelvic operations, lesser fœtal mortality, and less morbidity, the maternal mortality rises with the protraction of the duration of labor, the maternal mortality by intrapelvic methods remaining unchanged until very late in labor. We should therefore aim to recognize in advance the cases which must be subjected to operation. Repeated estimations of the capacity of the pelvis and of the vital resources of the patient will enable one to conduct labor cases with greater precision. The cases which promise great difficulty are not for the general practitioner unless he has the active cooperation of the obstetric expert. Mechanical difficulties in multiparæ which have already resulted in unfortunate labors indicate primary Cæsarean section, the same course being indicated for elderly primiparæ with similar difficulties. Moderate mechanical difficulties in young primiparæ may be met by intrapelvic operation, with the proviso that a subsequent pregnancy may necessitate Cæsarean section.
- 6. The External Ante Partum Examination .-Reed emphasizes the importance of such an examination at not later than the eighth month. It should determine the existence of pregnancy, the period of gestation, the attitude presentation, and position of the fœtus, the situation of the placenta, the presence of multiple pregnancy, the condition of the uterine and abdominal muscles, the relative size of the fœtus and mother, estimation of the size and shape of the pelvis by pelvic measurements, etc. An anæsthetic should be used if essential to thoroughness. Palpation is the most important element in such an examination; inspection and auscultation should also be employed. The patient lies in the dorsal position with thighs flexed. The physician first palpates the lower portion of the abdomen, facing the patient's feet, then the upper portion, facing the patient's head. Careful diagnosis thus made will often enable one to outline the course and the result of labor, and is of especial value, in many cases, in obviating the necessity for vaginal examinations during the progress of parturition.

ANNALS OF SURGERY.

August, 1908.

- Tetany following Thyreoidectomy Cured by the Subcutaneous Injection of Parathyreoid Emulsion,
- By J. H. BRANHAM By C. P. FLINT Sinus of the Branchial Cleft, Technique of Early Operation for the Removal of Tuberculous Cervical Lymph Nodes
- By C. N. Down. Desmoid Tumors of the Abdominal Wall,
- By H. B. STONE Note on Syphilis of the Liver, By A. MACLAREN
- Primary Carcinoma of the Vermiform Appendix,
 By L. J. HAMMOND.

- By L. J. HAMMOND.

 Hernia of the Appendix Complicated with Appendicities,
 By D. W. BASHAM.

 Enormous Endotheliomatous Cyst of the Great Omen
 tum,
 By E. M. HASBROUCK.

 Prevesical Abscess,
 Symptomless Hæmaturia,
 Cystic Degeneration of the Kidney.

 By F. R. HAGNER. 10. Prevesical Abscess,
- 12. Cystic Degeneration of the Kidney,
 By C. M. Nicholson.
 13. Venous Thrombosis and Hydrocele of the Inguinal
- 14. Comparative Value of Various Measures for Relief of Prostatic Enlargement, By A Screen 15. Contribution to the Contributio
- 15. Contribution to the Surgery of the Prostate,
- 16. Musculospiral (Radial) Paralysis due to Dislocations of the Head of the Radius, By D. Stetten.
- 17. Congenital Defect in the Uina, By F. D. Patterson.
 18. The Surgical Treatment of Bunion, By C. H. Mayo.
 19. A New Motor for Bone Surgery, By W. S. Bryant. Technique of Early Operation for the Re-
- moval of Tuberculous Cervical Lymph Nodes .-Dowd emphasizes the fact that thoroughness is all important in the removal of these nodes. All infected nodes should be removed when practicable. It is better to save life and leave scars than to sacrifice the patient, but it must not be forgotten that a scarsaving operation may be compatible with thoroughness. The arrangement of the infected nodes in early cases is almost uniform, and the technique for their removal as definite as that of the average surgical procedure. The skin incision is made a finger's breadth below the border of the jaw and should be parallel to a neck crease. The branch of the facial nerve must be retracted upward, and the sternomastoid muscle retracted backward. In separating the group of nodes the spinal accessory must be avoided. The internal jugular vein must be avoided in removing the lower group of nodes, the incision being enlarged to suit the situation. Drainage must be thorough, the wound being closed by subcuticular outlines except at the drain opening. Especial stress is laid upon the necessity of avoiding injury to veins.
- 4. Desmoid Tumors of the Abdominal Wall. Stone favors the view of Pfeiffer that these tumors are fibromata or fibrosarcomata arising from the musculoaponeurotic structures of the abdominal wall, thus excluding tumors originating from the bony pelvis, or the round ligaments, or the skin; or the subcutaneous tissues. Such tumors may first be discovered during pregnancy or the puerperium, though they occasionally occur in males. They usually present the typical picture of fibroma, and are most frequently found in the right lower quadrant of the abdomen. A scar or organizing hæmatoma is usually the starting point. They are seldom pain-

ful, vary in size from that of a hen's egg to that of a fist. Growth is usually slow and calcification may take place, but spontaneous disappearance has never been observed. The lymph glands are not involved unless the tumor is of a malignant type. The treatment is early operation. The longer they remain the greater their evil influence upon surrounding structures, and the greater the tendency to malig-

nant degeneration.

g. The Inconsistencies of the Gauze Pack.-Royster doubts whether the introduction of gauze into surgical practice has been as beneficial as some have believed. It is of undoubted value as a dressing and sponge material, but not always as a means for draining wounds, for packing sinuses, or for walling off septic material. The use of rubber tubes combined with gauze, and of rubber tissue enveloping it, is a distinct improvement. If used to arrest hæmorrhage it must be packed tightly; if for the evacuation of secretions it must be packed loosely. like a lamp wick. If used to wall off secretions it adds the danger of exposing to infection areas of peritonæum which nature may already have protected, and as a foreign body it impairs the resisting power of that membrane. Its removal is also accompanied by no little danger to the intestine from traumatism, or the diffusion of the septic material which it has absorbed.

Proceedings of Societies.

MEDICAL SOCIETY OF NEW JERSEY

One Hundred and Forty-second Annual Meeting, Held in Cape May on June 18, 19, and 20, 1908.

The President, Dr. Edward J. Ill, of Newark, in the Chair.

(Concluded from page 333.)

Acute Anterior Poliomyelitis, with Special Reference to the Recent Epidemic.—In this paper Dr. David T. Bowden, of Paterson, considered the actiology, the symptoms, the different stages, the diagnosis, the prognosis, and the treatment. He emphasized the fact that no operation should be performed, except possibly tenotomy, until some years after the primary infection, or without a thorough electrical test having been made to ascertain if possibly destruction of the muscle had taken place.

Dr. H. J. Bogardus, of Jersey City, gave statistics of 872 cases of infantile paralysis treated at the clinic of the New York Orthopædic Hospital in the period from January 1, 1897, to December 31, 1907. He stated that it had been estimated that half the crippled children wearing braces were doing so as the result of this disease, which must be considered as one of the most tragic things in the practice of medicine. It had been hoped, he said, that by a study of an epidemic of the disease occurring in a crowded American city a good deal might be learned concerning it; but, unfortunately, little had been added to the sum total of the previously existing knowledge regarding infantile paralysis.

Dr. D. E. ENGLISH said that he had suspected anterior poliomyelitis to be an infectious disease for some time, although this had not yet been proved to be the case. The few instances of the disease that he had seen had borne out the hypothesis of Dr. Bowden that it had some connection with acute or

chronic digestive troubles. Dr. English's patients had been very much constipated. In one case there was fæcal impaction, and he extracted from the intestine quite a quantity of chestnut shells, peanut shells, and pieces of coal. He thought that it would be interesting to know whether this depraved appetite had any connection with the disease. In all the few cases in babies that he had seen the infants had been fed with beer, and he thought that the effect of the alcohol on the infantile or childish system might

have some bearing upon the case.
Dr. Thomas P. Prout, of Summit, said that the results of nerve grafting did not bear out the expectations that had been formed regarding it in the first place; and he thought that probably the best that can be reported about it was simply an improvement in the general nutrition of the limb, which, of course, was worth something. Associated with this improvement, there was often for a long period an added palsy, on account of the engrafting of dead nerve tissue into the living structure. In regard to the treatment, he thought it wrong to torture these children with electricity. In the early stages, he said, the cases partook very largely of the nature of neuritis; and to stimulate the surface of the body with electrical currents during the course of a neurotic process had a torturing effect. Electrical treatment, therefore, should not be employed until four weeks had elapsed. He thought that it would be found that these cases belonged to the great number of latent infectious processes that became active only through lowered vitality and resistance on the part of the child, due to various causes.

Dr. Martin J. Synnott, of Montclair, referred briefly to one case that seemed to him to have some bearing upon the ætiology of the disease. The symptoms in this case pointed strongly to typhoid infection. A blood examination disclosed an enormous number of malarial parasites of the æstivoautunnal variety. The paralysis developed on the third day of the fever, and the subsequent course clearly pointed to poliomyelitis. Dr. Synnott wondered whether the malarial parasites could have had any bearing upon the poliomyelitis. He thought that there might have been a double infection. His experience had been that these patients improved as rapidly under the stimulation of vibratory massage as they did under that of either galvanism or faradism, and with

less discomfort.

Dr. W. M. LESZYNSKY, of New York, said that anterior poliomyelitis seemed to him a bad name for the cases that occurred during the recent epidemic, because a large number of them did not correspond to the usual type of this disease. A number showed the characteristics of encephalitis or myelitis, and, to a slight extent, of neuritis. He agreed with Dr. Prout in regard to the treatment. He did not think it necessary to examine thoroughly by means of galvanism in order to determine the presence of the reaction of degeneration. He scarcely considered it wise to wait until deformity had developed before instituting the orthopædic plan of treatment. One should accept the fact that a child with paralysis of the foot was likely to have foot drop, and should immediately place the foot in an apparatus to prevent the stretching of the anterior group of muscles.

Dr. L. GAUNT EDWARDS, of Williamstown, said

that, when used at all, electricity should be applied in its mildest form. If the muscle failed to respond after half a minute, the current should be stopped, as the already weakened muscle had been tired out. He had been much struck with the remark of Dr. English regarding the inflence of a depraved appetite in these cases, as only a few months before he had himself had a patient who would eat peanut shells, chalk, and coal, and relish them. Needless to remark, he had a good deal of gastric trouble.

Dr. Bowden said that he had thought that he had indicated in his paper that electricity should not be used until tenderness had subsided. As to how much should be employed, he thought that an amount sufficient to produce contraction should be applied. The idea of the therapeutic effect of electricity was that it was merely a massage of the muscles. This was why the orthopædic treatment had been recognized as of more importance than the electrical or neurological; it placed the child in a position to use any voluntary power that it might have. In the chronic stage, as soon as the child was able to carry a supporting apparatus, it should be put on. No one could reasonably question the benefit of electricity.

The Importance of Studying the Condition of the Heart Muscle in Various Diseases .- In this paper Dr. HOBART A. HARE, of Philadelphia, said that it was not his intention to deal with valvular changes, but with changes in the muscle (1) after acute overstrain; (2) after chronic overstrain; and (3) months and years after the overstrain had passed away. In the first class the murmur disappeared shortly after the exertion ceased. the second it persisted until after a long period of rest. It was not enough to diagnosticate the heart condition; its cause must be found. The great strain produced the great hypertrophy. After the age of forty-five the conditions al-The arteries still remained wide open pathways, but the heart acted less forcibly and the blood pressure fell. The final period of life was hurried upon the man, and he became prematurely aged in the fibroid changes, resulting in rigidity, which increased arterial tension, particularly when exertion was made, and threw a great strain upon the heart, which was unable to meet it. The attempt to do so brought about the hypertrophy of old age. One was frequently consulted by patients prematurely or actually aged who thought that their lack of health depended upon lack of exercise, when it depended upon other causes that should be corrected. It was one's duty to prevent

these patients from taking excessive exercise.

Dr. Philip Marvel, of Atlantic City, said that a subdivision of changes arising in the circulation into those attacking the endocardium and those attacking the myocardium must be made. In those attacking the myocardium one was often dealing with the results of some infectious disease that had preceded the first evidences of heart trouble, though perhaps not with the final results. He had been forced to conclude that heart conditions sometimes had their origin from a toxæmia. He wished to make a distinction between toxæmic causes and toxic causes. By the first he meant the conditions arising from bacterial changes peculiar to the food, and by the sec-

ond those conditions arising from bacterial causes external to the body. Toxemic causes might be bacterial, but they were from the bacteria of the intestinal tract, and not from those extraneous to it. In the second class of cases, those arising outside the circulatory organs, there was a mixed condition Primarily, there was the involvement of the circulation in the sclerotic changes in the vessels, and there was also the nutritive change, which was taking place simultaneously with the sclerotic change and involving the muscular fibres of the myocardium itself. Hence in this class of cases there were operative more than the causes that affected the heart from within the circulation. In regard to the class of cases that arose primarily from disturbances of the nervous system, it seemed to Dr. Marvel that one had to deal with causes of which the profession had little definite knowledge. They might have had their origin years before the patients were seen.

Dr. Martin J. Synnott, of Montclair, referred briefly to the use of hot carbon dioxide saline baths, combined with muscular exercise and so called resistance movements, as administered at Nauheim. Myocardial derangements responded most readily to this form of hydrotherapy. The results were not so good when the treatment was carried out at home.

Dr. ALEXANDER MARCY, Jr., of Riverton, emphasized the need of absolute rest in many cases of myocardial disease, particularly the acute variety. It should be continued for a sufficient length of time to allow the myocardium to recover its tonicity.

Dr. Hare wished to add one point to what he had already said. In listening to the hearts of persons whose general system did not seem much tired, one might often learn that the body was tired, because the heart sounds denoted it. A large proportion of so called cardiac cases did not depend upon valvular lesions, even when a murmur was present, the condition being due to relaxation of the mitral or tricuspid orifice. The cardiac sounds in such cases should be studied, not in connection with murmurs, but as indicative of the general tone of the circulatory system.

The Psychic Element in Medical Practice was the title of a paper by Dr. Linn Emerson, of Orange, who remarked that the practice of medicine was as much an art as a science. The art had been particularly prominent in early times, and there had been an undue prominence of the material side during the past century. Recently there had been a revival of psychic methods. Only men temperamentally fitted should be encouraged to begin the study of medicine.

Dr. T. N. Gray, of East Orange, said that early medicine was almost entirely psychic, the priest having been the physician. Through all the advancement that had been made in medicine along physiological lines, and with the newer knowledge of pathology, the ego of the physician still remained a powerful factor in the treatment. This influence was exerted through statements calculated to win the patient's confidence, and success was in proportion to the truth of these statements. Though there existed minds that could be affected by quacks, yet for every charlatan there are hundreds of general practitioners earning their living and keeping the confidence of their patients.

Dr. Leszynsky said that many members of the medical profession had inadequate or erroneous conceptions regarding the prevailing views as to the present psychotherapeutic agitation, and that others had given the subject no attention at all. Psychotherapy should not be characterized as a method confined to special forms of psychic analysis, persuasion, and hypnotic suggestion to the subconscious mind; within its sphere should be included isolation, educational measures, healthful occupation and diversion, and encouragement. Psychotherapy alone could not, in the majority of instances, supplant a rational plan of medical treatment, but it could be used by the average physician in connection with his daily work. Its practice as an exclusive method demanded special skill and training, and was applicable to selected cases only. It was by no means a panacea, its usefulness being limited. The recent wave of public interest in psychotherapeutics, fostered by a superabundance of literature on the subject, had naturally resulted in an exaggeration of its importance. The medical profession should take concerted action in attempting to prevent the practice of this form of therapy from being left unrestricted to the churches.

Dr. CHARLES A. ROSENWASSER, of Newark, thought it time that a warning should be sounded against believing much that was written in regard to the psychic treatment of various disorders. One could influence a man in a normal waking condition by talking to him, and one might also make suggestions to a man in a somnolent state, but Dr. Rosenwasser firmly believed that for a physician to talk to a person asleep would be wasting valuable time. Neither did he believe that a physician, when himself asleep, could influence another person.

Dr. WILLIAM G. SCHAUFFLER, of Lakewood, thought that one should be careful to avoid extremes. Certain books, while interesting to a careful, thinking man, were dangerous for the general public. Dr. Schauffler had recently spent several days in Boston, and had made careful inquiries regarding the work of the Emmanuel Church Clinic and of the men interested in promoting it. He had been told by one well known Boston neurologist that in the beginning he had taken great pleasure in sending patients to this clinic, because he had felt that the work there was conscientiously done; but that during the past few months he and others had had to give up sending patients there, because the work had so overwhelmed the men in charge of it that they were picking out only the most likely cases. Dr. Schauffler was also told that at the clinic they would not try to cure any alcoholics that could not state that they had the power to abstain from liquor if they wished to do so. He thought that, if this was the case, it was no wonder that they got ninety per cent. of cures.

Dr. Prour thought that the most important thing in regard to this matter would be for physicians to try to understand these phenomena. He had found that the laity, as a rule, expected the physician to scoff and jeer when these things were mentioned. The considered that looking at them in a derisive way would carry no weight with patients, unless one could show that such methods did positive harm. Dr. H. C. NEER, of Park Ridge, said that it was

undoubtedly true that such methods did a great deal of good, for it was not likely that all the persons that professed to have been cured were lying. He thought that after a time the method would find its right place, as almost all new methods met with opposition at first. He admitted, however, that its practice should be properly regulated, the same as that of any other therapeutic method.

Dr. EMERSON said that specialists and enthusiasts were always prone to overestimate the results in

such cases.

A Résumé of Modern Methods of Treatment for Posterior Displacements of the Uterus was the title of a paper by Dr. J. WATSON MARTINDALE, of Camden. The object of the paper, he said, was to point out the advantages and disadvantages of each operation and the conditions under which the different operations were indicated. The objects of operation for posterior displacement of the uterus were repair of the pelvic floor and the bringing forward of the uterus into a position of anteversion, The Alexander operation was the operation of choice in cases in which the perinæum was intact or had been repaired, if there is no evidence of disease of the uterus or its appendages, and if the uterus was not excessively large. He had had a bad result in only one case of this operation. Vaginal fixation with anterior colporrhaphy was useful in cases in which there was a cystocele and when the patient was beyond the childbearing period. The results in cases seen by Dr. Martindale had been excellent. Ventral fixation was of value in cases of procidentia, when the woman was beyond the childbearing period. It was usually first necessary to do an anterior colporrhaphy. The results of this operation were bad in women in the childbearing period. Ventral suspension was used in place of ventral fixation. The only difference between the two was that in ventral suspension the silk suture engaged only the peritonæum. Dr. Martindale, during the last two years, had seen ten patients subjected to section after having had the uterus suspended. The band of peritonæum supporting the uterus had in most of these cases stretched so as to give no support to that organ. Another objection to ventral suspension was the fact that it was not an anatomical operation. The Gilliam operation was devised to overcome the difficulty arising from fixation and also from suspension during the childbearing period. Gilliam proposed to shorten the round ligaments through an abdominal incision. Dr. Martindale had seen three patients operated upon by this method. The results were excellent, and no untoward conditions arose afterward. Simpson's operation, according to a modification devised by Dr. Charles P. Noble, of Philadelphia, had all the advantages of the preceding ones, and Dr. Martindale had heard of no serious objection to it. It was a recently invented procedure, so that he had had no opportunity to observe its effects upon subsequent labors. In twenty patients observed by him that were operated upon by this method the results had been good.

In retroversion following labor or miscarriage tamponing and the pessary were indicated. In retroversion with no adhesions and a moderate sized uterus the Alexander operation would be the proper procedure. In the case of women past the meno-

pause, when anterior colporrhaphy was required, vaginal fixation would probably be effective if the uterus was of moderate size. In procidentia uteri after the climacteric amputation of the cervix with ventral fixation would probably effect a cure. In procidentia during the childbearing period amputation of the cervix with ventral suspension, taking a strand or two of the muscle along with the peritonæum, would be suitable. In retroversion with a moderate sized uterus, when it was necessary to open the abdomen for inflammatory disease, shortening of the round ligaments after the manner described by Gilliam or Simpson would be the operation of choice.

Dr. Edward Staehlin, of Newark, said that the point in the résumé that had impressed him most was the description of the case of complete procidentia in the woman beyond the menopause. In such a class of cases he would recommend vaginal hysterectomy rather than the procedure recommended by Dr. Martindale. Dr. Staehlin considered chlorosis as an important factor in the production of retroflexion. He believed the Gilliam operation gave the best satisfaction as a method of restoration, and he always employed it. He did not think so much of the Alexander operation as of any of the others mentioned, and wished to know whether in performing it Dr. Martindale cut off the round ligament after it was fastened.

Dr. Martindale said that he cut off the redundant portion.

Dr. STAEHLIN suggested that it be left, giving as his reason that if, after it had been removed, anything should happen to the ligature, more trouble would be caused than was present before the operation. He then referred to the difficulty in finding an adequate means of restoring the pelvic floor. From the fact that there were so many methods of restoring the perinæum he thought it might be inferred that there were few of them that were adequate. A superficial tear down the median line, he said, might easily be overcome, but when the tear was lateral and very extensive there was a tendency to procidentia. In order to have a successful result the perinæum should be restored in an anatomical way. He considered preliminary amputation of the cervix a good point, and thought that the sound had proved to be a pernicious instrument. If a perforation was present, he believed in awaiting developments, as he felt convinced that in many cases of rupture of the uterus followed by a small perforation the wounds had healed spontaneously.

The President said that he did not believe that he anatomy of the condition was thoroughly understood. In his experience, retroposition of the uterus and produced a large number of pelvic symptoms with a pathological interest. He considered the Al-xander operation ideal, so far as anatomical condition went, but thought the Gilliam the most practical. By means of his own modification of this procdure he and his assistants had operated in about we hundred of these cases, with less than one and a laff per cent. of failures; and he thought that no ther operation could show so small a percentage. In Gilliam had told him that he was about to give p the operation that went by his name, on account if the large number of suppurative cases that he

had had. Dr. Ill's modification overcame this tendency, and he thought that its only possible danger was that the ligament might not be pulled out far enough. If it was pulled out so far as to prevent the tube from coming near the opening of the peritonæum and forming an adhesion, there would be no subsequent pain. Dr. Ill had seen a great many labors following his operation. In regard to ventral fixation, he had seen more damage done by this procedure than could be made good in a hundred years.

Dr. Gray said that he had wondered at not having heard some mention of the Webster operation, which had appealed to him as being satisfactory, simple, and effective. He wished to make a plea for more sections in cases of posterior displacement. While he had remarked the day before that he did not believe abdominal section to be altogether without danger, he thought that, comparing the slight danger attached to it with the benefit of the surgeon's knowing the whole pathology and being able to make a satisfactory support for the uterus, one must conclude that sections should be more frequent than they now were.

Dr. RECTOR said that the author of the paper did not seem to consider the fact that there were other things causing displacement than simple gravity, such as chronic metritis and salpingitis with adhesions. In order to relieve these conditions something else than the procedure described by Dr. Martindale was necessary. It appeared to Dr. Rector that all the operations mentioned were successful when applied to the proper conditions. The operation must be suited to the case. One should not say that if such and such a positive indication was present, one must do the Alexander operation, if another the Gilliam, and if a third the vaginal. Dr. Rector also remarked that Dr. Martindale had not stated that one must take into consideration the underlying conditions that had brought about the changes giving rise to the retroverted uterus, and said that if he were to advise looking into these conditions and treating them before an operation, the results would be better.

Dr. Chavanne remarked that it was the duty of the surgeon to make sure that his diagnosis was correct before inducing a patient to submit to an operation. He thought that many physicians had not sufficient sympathy with patients suffering from hysteria. He was satisfied that displacement of the uterus was often caused by the prudery of American women. Any medical man that did not take into consideration the history of the patient, her susceptibility, her emotions, and her occupation before making a diagnosis was committing an error.

Dr. Harvey said that he had not heard the part of the paper in which Dr. Martindale had mentioned the beneficial effect of pregnancy upon retrodisplacements. He thought that the general practitioner would bear him out in the statement that pregnancy had often cured retrodisplacements that had existed for some time.

The PRESIDENT stated that the late Dr. Munde had published some statistics in relation to this point, showing that only three per cent. of such patients got well after pregnancy.

Dr. Marvel said that with every retrodisplaced uterus there was a prolapse, and the fundus was

lower than it should be. An operation that would elevate the fundus of the uterus should be done. He admitted having had one accident whose cause Dr. Ill had cleared up for him, that of getting necrosis in fastening the round ligament in the Alexander operation. The stump of the ligament was, however, fastened sufficiently to the fascia of the rectum to hold the uterus in position. All things being equal, he considered Dr. Ill's modification preferable to the original Gilliam operation. The fact that it elevated the uterus made it the one in which there was the least likelihood of hernia or necrosis.

Dr. Drake, of Tennessee, said that imaginary diseases were real, material entities with a pathological basis, and the trouble could often be removed by diverting the patient's attention from the conditions that gave rise to the material images in the brain. The reason of there being so many operations for procidentia and for appendicitis in modern times, and so few in old times, was that the attention was now so often called to these particular organs through the prominence given to them by the operations of the surgeon. When the attention was concentrated for any length of time upon any particular part of the body, a pathological condition was finally produced in that part. If the attention of the patients could be turned away from their internal organs, Dr. Drake thought there would be fewer pathological conditions.

Dr. John P. Reilly, of Elizabeth, said that the discussion ought not to be closed without a further consideration of the shortening of one or both uterosacral ligaments, and he would be glad to hear from Dr. Ill upon this subject, because unmarried patients had persistent dysmenorrheaa, and married patients dysmenorrhea with sterility. All the suspensions done to relieve ordinary displacements would not cure this class of cases. All the ligaments on the front might be shortened and the floor repaired, but the case would not be cured.

Dr. Reilly thought it strange that silk had continued to be used so long in these suspensions, as catgut would give rise to much less suppuration and afford all the fixation necessary. It had occurred to him that in the method spoken of by Dr. Ill the posterior parietal peritonæum was lifted from the fascia below more than was necessary, and that this might do harm. He wished to know whether the posterior parietal peritonæum was stripped from the round ligament as it was brought through. He had stripped the peritonæum back so that he had the clear round ligament. By so doing he thought that the pushing upward of the peritonæum could be avoided.

The President said that removal of the ovaries was the operation most commonly performed for a short uterosacral ligament. In the physical examination, he said, the finger was passed into Douglas's cul-de-sac until it struck the tense cord, which was slightly pressed upon and found to be sensitive. There should be in the pelvic cavity no organ sensitive to slight pressure, and when the uterosacral ligament was so sensitive it was diseased. When the patient was put under ether, a finger was introduced into the vagina behind the uterus. The uterosacral ligament was caught on the end of the finger and was gradually brought outside. By massage the

ligament was lengthened, so that it was no longer tense and sensitive. As an additional safeguard against its contracting, it was kept on the stretch for a few days by thoroughly dilating the uterus. He always suggested that for two months following the operation the patients should use douches while on the knees and elbows, so as to keep up a little stretching of the ligament. He had sometimes had to do the operation the second time; and once it had to be performed a third time. When the changes in the uterus were not extreme, such as those produced by a chronic displacement, the patient usually got well. Two symptoms that should lead to a guarded prognosis were a sensitive spine and coccygeal pain. The pain on either side of the back, with inability to walk, was overcome by the treatment.

Dr. RICHARD C. NORRIS, of Philadelphia, said that sufficient stress had not been laid upon the preliminary treatment of the supports of the uterus and of the uterus itself. Years ago Emmet had cured a great many cases of displacement by means of careful plastic surgery followed by the use of the pessary. The wider his own experience grew, the more he was inclined to think that these operations to correct displacement had but a temporary effect. In regard to the selection of the operation for this purpose, he was glad to have found that the consensus in the New Jersey Medical Society was that the round ligament was the essential factor to be used, and that the portion of it that was the thickest and the nearest to the uterus was the one best fitted to accomplish the work. He was also glad to hear that ventral suspension or fixation should be discarded. At the Preston Retreat, in Philadelphia, there had been during the last fifty years 3,500 confinement cases, and Dr. Norris had found that in those in which ventral fixation had been used, complications in childbirth frequently occurred. had led him to believe that this operation ought to be abandoned. Even the technique that prepared for a suspension, he said, might eventuate as a fixation. It was his opinion that an operation for holding the uterus in position by means of the round ligaments would be devised that would not fasten the uterus to the abdominal wall. He had had no difficulty in regard to sloughing or hernia in either the Gilliam or the Simpson operation. He had used the procedure suggested by Dr. Ill, which had appealed to him surgically and clinically as being the most satisfactory. He was surprised that the gentlemen had failed to appreciate the Alexander operation, as he believed that there existed a class of uterine displacements in unmarried women in which this operation found a wide field of usefulness. When performed with careful technique, there was no danger of sloughing or of infection.

Df. MARTINDALE said that if a vaginal hysterectomy was done in cases of procidentia, the condition would not be cured. It was absolutely necessary to do the plastic work before any of these operations were attempted, a point that he thought he had made plain in the paper. Dr. Ill had described a method of treatment for a tender and shortened uterosacral ligament. Dr. Martindale said that he would feel a little hesitation about employing this treatment unless it was carried out by a skilled operator, as some other structure might be mistaken for

this, and damage might be produced by the massage. He was not familiar with the Webster operation, and consequently could not speak about it. thought that the proper treatment for a case of chronic metritis or salpingitis with adhesions would be supravaginal hysterectomy, which was a safer procedure than double oophorectomy with oophorosalpingectomy. He had seen cases of inflammation of the broad ligaments and the ovaries in which, when the finger was pushed into the body of the uterus, the whole structure was found to be broken down. He had seen the good effect of pregnancy upon a backward displacement of the uterus exemplified. One of the disadvantages of ventral suspension consisted in the use of silk sutures. In the clinic to which he belonged the suture material universally employed was catgut. He believed that the danger from the premature absorption of catgut was less than that from the presence of a foreign body such as silk in the abdominal cavity. In many cases the silk ligatures became infected and caused suppuration. He thought that the reason women formerly did not appear to have procidentia was that they did not then consult physicians for this trouble, and that if they had, they would not have obtained relief. He had never done the operation for shortening of the uterosacral ligament, but had seen it done in three cases in the course of the operation for bringing the uterus forward. He wished to take exception to the attitude of both speakers in regard to ventral fixation, which he believed to be the operation par excellence in women beyond the climacteric, although he considered it criminal to do this operation on a woman during the childbearing period. The suspension that took in one or two strands of the muscle he thought more effective than the ordinary suspension, in which merely the peritonæum was used. In case of a large uterus, with lax vaginal and abdominal walls, better support was afforded by ventral fixation than by any of the other operations mentioned. The sixth operation described by him was not the Simpson operation, but a modification of it devised by Dr. Charles P. Noble, of Philadelphia; it is quite similar to the operation described by Dr. Ill. If the ligament was taken up and drawn through the abdominal cavity, the inlet to the pelvis would be divided into three distinct artificial compartments. This was not anatomical, and was likely to produce strangulation of the bowel.

Book Rotices.

IWe publish full lists of books received, but we acknowldge no obligation to review them all. Nevertheless, so or as space permits, we review those in which we think ur readers are likely to be interested.]

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors, Edited by WILLIAM OSLER, M. D., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in the Johns Hopkins University, Baltimore, etc., Assisted by THOMAS MCCRAE, M. D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, etc. Volume IV. Diseases of the Circulatory System—Diseases of the Blood—Eases of the Spleen, Thymus, and Lymph Glands. Illustrated. Philanelphia and New York: Lea & Febiger, 1908. Pp. ix-17 to 865.

This is one of the most valuable volumes of this

great work which have thus far appeared—for two reasons, because the subjects treated of are for the most part diseases with which the general practitioner has frequent occasion to contend, and because the choice of authors has been singularly felicitous. The opening chapter, entitled General Considerations in Cardiovascular Disease, is by Dr. Charles F. Hoover, of the Medical College of the Western Reserve University. It is a scholarly and exceedingly satisfactory discussion of certain points of great practical importance in connection with discases of the heart and bloodvessels.

Chapter ii, dealing with diseases of the pericardium, is by A. McPhedran, M.B., professor of medicine and clinical medicine in the University of Toronto. The subjects considered are pericarditis, adherent pericardium (well characterized by the author as, "properly speaking, only the adhesion of the two layers of the pericardium resulting from divers forms of pericarditis, and therefore neither a disease nor an affection," but as presenting such special clinical signs and being associated with such lesions within and without the pericardium as to merit separate description), tuberculous pericarditis, hydropericardium, hemopericardium, pneumopericardium, and neoplasms, syphilis, and complete and incomplete deficiency of the pericardium. The chapter is marked by the excellence which stamps all of Professor McPhedran's writing.

Chapter iii, on diseases of the myocardium, is the work of Dr. Robert H. Babcock, of Chicago. It is an instructive essay on the inflammatory, infective, and degenerative affections of the muscular substance of the heart and on new growths and parasites of that structure. It is interesting to note Dr. Babcock's remarks on the abuse of alcohol in the ætiology of myocardial degeneration. He says: "On the whole, the writer is inclined to the view that the degeneration of the myocardium found in drunkards is not attributable so much to the alcohol as to impurities contained in the vile stuff they drink, for it is a known fact that men who drink only the best and purest whiskey often consume a quart or more daily for a lifetime without displaying more evidence of heart disease than do their strictly temperate brethren.

He thinks that the so called resistance exercises are not so beneficial as breathing exercises and other lighter gymnastics, though "if the degree of resistance is properly applied to the patient's condition, the movements lighten the labor of the heart." In regard to the Nauheim baths, he remarks that it is not customary at Bad Nauheim to begin a course of treatment with carbonated waters, and he deprecates the misleading statements of certain manufacturers who magnify the ease with which imitation Nauheim baths may be administered in the patient's own home and the benefit alleged to follow their use. The reader should by all means ponder what Dr. Babcock has to say about medicines which act on the heart, especially aconite, beginning on page 122.

The fourth chapter, on acute endocarditis, is by Dr. Osler; the fifth and sixth, on hypertrophy of the heart and on insufficiency and dilatation, are by Alexander G. Gibson, M. A., B. M., M. R. C. P., of the Pathological Department of Oxford University; and the seventh, on diseases of the valves, is the

joint production of those two writers. In the chapter last mentioned, on page 222, there is a very satisfactory account of the Flint murmur, and all three of the chapters are excellent. We would particularly commend the paragraphs on digitalis, beginning on page 265. Chapter viii, on functional diseases of the heart, is the work of Dr. Hoover, and it is exceedingly instructive. In chapter ix, on congenital cardiac disease, by Dr. Maude E. Abbott, of McGill University, we find instructive accounts of many pathological conditions which are not usually treated of in textbooks. Dr. Abbott makes extensive use of the German word Rechtslage; it certainly has the advantage of brevity. In chapters x and xi Dr. Osler deals with diseases of the arteries; chapter xii, by Dr. George Blumer, of the Yale Medical School, is on thrombosis, embolism, and phlebitis; and Dr. Aldred Scott Warthin, of the Department of Medicine of the University of Michigan, finishes the first part of the volume with a chapter on diseases of the lymphatic vessels. All these writers deal acceptably with their themes.

Dr. Richard C. Cabot, of the Medical School of Harvard University, contributes the first and second chapters of Part II (chapters xiv and xv of the volume), on the general pathology of the blood forming organs and on pernicious and secondary anæmia, chlorosis, and leuchæmia. We are glad to see these positive statements in his section on chlorosis: "Chlorosis is one of the four or five diseases now known to us which can be cured with a drug; despite some hypercritical skeptics, there is no longer the slightest doubt of this fact. In any case of supposed chlorosis which does not yield readily to iron administered in the proper manner and in the proper dose we have reason for doubting the diagnosis." Dr. Cabot questions the propriety of Leube's term leucanæmia until the supposed condition can be more definitely diagnosticated; and we think he is right. Chapter xvi, on purpura and hæmophilia, is by Dr. Joseph H. Pratt, of the Medical School of Harvard University. It is a very satisfactory chapter.

Part III opens with chapter xvii, on diseases of the spleen, by Dr. Irving Phillips Lyon, of the Medical Department of the University of Buffalo. Dr. Lyon's account of kala-azar (tropical febrile splenomegaly) is particularly interesting. Chapters xviii and xix, on diseases of the thymus and on diseases of the lymphatic glands, by Dr. Warthin, conclude the volume. The author stoutly combats the dictum that there is no such thing as thymic asthma. His descriptions of that affection, of thymic stridor, and of the relation of thymic disease to sudden death are good examples of vigorous and convincing writing.

In general, the mechanical work on the volume has been well done, but we find far too many evidences of inadequate proofreading. We will cite only some of the worst of them. In the list of contributors Dr. Babcock is mentioned as connected with the "Mariam-Sims" Hospital; on page 19 we find the following foot note: "Mass der Ernüdung der gesund und Kranken Menchen" (which should be Mass der Ermüdung der gesunden und kranken Menschen); on page 264 there occurs the expression "hydrochloride acid"; and on page 681 we find "data is" (in the foot note). It is a pity that such a noble work should be so disfigured.

Studies from the Institute for Medical Research, Federated Malay States. Volume III, part 3. Breeding Grounds of Culicida, by C. W. Daniels, M. B. (Camb.), M. R. C. S. (Eng.), Director of the Institute for Medical Research, Federated Malay States. The Culicidæ of Malaya. By G. F. Leicester, M. B., C. M. (Edin.), Assistant in the Institute for Medical Research, Federated Malay States. Singapore, Shanghai, Hong Kong, and Yokahama: Kelly & Walsh, Limited, 1908. (Price, 1s. 6d.)

The third part of volume three of the Studies from the Institute for Medical Research, located at Kuala Lumpur, Federated Malay States, is a technical volume on the mosquitoes of the peninsula. The volume opens with a paper by Dr. C. W. Daniels, formerly director of the institute, but now of the London School of Tropical Medicine, on the breeding grounds of the various mosquitoes to be found in Malaya. This is followed by a description by Dr. Leicester of the various mosquitoes found in the peninsula. The volume was in press when the fourth volume of Theobald's Monograph of the Culicide of the World was published, so that some of the species described in this volume will be found to have different names in the book by Theobald. The book will be of great value to those working in medical entomology.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Die Seelenwunden des Kulturmenschen. Von Standpunkte moderner Psychologie und Nervenhygiene. Gedanken zu einer wissenschaftlichen Religion. Von Dr. Karl Oelker. Zurich: H. Zimmerman, 1908. Pp. 214.
Bibliothèque de thérapeutique. Publiée sous la direction de A. Gilbert, professeur de thérapeutique à la Faculté de médecine de Paris, et P. Carnot, professeur agrégé de thérapeutique à la Faculté de médecine de Paris. Physiothérapie-méchanothérapie-ré-éducation-sports-méthode de Bier-hydrothérapie. Par les Docteurs Fraikin, Grénire de Cardenal, Constensoux, Tissié, Delagenière, Pariset. Avec 114 figures dans le texte. Paris: J. B. Baillière et fils, 1909.

114 figure's dans le texte. Paris: J. B. Baillière et fils, 1900. Pp. 404.

Studies from the Institute for Medical Research, Federated Malay States. Volume III, Part III. Breeding Grounds of Culicidæ. By C. W. Daniels, M. B., Camb., M. R. C. S., Eng., Director of the Institute for Medical Research, Federated Malay States. The Culicidæ of Malaya. By G. F. Leicester, M. B., C. M., Edin., Assistant in the Institute for Medical Research, Federated Malay States. Singapore: Kelly & Walsh, Limited, 1908. Pp. 269.

Les Erythèmes graves (syndrome érythemateux). Principalement au cours de la fièvre typhoïde. Par le Dr. Marcel Poisot, ancien interne des hôpitaux de Paris, etc. Paris: Jules Rousset, 1908. Pp. 208.

Report of the Board of Managers of the Pennsylvania Hospital to the Contributors at their Annual Meeting Held Fifth Month, 4th, 1908, Comprising the Report of the De-

Fifth Month, 4th, 1908, Comprising the Report of the Department for the Sick and Wounded and the Departments for the Insane, West Philadelphia, together with Accounts of the Treasurer. Pp. 119.

New York State Commission in Lunacy. Nineteenth Annual Report. October 1, 1906, to September 30, 1907.

Annual Report. October 1, 1906, to September 30, 1907.
Pp. 1317.
Ophthalmic Surgery. A Handbook of the Surgical Operations on the Eyeball and Its Appendages as Practised at the Clinic of Prof. Hofrat Fuchs. By Dr. Josef Mellet, Privatdocent and First Assistant K. K. II, University Eye Clinic, Vicnna. The Translation Reviewed by Walter L. Pyle, A. M., M. D., Member of the American Ophthalmological Society, Ophthalmologist to Mount Sinai Hospital, etc. With 118 Original Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xiii-262. (Price, \$3.00.) The New Standard Formulary. Volume 1 Tharmac tical Preparations. Comprising all Preparations Official or Included in the Pharmacopecias, Dispensatories, or Formularies of the World, together with a Vast Collection from Other Sources, the Whole Embracing the Entire Field of Pharmacintical Preparations as related to all Schools of Medical Practice. By A. Emil Hiss, Ph. G., and Albert E. Ebert, Ph. M., Ph. D. Chicago: G. P. Bragelhard & Co., 1908. Pp. 576

Transactions of the Mississippi State Medical Association. Forty-second Annual Session, held in Natchez, April

tion. Forty-second Annual Session, held in Natchez, April 14 to 17, 1908. Pp. 324.

The Principles of Pathology. By J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGili University, and Pathologist to the Royal Victoria Hospital, Montreal, etc. Volume I. General Pathology. With 322 Engravings and 16 Plates. Philadelphia and New York: Lea & Febiger, 1908. Pp. xvi-948.

A Manual of Midwifery. By Thomas Watts Edem, M. D., LL. D., F. R. S., Professor of Pathology in McGill Obstetric Physician with Charge of Out Patients and Lecturer on Practical Midwifery and Gynacology, Charing Cross Hospital, etc. With 42 Plates, and 230 Illustrations in the Text. Second Edition. Chicago: W. T. Keener & Co., 1908. Pp. xii-555. (Price, \$3.50.)

Miscellany.

A Study of One Hundred Refraction Cases in Indians Fresh from the Plains .- Dr. Jones makes a report of one hundred cases, covering 289 admissions at the Hampton (Va.) Normal and Agricultural Institute. The percentage having refractive errors necessitating the wearing of glasses to improve vision and to relieve symptoms of eyestrain was 34.6 per cent. The ages were from 14 to 22; males, 127, in this series 44 cases, or about 35 per cent.; females, 162, in this series 56 cases, or about 34 per cent. On admission a careful test of vision was made, and when it was below 20/20 in each eye, or when the usual symptoms of eyestrain developed subsequently, a thorough refractive test was made. In making this test careful and systematic use was made of the ophthalmometer, ophthalmoscope, retinoscope, phorometer and test lenses, employing a cycloplegic in every case. In these 100 cases-200 eyes-the refractive varieties found were as follows: Hyperopia, 38 eyes; simple hyperopic astigmatism, 26; compound hyperopic astigmatism, 60; myopia, 13 eyes; simple myopic astigmatism, 15; compound inyopic astigmatism, 32; mixed astigmatism, 16. The axis of hyperopic astigmatism was 90 degrees in 69 eyes, 180 degrees in 5, 45 or 135 degrees in 5, nearer vertical than horizontal in 13, and nearer norizontal than vertical in 6. The myopic axis was 180 degrees in 38 eyes, 90 degrees in 4, 45 or 135 legrees in 4, nearer vertical than horizontal in 4, and nearer horizontal than vertical in 15. There vere 3 cases of heterophoria amounting to as much is 2 degrees, no case being treated other than corecting the refractive error. No strabismus. A narked tolerance for cycloplegics existed in the Inlian. Scopolamine was not effective, being practicalworthless. Homatropine, 1/25 grain in each eye, pplied by means of gelatin discs, was usually reliale; this dose was repeated in thirty minutes in bout 10 per cent. of the cases. Atropine was necssary in 3 cases. A less than 2 per cent. solution f the latter was ineffective; also the strong soluon of atropine was found necessary when its efect was desired in treating eye injuries of Indians ccurring in the school work shops. Fifty-one, or 7.65 per cent. of the whole number, had trachoma 1 entrance, 16 cases in this series; the remaining 5 had normal vision. All trachoma patients were eated surgically, being promptly rolled by Knapp's rceps, and active after treatment. In the 16 cases

mentioned in the refractive series, the test was not made till the acute symptoms had subsided and the corneæ became clear. The care exercised by officers, physicians, and nurses with these patients has prevented the spread of the disease at the institution.—The Journal of the American Medical Association

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ended August 14. 1008:

| week ended August 14, 1908: | |
|---|--------------------|
| Smallpox-United States. | |
| l'laces. Date. C | lases. Deaths |
| California—San FranciscoJuly 18-25 California—San Diego CountyJune 1-Aug. 3 | 20 |
| Illunia—Chicago County June 1-Aug. 3 | 98 |
| Illinois—Chicago July 25-Aug. 1 Imhana—Fort Wayne July 20-Aug. 1 | ī |
| Indiana—IndianapolisJuly 26-Nag. 2 | T |
| Indiana-La l'ayetteJuly 27-Aug. 3 | 1 2 |
| Indiana—South BendJuly 25-Aug. 1 Iowa—BurlingtonJuly 15 | I I |
| Michigan—DetroitJuly 25-Aug. 1 | 1 |
| Missouri-St. Josephluly 18-25 | 4 |
| Ohio—Dayton | 1 |
| Washington—SpokaneJuly 18-25 | 3 7 |
| \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 5 |
| | |
| Smallper Fereign. | 6 |
| \rabia—AdenJune 30-July 13 | 1 |
| Cenada—Irantax J., 25 v.g. 1 China—Shanghai June 21-28 Lagypt—Caro July 1-15 India—Bombay June 23-July 7 | 2 1 |
| Egypt—CairoJuly 1-15 | 9 " |
| India—BombayJune 23-July 7 | 34 |
| India—Calcutta June 6:20 | 72 |
| Italy - Na les July 4:18 | 35 |
| Java-Batavia | 9 |
| Portugal-LisbonJuly 11-18 | 1 |
| Russia—Moscow July 6-11 | 14 14 |
| Russia-St Petersburg July 4-11 | 47 13 |
| Russia—Warsaw | |
| Spain—Valencia. July 11-15. Turkey—Constantinople. July 5-12 | 7 |
| | |
| Yellow Ferer-Foreign. | |
| Brazil-Manaos June -9-July 11 | 5 . |
| Mexico—Vera Cruz | 1 |
| .tug. 10 | |
| Cholera—Foreign. | |
| China Ana v Aug. 11 | Present |
| China—Hengkong June 13-27 India—Banbay, June 23 30 | 5 4 |
| India—CalcuttaJune 6-20 | 90 |
| India—Rangoon une 13-20 | r |
| Russia-Baloom District Aug. 10 | Present Present |
| Russia-Moscow District | Present |
| | 21. 70110 |
| PlagueForcign. | |
| Azores—Fayal. To Aug. 10. Azores—Terceira. To Aug. 10. Brazil Rio de Janeiro. July 11:25. | 12 10 |
| Brazil Rio de JaneiroJuly 11-25 | 7 7 |
| hile—Antologasta June 27 | 3 |
| Chile-Iquique | 160 10 |
| China—Hongkong. June 13:27. Egypt—General. July 8:14. | 22 0 |
| Egypt— MexandriaJuly 10-16 | 4 2 |
| Egypt-Port Said | . i |
| India—General. June 21-27. India—Bombay. June 23-July 7. | 563 103 |
| India—CalcuttaJune 6 20 | 71 |
| India-RangoonJune 13-20 | 10 |
| Peru-General July 6 H | 40 26 |
| Peru—Callao July 6-11 July 6-11 July 6-11 | 6 |
| term the second | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 12, 1908

COBB. J. O., Surgeon. Directed to proceed to Chicago, Ill., for special temporary duty, upon completion of which to rejoin his station at Milwankee, Wis

Dunn, James, Acting Assistant Surgeon. Granted leave of absence for thirty days from August 17, 1908.

Gahn, H. E., Pharmacist. Granted leave of absence for

eleven days from August 10, 1908. Goldberger, J., Passed Assistant Surgeon. Detailed to represent the service at the International Fishery Congress, to be held in Washington, D. C., September 22 to 26, 1908.

GUSTETTER, A. L., Acting Assistant Surgeon. Granted leave of absence for two days from August 10, 1908. HICKS, B. I., Acting Assistant Surgeon. Granted leave of absence for twenty-three days from August 14, 1908.

McGinnis, R. H., Acting Assistant Surgeon. Leave of absence granted July 17, 1908, for fifteen days from August 17, 1908, revoked.

MEAD, F. W., Surgeon. Granted leave of absence for one

month from August 26, 1908.

MILLER, W. W., Assistant Surgeon. Granted leave of ab sence for six days from July 27, 1908, under paragraph 191, Service Regulations.

SEAVEY, L. T., Acting Assistant Surgeon. Granted leave of absence and amended so as to grant him twenty-one days from August 3, 1908.

SWEET, E. A., Assistant Surgeon. Granted leave of absence for two months from August 18, 1908.

TARRELL, B. C., Acting Assistant Surgeon. Excused from duty without pay, August 31 to September 30, 1908, inclusive. Vogel, C.

EL, C. W., Passed Assistant Surgeon. Relieved from special temporary duty at San Juan, Puerto Rico, and directed to report at the Bureau, Washington, D. C. Wakefield, H. C., Acting Assistant Surgeon. Granted leave of absence for twelve days from August 8, 1908. Woodward, R. M., Surgeon. Granted leave of absence for Walley and State of Stat

thirteen days from August 24, 1908.

Promotion.

Pharmacist Newton C. Comfort, promoted to pharmacist of the second class.

Dr. Leroy M. Stowe, appointed an acting assistant surgeon for duty in the office of the American consul at Tampico, Mexico.

Boards Convened.

A board of medical officers was convened to meet at Baltimore, Md., August 12, 1908, for the purpose of making a physical examination of a surfman of the Life Saving Service. Detail for the board: Passed Assistant Surgeon J. T. Burkhalter, chairman; Assistant Surgeon H. J. Warner, recorder.

A board of medical officers was convened to meet at San Francisco, Cal., August 14, 1908, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending August 15, 1908:

Anderson, E. H., First Lieutenant. Ordered to return to station, Fort Wingate, N. M., from duty in field.

BIRMINGMAM, H. P., Lieutenant Colonel. Detailed mem-

BIRMINGMAM, H. P., Lieutenant Colonel. Detailed member of examining board, appointed in paragraph 28, S. O. 98, April 25, 1908, War Department, vice Colonel Charles B. Byrne, Medical Corps. So much of paragraph 5, S. O. 152, June 29, 1908. War Department, as directs the officers therein named to report to Colonel Charles B. Byrne, Medical Corps, as president of the examining board, is amended so as to direct them to report to Colonel Valery Havard, Medical Corps, president of the board, vice Colonel Byrne.

BLANCHARD, ROBERT M., Captain. Leave of absence for ten days is extended twenty days.

CRANTEEE, GEORGE H., Captain. Left Ancon, Canal Zone, on leave of absence for fifty-four days.

on leave of absence for fifty-four days.

Heysinger, James D., Captain. Granted leave of absence

Huber, Edward G., First Licutenant. Left camp at Chick-amauga Park, Ga., for camp at Fort Riley, Kan. Koerper, C. E., Captain. Granted leave of absence from Cuba, to commence about September 11th and ending

October 7th, with permission to visit the United States.

LAMBIE, JOHN S., JR., First Lieutenant. Left camp at Chickamauga Park, Ga., for camp at Fort Riley, Kan. REYNOLDS, CHARLES R., Captain. Left camp at Chicka-mauga Park, Ga., for camp at Fort Riley, Kan. Scott, George H., Captain. Granted leave of absence for

one month after return of troops from maneuvre camp.

Suggs, Frank, First Lieutenant. Ordered from Fort
Niagara, N. Y., to Fort Washington, Md., for temporary duty during the absence of Captain Samuel J.

Morris, Medical Corps.

TROTTER-TYLER, GEORGE, First Lieutenant. Ordered from Fort Adams, R. I., to Fort Monroe, Va., for temporary duty

duty.

The following named majors have been ordered to report in person, on September 21, 1908, to Colonel Valery Havard, Medical Corps, president of the examining board at the Army Medical Museum, Washington, D. C., for examination to determine their fitness for promotion: H. S. T. Harris, Edward R. Morris, William P. Kendall, Henry I. Raymond.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending August 15, 1908:

BOYD, J. C., Medical Director. Detached from command of the Naval Medical School Hospital, Washington, D. C., and ordered to continue duties as president of the Naval and Medical Examining Boards at that

school.

Cohn, I. F., Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

Harmon, C. E. H., Medical Director. Ordered to command the Naval Medical School Hospital, Washing-

HAYWOOD, A. B., Assistant Surgeon. Detached from duty with the marine detachment at Camp Ellicott, Isthmian Canal Zone, Panama, and to the Naval Recruiting Sta-

tion, Pittsburgh, Pa.

Shephard, C. W., Assistant Surgeon. Detached from the
Naval Hospital, Mare Island, Cal., September 1st, and
ordered to the Naval Medical School, Washington,

D. C., October 1st, for instructions.

TURNER, H. W. B., Assistant Surgeon. Appointed assistant surgeon from July 29, 1908.

URIE, J. F., Surgeon, retired. Ordered home, when discharged from treatment at the Naval Hospital, Marc Island, Cal.

Births, Marriages, and Deaths.

Durgin—Adams.—In Boston, on Wednesday, August 12th, Dr. Samuel H. Durgin and Mrs. Emma Elizabeth

EISAMAN—PERCY.—In Atlantic City, New Jersey, on Saturday, August 1st, Dr. Ollie N. Eisaman, of Pittsburgh, and Miss Alice Percy.

SIMS—SICKEL—In Philadelphia, on Wednesday, August 5th, Dr. Nelson I. Sims, of Kalamazoo, Michigan, and Miss Irene F. Sickel.

STAFFORD—SKINNER.—In Herkimer, New York, on Wednesday, August 5th, Dr. Rosslyn J. Stafford and Miss Ora Skinner.

Burr.—In South Framingham, Massachusetts, on Thursday, August 13th. Dr. Charles H. Burr, formerly of New York, aged fity-three years.
GLENN.—In Norfolk, Virinia, on Tuesday, August 11th, Dr. Frank B. Glenn, aged thirty years.
HABRSHAW.—In Saratoga, on Sunday, August 16th, Dr.

M. Habirshav Lowber.—In Wilmington, Delaware, on Wednesday, August 12th, Dr. Alexander Lowber, aged sixty years.

SMITH.—In Gaincsville, Georgia, on Friday, August 7th, Dr. K. A. Smith, aged thirty-eight years. WHEAT.—In Philadelphia. on Wednesday, August 12th, Dr. Lewis E. Wheat, aged forty-five years.

New York Medical Journal

Philadelphia Medical Journal and Medical News

A Weekly Review of Medicine, Established 1843.

VOL. LXXXVIII, No. 9.

NEW YORK, AUGUST 29, 1908.

WHOLE No. 1552.

Original Communications.

THE TREATMENT OF TUBERCULOSIS BY THE ADMINISTRATION OF MERCURY

at the U. S. Naval Hospital, New Fort Lyon, Colorado.*

BY SURGEON BARTON LISLE WRIGHT, United States Navy

About six months has elapsed since we began to treat tuberculosis by deep muscular injections of miercury, during which time two reports have been published, the first in the April number of the United States Naval Medical Bulletin, the second in the July number of the same magazine.

In the latter issue we reported the results of forty cases then under treatment (May 25, 1908) showing seventy per cent. of improvements, or twentyeight cases improved, out of the forty so treated, many of which were quite marked.

Since that date the percentage of improvements among these forty cases has risen to eighty-five, or thirty-four cases improved.

We now have sixty-five patients taking the treatment, and from present indications the percentage of improvements will equal, if not surpass, that obtained from the forty already reported.

A few of these patients have moderately advanced lesions, but the most of them are well or far advanced cases, which emphasizes in a marked degree the value of mercury as a curative agent in this dis-

We now have one hundred and six patients in the hospital, sixty-five of whom are voluntarily taking the injections; of the forty-one not taking the injections but a few are improving, and in these the improvement is mostly confined to their general condition, the extent of their pulmonary lesions remaining unchanged, or if improved, but to a slight

Among the one hundred and six patients we have twelve officers, who are living in old dwelling houses, repaired to meet the emergency, with very small porch areas for out door life, while the enlisted patients are quartered in modern open air wards of the most approved type, or in large tents.

To offset the disadvantages under which the officers are living at present, owing to the uncompleted hospital facilities, we have their superior intelligence, which is that of the average educated man. This renders them more susceptible to advice; to this, and their evident anxiety to get well as quickly

as possible, so that they may resume their professional duties, I attribute their rapid progress.

Of the twelve officers under treatment, two have refused to take the mercurial treatment. Of these two patients one has progressively failed, the second has about held his own.

The other ten are taking mercury, and nine are rapidly improving, or ninety per cent., while one has failed slightly (Case V). This patient was admitted April 9, 1908, and since admission has ridden horseback rather vigorously, in addition to which, he spent some twenty days' leave in the East, during which time he indulged in swimming, canoeing, and horseback riding, and did not receive the mercurial treatment, all of which has tended to retard his improvement.

The following detailed report of the above twelve patients in the order of their admission, well demonstrates the efficiency of mercury in the treatment of tubercular disease.

CASE I.-J. T W., carpenter, U. S. N., admitted May

Family history. Paternal grandfather, killed in an accident; paternal grandmother, died of old age; maternal grandfather, died of old age; maternal grandmother, died of old age; father, died in forty-ninth year of abscess of brain; mother, living and in excellent health; one brother, killed in an accident; one brother living, in good health; three sisters living, in excellent health.

Personal history. Born December 20. 1871, at Balti-

Personal history. Born December 20. 1871, at Baltimore, Md.

During childhood had measles; when about four years of age had pneumonia. Between this time and November, 1902, was perfectly well. About November, 1902, while serving on the U. S. S. Monongahela, contracted a cold for which he received treatment. In December, 1902, while at sea, en route to the West Indies, diagnosis of pulmonary tuberculosis was made. Sputum positive for tubercle bacilli, and physical signs noted in left lung. On January 31, 1903, was detached and ordered to the U. S. Naval Hospital, New York, arriving 8th of February, 1903. Was detached and ordered to the U. S. Army General Hospital, Fort Bayard, N. M., where he reported March 4, 1903. He improved considerably, and was discharged from Fort Bayard, July 25, 1905, in very good condition, but his sputum would occasionally show the presence of tubercle bacilli. He reported to the Retiring Board in Washington, D. C., on the 14th of August, 1905; the board found him "temporarily incapacitated for active duty," and recommended "six months sick leave" At the expiration of this leave, he reported to the same board, by order of the Navy Department. The board found him "fit for duty." He was ordered to the Naval Station, Hawaii, for duty. He performed duty, and enjoyed fairly good health until the latter part of February, 1907 (with the exception of losing weight).

At this time he began to grow weak, to cough, and to

the latter part of February, 1907 (with the exception of losing weight).

At this time he began to grow weak, to cough, and to have slight expectoration. During the first week in March, 1907, had a severe attack of what was diagnosticated as influenza. The symptoms at this time were repeated chills, high fever, and severe night sweats. On the 13th of March, 1907, was detached and transferred to the Naval

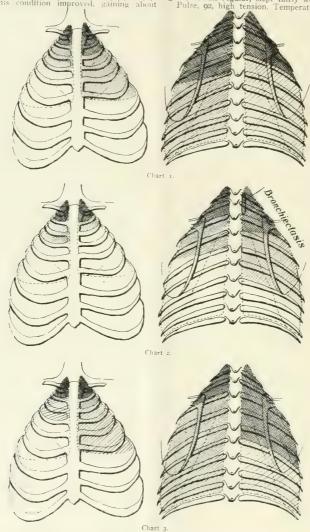
^{&#}x27;Dated July 18, 1908

Hospital, Mare Is'and, via the transport Dix. The chills, fever, and night sweats disappeared the second day out from Honolulu.

Arrived at the Mare Island Hospital March 30, 1907. In this hospital his condition improved, gaining about

This patient bad never had a hæmorrhage. Present condition. Felt fairly well, slight cough, slight expectoration, no night sweats, no hæmorrhages, appetite good, bowels regular, slept fairly well.

Pulse, 92, high tension. Temperature, normal. Respira-



CASE L

I to the the cost to talk the explanation holds good

////// A=Infiltration.

V V B=Rales. C=Consolidation. D=Friction Rub.

 $\mathbf{E} = Cavity.$ F=Pleural Effusion.

eight pounds in weight. His sputam on third examination howed numerous tubere's bacilli. Was detached from Mare Island on April 30, 1007, and ransferred to the U.S. Navid Hospital, New Fort Lyon, May 4, 1007.

tion, 24. Enger nails slightly clubbed, no cyanosis. Normal height, 5 feet to melies. Normal weight, 154 pounds, Normal ehest creemference. 345 melies; normal expan-

Physical examination Chart I shows condition of lungs

on this date. Spetum examination showed numerous tu bercle bacilli. This patient refuses mercurial treatment.

Third physical examination January 29, 1908. Chart 2 shows the improvement due to sanatorium treatment since admission.

Fourth physical examination July 9, 1908, showed an increase in the pulmonary lesions as seen in chart 3.

Weight at this time was 139 pounds, a loss of one half

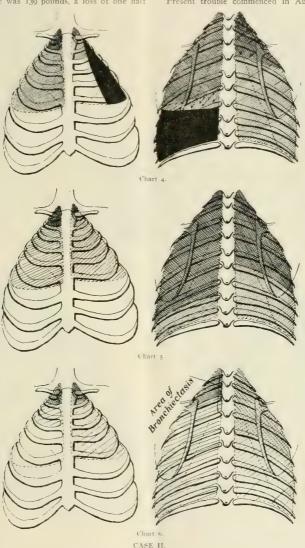
year, old age; three brothers, living, good health; one sis-

year, on age, three brothers, hving, good health, there, living, good health.

Personal history. Born October 28, 1873, at San Francisco, Cal. No history of childhood diseases obtainable.

Entered service August 24, 1894. In 1896 was at Mare Island Hospital for four months on account of fractured kneecap.

Present trouble commenced in August, 1906, while on



pound since admission. Tubercle bacilli were still present in sputum.

Case II.—H. J. W., warrant machinist, U. S. N., admitted November 29, 1007.

Family history. Paternal grandfather, negative; paternal grandmother, negative; maternal grandfather, negative; maternal grandmother, negative; father, living, good health, seventy-six years old; mother, died in seventieth

the U. S. S. Galveston, at Cheefoo, China, with a cough, expectoration, loss of weight, loss of sleep, and loss of appetite. Tubercle bacilli were found in sputum. Transferred to Mare Island Hospital, arrived there in October, 1906; transferred to U. S. Army Hospital at Fort Bayard in December, 1906. was in bed ten months and seven days, marked improvement; transferred to this hospital, received November 29, 1907.

Present condition. Felt weak. Appetite good, slept well, bowels regular. Coughed and expectorated mostly in the morning and evening. Occasionally pains in left side of chest. Height, 5 feet 7½ inches. Normal weight, 150 pounds; present weight, 142 pounds. Pulse, 85 to 100. Temperature, 08.2° to 100° F. Respiration, 20. Chest cir-

March 28, 1908, weight, 135 pounds. Third physical ex-mination. The condition of the lungs at this time is

amination. The condition of the lungs at this time is shown by Chart 5.
July 2, 1908. Fourth physical examination. Considerable improvement in the pulmonary lesions and general condition of the patient was noted at this time, and is

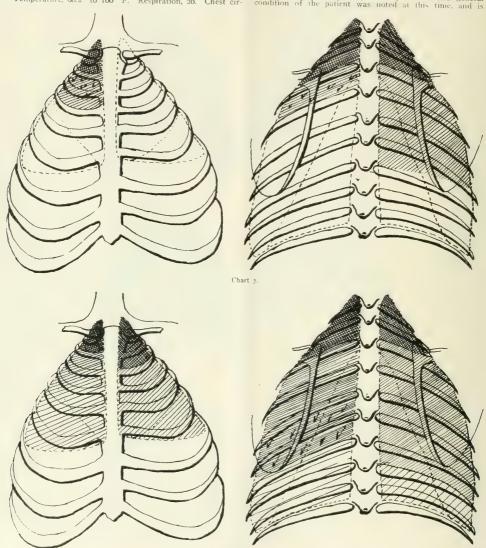


Chart 8 CASE III

cumference, 34.5 inches; inflated, 36 inches; deflated, 33.5 inches; expansion, 2.5 inches.

First physical examination this date, results of which are shown on Chart 4. Sputum examination: Very numerous tubercle bacilli. February 18, 1908

Patient was placed upon the mercury treatment.

shown in Chart 6. Weight, 145 pounds. Sputum examination: A few tubercle bacilli.

CASE III.-L. C. H., gunner, U. S. N., admitted Novem

ber 33, 1007.

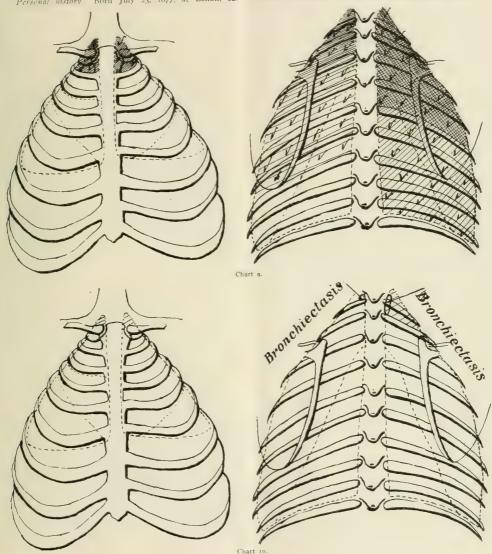
Family history. Paternal grandfather, died in eightyfourth year, old age; paternal grandmother, died in eightyfourth year, old age; maternal grandfather, died in sixty-

fifth year, old age and trouble; maternal grandmother, died htth year, old age and trouble; maternal grandmother, die in seventy-fifth year, old age; father, living, in good health, fifty-seven years old; mother, living, in good health, fitty-two years old; one brother, living, in good health; two sisters, living, in good health; two sisters, living, in good health.

*Personal history** Born July 23, 1877, at Lenox, Ia.

1907, while on the U. S. S. Indicna, at League Island, with a cold. Tubercle bacilli found in sputum about November 11, 1907; transferred to this hospital, received November 29, 1907. Smoked moderately and was an extremely moderate consumer of alcoholic stimulants.

Present condition Felt well and strong Appetite good;



CASE IV

During childhood had measles, no other sickness until after entering the service. Entered the service September

21, 1892.

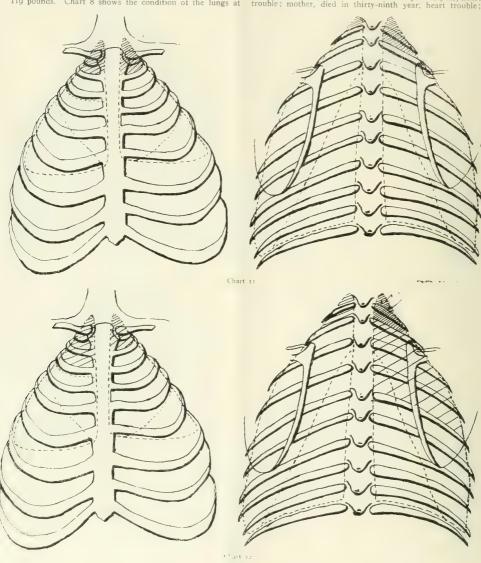
In 1897, while at the gunnery school, Washington, D. C., had typhoid fever; was in the Washington Hospital about two months; complete recovery.

Present trouble commenced in September or October,

slept well; bowels were slightly constipated. Coughed and siept well; bowels were sughtly constipated. Coughed and expectorated slightly in the morning. Had a sore throat, voice somewhat husky. Height, 5 feet 7½ inches. Normal weight, 145 pounds; present weight, 131 pounds. Pulse, 88. Temperature, 97.4° F. Respiration, 16. Chest circumference, 35.5 inches; inflated, 36.5 inches; deflated, 33 inches; expansion, 3.5 inches.

First physical examination, November 29, 1907. Chart 7 shows the condition of the lungs at this time. Tubercle bacilli were numerous. Other bacteria numerous. Third physical examination, July 13, 1908. Since admission this patient had progressively failed. Present weight, 119 pounds. Chart 8 shows the condition of the lungs at

Family history. Paternal grandfather, died in fiftieth year, Civil War effects; paternal grandmother, negative; maternal grandfather, died in seventy-second year, heart trouble; maternal grandmother, living, in excellent health, in eighty-second year; father, died in fifty-third year, heart trouble; mother, died in thirty-ninth year, heart trouble;



this time. Tubercle bacilli were numerous; other bacteria also numerous.

This patient did not take mercurial treatment.

CASE IV.—E. S. S., midshipman, third class, U. S. N.,
admitted March 16, 1908.

Nationality Paternal grandparents, Scotch; maternal
grandparents, Figli h

one brother, living, in good health; one sister, living, in

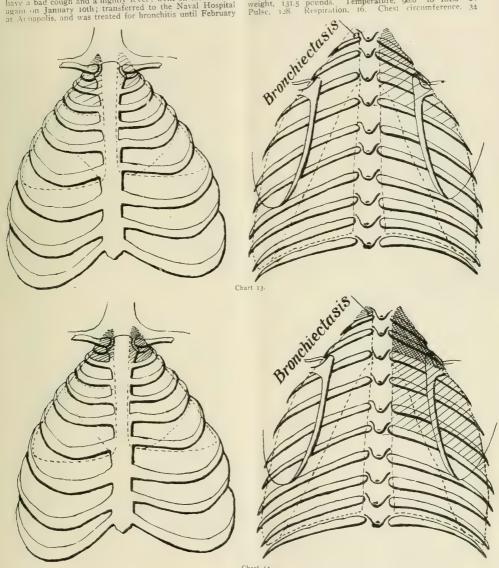
good health.

Personal history. Born March I, 1890, at Brooklyn, N. Y. Childhood diseases; measles; had tonsilitis and bronchitis when about seven years old; no other sickness until the present time.

Appointed to the U. S. Naval Academy September, 1906.

Present trouble commenced in December, 1907, while at the Naval Academy, with influenza; was on the sick list for four days; after leaving the hospital continued to have a bad cough and a nightly fever; went on the sick list again on January 10th; transferred to the Naval Hospital at Atnapolis, and was treated for bronchitis until February

well, bowels regular. Coughed and expectorated very little in the mornings. Had a slight hoarseness. Height, 5 feet 934 inches. Normal weight, 150 pounds; present weight, 131.5 pounds. Temperature, 98.6° to 101.6° F. Pulse, 128. Respiration, 16. Chest circumference, 34



CASE VI.

toth; went back to duty for three days, then placed on the sick list again with a temperature of 102° F. Sputum was examined about February 20th, and tubercle bacilli were found to be present. Transferred to this hospital, received

March 16, 1908.

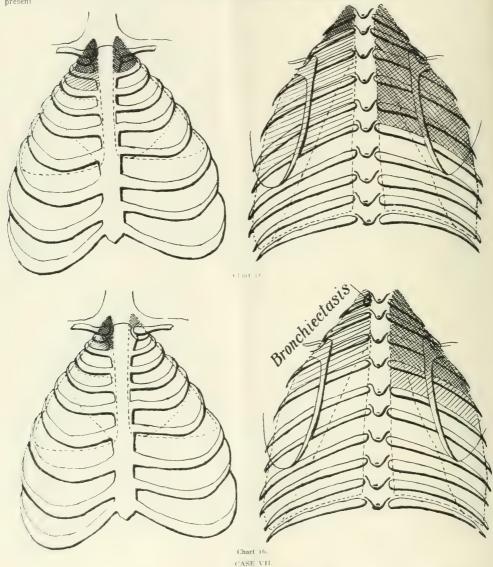
Habits. Did not smoke or drink

inches; inflated, 35.5; deflated, 31.75; expansion, 3.75 inches. Chart 9 shows the condition of the lungs at this time. Sputum examination showed numerous tubercle bacilli. March 18th, placed upon the mercury treatment. Third physical examination July 16, 1908. Present condition. Felt well, appetite good, slept well,

bowels regular Very slight cough and expectoration. Temperature, 98.6° F; weight, 154 pounds.

Chart 10 shows the very marked improvement during the prior four months and the condition of the lungs at this time. Sputum examination: A few tubercle bacilli were present

in about sixty eighth year, apoplexy, maternal grand-mother, died in about fortieth year, ovarian tumor; father, living, in good health, in seventy-fifth year; mother, living, in sixty-fifth year, has Bright's disease; two half brothers, living, in good health; two brothers, one died of cholera infantum, other tuberculosis; one sisten living, in good



CASE V.-W. H. B., Surgeon, U. S. N., admitted April

6, 1008. Nationality. Paternal grandparents, Swiss; maternal andparents, German. Family history. Paternal grandfather, died in his sev-

ents fifth year, apopiexy; paternal grandmother, died in note second year old age; maternal grandfather, died

health; three sister, two died of typhoid tever, one of diphtheria

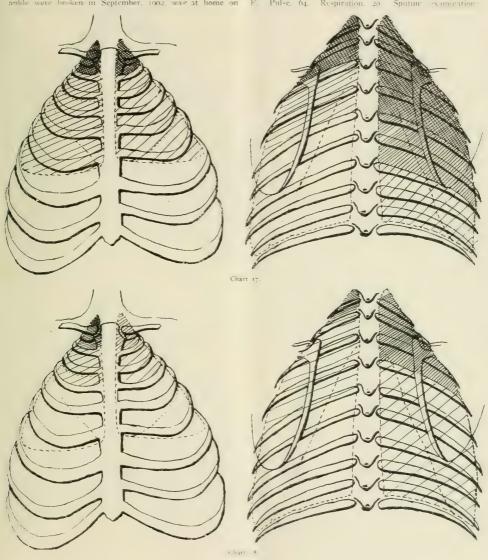
Personal history. Patient was born January 1, 1874, at Sunbury, Pa. Childhood diseases, measles, scarlet fever, malaria or typhoid fever, when about four years old, which caused a very severe hæmorrhage from nose. Entered service April 5, 1808. Had a complication of

influenza and pleurisy on left side while at the New York

Hospital in February, 1901. While in the Philippine Islands had four attacks dengue fever.

When on the Alliance, in Jamaica, in 1899, had heat exhaustion, lasted for about a week. Both bones of his left ankle were broken in September. 1902, was at home on

Present condition. Patient felt weak. Appetite variable, slept well, bowels regular. Coughed and expectorated in the morning. Slight pain in left chest at times. Height, 5 feet 8½ inches. Normal weight, 183 pounds; present weight, 176 pounds. Temperature, 97.2° to 100.2° F. Pulse. 64. Respiration. 20 Sputure examination.



CASE VIII

leave for six weeks. While in Cavite, the latter part of April, 1904, had another heat exhaustion stroke; was sent to Yokohama Hospital; remained there until September.

Present trouble commenced about two months ago, while at this hospital, with a morning cough and expectoration, loss of weight (about six pounds), and recently a feeling of weakness. Had diarrhea about four days ago, and had been feeling very bad since.

Fairly numerous tubercle bacilli. Chart II shows the condition of the lungs at this time

Patient was placed on mercurial treatment April 9, 1008
Third physical examination July 17, 1908. Patient felt very well; appetite good; slept well; bowels, transitory diarrhea. Coughed and expectorated about half an hour just after arising. Temperature, 96.8° F. at 3:30 p. m. Pulse, 84. Respiration, 14. Weight, 165. Chest circum-

ference, 37½ inches; inflated, 30½ inches; deflated, 34 inches; expansion, 4½ inches. Chart 12 shows the slight increase in the extent of the pulmonary lesions and the condition of the lungs at this time. Sputum examination: A few tubercle bacilli present.

died in eighty-first year, old age; maternal grandmother, died in about fortieth year, cause unknown; father, living, in good health, in sixty-ninth year; mother, living, in good health, in fifty-nisth year; two brothers, living, in good health; four sisters, living, in good health.

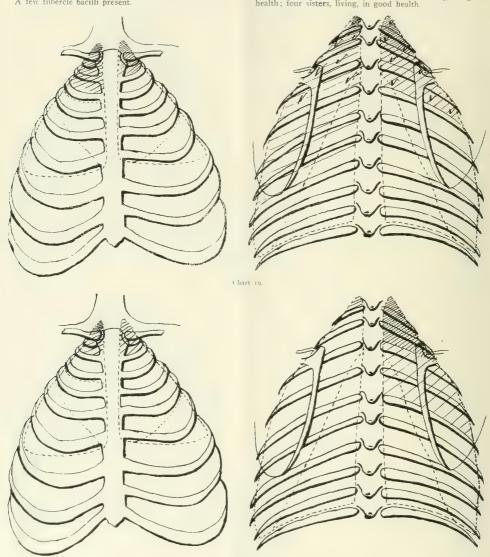


Chart 26 CASE IN

CASE VI.-W. H. B., midshipman, U. S. N., admitted

April 16, 1608

Nationality. Paternal grandparents, English; maternal grandparents, English.

Family history. Paternal grandfather, died in seventy-ninth year, old age; paternal grandmother, died in about forts fourth sear, can emiknown; maternal grandfather.

Personal history. Born June 16, 1885, at Nattoway County, Virginia. Childhood diseases, mumps and measles; had an infected ulcer on leg in summer of 1901, was in hos-

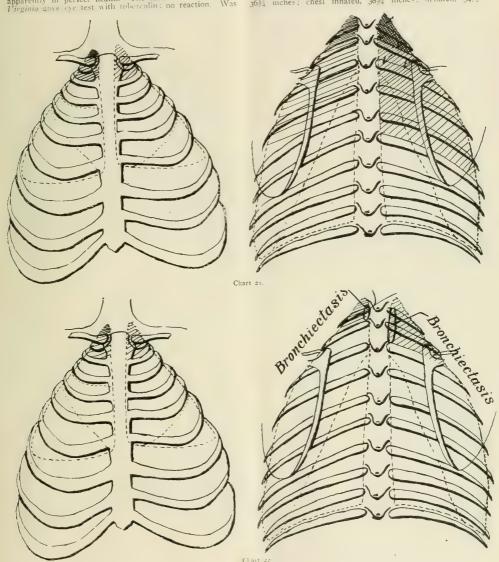
had an infected after one of the pital for five weeks.

Appointed to Naval Academy in September, 1901.

Had ringworm in fall of 1901; no other trouble of any kind until the present time.

Had never had a cough, never lost weight, had only had a very few light colds. In November, 1907, was examined for promotion; some indication of tuberculosis in right apex. Went around South America with the fleet and was apparently in perfect health. The medical officer of the Uriginia gave eye test with tuberculin; no reaction. Was

Present condition. Felt perfectly well. Appetite good; slept well; bowels regular. Did not cough or expectorate. Height, 6 feet 34 inch. Normal weight, 172 pounds. Present weight, 172½ pounds. Temperature, 97.2° F. at 7:30 a. m. Pulse, 128. Respiration, 18. Chest circumference, 3634 inches; chest inflated, 3834 inches; deflated, 34½



ordered here March 25, 1908, for examination and treatment, on the recommendation of the Board of Medical Survey. Did not appear before the Board of Medical Survey. Arrived at this hospital April 19, 1908. Habits: A moderate cigar smoker, a moderate consumer of alcoholic stimulants.

inches; expansion, 4½ inches. Chart 13 shows the condition of the lungs at this time.

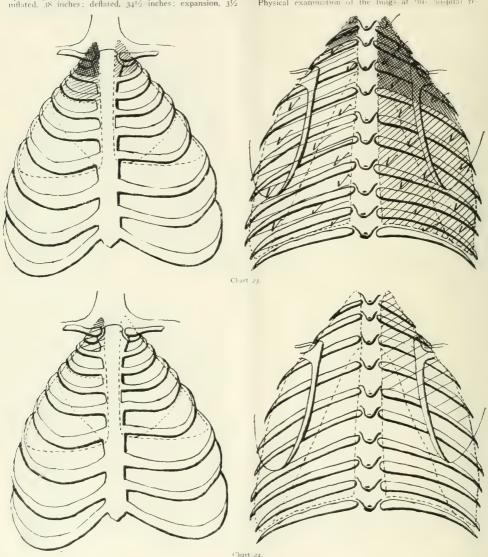
Sputum examination: None obtainable.
Calmette's ophthalmoreaction was positive.
May 2, 1008, placed on mercurial treatment
Second physical examination June 20, 1008 Felt well;

appetite fine; slept well; bowels regular. Did not cough or expectorate.

Temperature, 97.5° to 98.5° F. Pulse, 108. Respiration, 14. Weight, 186. Chest circumference, 36% inches; chest mflated, 38 inches; deflated, 34½ inches; expansion, 3½

the thigh above the knee joint had been made, an opening about two inches long had been chiseled in the femur, opening up the medulary canal, which had been curetted, and the wound was discharging considerable pus.

Physical examination of the lungs at this hospital re-



CASE XI

mehes. Chart 14 shows the condition of the hungs at this time, and the marked improvement in pulmonary lesions. July 18th, weight, 198½ pounds.

CASE VII.—W. E. F., midshipman, second class, U. S. N., admitted May 2, 1968.

This patient was received from U. S. Naval Hospital, Annapolis, Md., with the diagnosis of tuberculosis of the left knee and femur. An incision on the inner aspect of

vealed a considerable area of pulmonary involvement of both lungs.

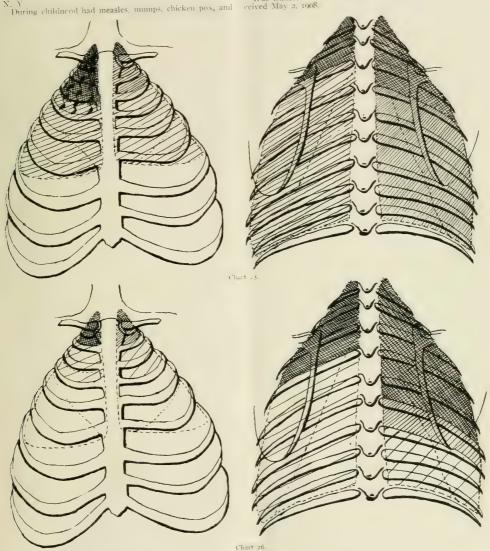
Sputum examination was positive for tubercle bacilli.
Nationality. Paternal grandparents, Irish; maternal grandparents, Irish.

Family history. Paternal grandfather, dead, age and cause unknown; paternal grandfather, dead, age and cause unknown; maternal grandfather, died in seventy-eighth

year cause anknown; maternal grandmother, died in seventieth year, cause unknown; father, living, in good health forty-fifth year; mother, died in twenty-eighth year, from pneumonia; three half brothers, living, in good health: one half sister, living, in good health.

Personal history. Born June 17, 1886, at New York, N. Y

continued to grow worse; December 10th he was transferred to the Annapolis Hospital. About January 25, 1908, his case was diagnosticated as tuberculosis of bone. He was operated upon February 2d, since which time he had been slowly improving. Had never had any symptoms of subrougher tubercules, governibles of surprise. pulmonary tuberculesis, except loss of weight
Was transferred to this hospital by Medical Survey; re-



CASE XII.

scarlet fever. No other sickness, except biliousness, previous to his appointment to the Naval Academy. Entered Naval Academy June 28, 1904; just after entering the academy was on sick list for a few days with a sprained ankle. No other sickness except present trouble. Present trouble commenced December 4, 1907; was admitted to sick list with rheumatism of left knee, which

Habits: Smokes a pipe or cigars very moderately, drinks beer moderately

Present condition. Felt very well; appetite good; slept well; bowels rather constipated. Did not cough or expectorate.

Height, 5 feet 11 inches. Normal weight, 160 pounds; present weight, 1341/2 with clothing and plaster cast from

groin to toes. remperature, 90 to 100 F. Respiration, 14. Pulse, 100; low tension.

Chest circumerent, 3418 inches, chest inflated, 3614 inches; deflated, 31½ inches; expansion, 434 inches. Chart 15 shows the condition of the lungs at this time.

Sputum examination: Moderate number of tubercle

May 8th, mercurial treatment given and Biers hyperæmia method used in conjunction with dressings of the diseased femur and knee.

Second physical examination July 3, 1908. Felt well; appetite good; slept well; bowels regular. No cough or expectoration. Left knee joint and femur about the same.

Chart 16 shows the condition of the lungs at this time and the moderately marked improvement in the pulmonary Sputum examination was negative for tubercle Dr. Emil Beck's bismuth paste injected into the lesions. hacilli tuberculous sinus leading to the femur.

July 18th. Discharge from this sinus was markedly less

and very thin.

CASE VIII.-- J. F. McC., chief carpenter, U. S. N., admitted May 8, 1908

Paternal grandparents, Irish; maternal

ted May o, 1900.

Nationality. Paternal granuparame,
grandparents, Irish.

Family history. Paternal grandfather, died in eightycontenual grandmother, died in history. fifth year from old age; paternal grandmother, died in fifty-fifth year, from asthma; maternal grandfather, dead, age and cause unknown; maternal grandmother, dead, age and cause unknown; maternal grandmother, dead, age and cause unknown; father, living, in good health, in seventy-fifth year; mother, died in fifty-first year, from pneumonia; two brothers, living, in good health; three brothers, dead, died in infancy; three sisters, living, in good health; four sisters, dead, three died in infancy, one

died from heart disease. Personal history. Patient was born March 7, 1874, at Brooklyn, N. Y. Did not remember having any childhood diseases except chicken pox. Had pneumonia in his eighteenth year; had bronchial trouble in about his four-thicken pox.

teenth year. No other sickness before entering service. Entered service May 1, 1901, from Brooklyn, N. Y. Had malarial fever in Panama in 1903. No other sickness ex-

cept present trouble.

Present trouble commenced about October, 1906, while on duty at Newport News, Va., with weak stomach and general debility, and loss of weight. Had pains in chest, which he thought due to indigestion. Did not notice any cough until about middle of January, 1908, while on board the U.S. S. Minnesota, on cruise around South America. Was admitted to the sick list and transferred to the Relief, April I, 1908, and to Mare Island Hospital April 8th. His condition remained about the same except at the Mare Island Hospital, where his appetite improved and he gained about four pounds in weight. Was transferred to this hospital for tuberculosis. Received May 8th. Tubercle bacilli have been found in sputum. Habits: Does not smoke or drink.

Present condition. Patient felt fairly well; appetite fairly good, but could not eat very much on account of indigestion, which caused sour stomach and vomiting. Had palpitation of the heart after eating. Slept fairly well. Bowels were or the heart atter eating. Siept fairly well. Bowels were constipated. Did not cough very much, expectorated considerably from throat. Had pains in chest and between shoulders. Was troubled with sore throat and hoarseness. Height, 5 feet 7½ inches. Normfal weight, 146 pounds; present weight, 130½. Temperature, 98.2° F. at 10:20 a. m. Public 8.8. Perspectant.

Pulse, 84. Respiration, 16.

Chest circumference, 34 inches; chest inflated, 36%; de-

flated 32; expansion, 438 Chart 17 shows the condition of the lungs at this time

Sputum examination was positive for tubercle bacilli.

Throat examination as follows: Pharynx, the posterior wall of the pharynx was somewhat reddened and inflamed, with very small tubercles appearing at the lower part of pharynx. Faucial tonsil, some enlargement of tonsils, no

inflammation. Pharyngeal tonsils, only slight enlargement. Epiglettis, several small, white ulcers appeared upon the rim of the glottis. Vocal cords, vocal cords were involved, causing hoarseness. Larynx, some inflammation of larynx. Examination of throat June 19, 1908, as follows:

Examination of throat June 19, 1908, as follows; wall of the pharynx. A few small nonulcerative tubercles in posterior wall of the pharynx. Faucial tonsils slight enlargement. Pharyngeal tonsils, some slight enlargement. Lingual tonsils, normal. Epiglottis, normal. Vocal cords, some infiltration. Large average and the control of the c

tion. Larvnx, normal.

shows the marked improvement in the pulmonary lesions, and the condition of the lungs at this time. Sputum ex amination was negative for tubercle bacilli. Examination of the throat, no ulceration present, and the infiltration noted on June 19th had almost entirely disappeared.

July 18th, weight, 142 pounds. Case IX.—A. L. P., civil engineer, U. S. N., admitted May 9, 1908.

Received from the U. S. Naval Hospital, Washington, D. C., with diagnosis of tuberculosis of right tibia. Examinaton of this patient revealed a moderately extensive involvement of both lungs. The tuberculous lesion of the tibia was healed. Ophthalmoreaction positive.

Nationality. Paternal grandparents, English; maternal grandparents, Scotch.

Family history. Paternal grandfather, died in eightieth year, cause unknown; paternal grondmother, died in eightyfifth year, cause urknown; maternal grandfather, died in orth year, cause unknown; maternal grandrather, died in eightieth year, cause unknown; maternal grandrather, died in eighty-sixth year, cause unknown; father, died in seventy-second year, cause unknown; mother, living, in good health, seventy-sixth year; three brothers, living, in good health; one brother, dead, age and cause unknown; three sisters and one half sister, living, in good health; one half sister, dead, from cancer.

Personal history. Patient was born September 20, 1875.

at Derry, N. H.

During childhood had measles and mumps, scarlet fever and whooping cough. During twelfth year of age had had abscess of bone on right shin. No other sickness previous to entering the service.

Entered the service April 4, 1903, from New Hampshire.

No sickness previous to present trouble.

Present trouble commenced February 15, 1908, while on duty in Washington D. C., with ache in right leg. No symptoms of pulmonary tuberculosis. Was sent to the Medical School Hospital for treatment about April 20th. Improved very much while in the hospital, gained about twenty pounds. Received at this hospital May 7, 1908. Habits: Smoked pipe, cigars, and cigarettes. Drank

moderately.

Present condition Patient felt well except for cold; appetite was good; slept well, bowels regular. Did not

cough or expectorate.

Height, 5 feet 11¾ inches. Normal weight, stripped, 165 pounds; present weight, 166½. Temperature, 99.6° F. at Pulse, 92. Respiration, 24. Chest circumference, io a. m. 3734 inches; chest deflated, 36 inches; inflated, 39 inches; expansion, 3 inches.

Chart 10 shows the condition of the lungs at this time. Patient was placed on mercury treatment May 18, 1908. Second physical examination July 17, 1908. Chart 20 shows the improvement in the pulmonary lesions and the

July 18. 1908, weight, 167 pounds.

CASE X.—H. E. R., midshipman, fourth class, U. S. N., admitted May 16, 1908.

Grandparents, German.

Family history. Paternal grandfather, living in good health, in eighty-third year; paternal grandmother, died in eighty-seventh year, cause unknown; maternal grandfather, dead, age and cause unknown; maternal grandmother, living, in good health, in eightieth year; father, living, in good health, in forty-eight year; mother, living, in good health,

heath, in forty-eight year; mother, fiving, in good heath, in thirty-ninth year; no brothers or sisters.

Personal history. Patient was born July 6, 1888, at In dianapolis, Ind. During childhood had measles, chickenpox, and scarlet fever. Had smallpox in fourteenth year. Had pneumonia when he was about five or six years old. Had an attack of pleurisy soon after having pneumonia, and had another attack about two years ago. No other sickness before entering the academy

Entered the Naval Academy July 6, 1907. No sickness

after entering the academy except present trouble.

Present trouble commenced about the 12th of April, 1908. He went to sick quarters with a sprained knee. That night he took a bath, from which he caught cold, and had a temperature of 104° F.; was given ice bath and temperature reduced. Pneumonia was suspected, but did not develop, but he was attacked with a severe cough and had very mild night sweats for about a week. Sputum was examined and found positive. Was sent to the Annapolis Hospital and surveyed. While en route to this hospital he stopped at his home of Indhonopolis, Ind. While there he was examined by a specialist in tuberculous diseases, who pronounced his trouble pulmonary tuberculosis. Received at this hospital May 16, 1908. Had had catarrhal trouble since early childhood.

Habits: Smoked cigars very moderately. Did not drink

Present condition. Patient felt perfectly well; appetite fine; slept well; bowels regular. Had never had pains in chest. Coughed principally in the early morning and at night upon retiring. Expectorated very little.

Height, 5 feet 5 inches. Normal weight, 126 pounds; present weight, 12234. Temperature, 98° F. at 10 a. m Pulse, 104. Respiration, 20.

Chest circumference, 34% inches; chest inflated, 35½ inches; deflated, 32½ inches; expansion, 3 inches. Chart 21 shows the condition of the lungs at this time. Sputum examination showed very numerous tubercule bacilli. Placed on mercurial treatment May 18, 1908.

Second physical examination July 16, 1908. shows the marked improvement in the pulmonary lesions, and the condition of the lungs at this time. Sputum examination: Tubercle bacilli very numerous. Weight, 132

pounds. CASE XI .- R. R., ensign, U. S. Navy, admitted May

20, 1908.

Paternal grandparents, English descent; maternal grand-

parents, English descent

Family history. Paternal grandather, died as the result of wounds received in civil war; paternal grandmother, died in eighty-fourth year, cause unknown; maternal grandded in eighty-torin year, cause unknown; maternal grand-father, dead, age and cause unknown; maternal grand-mother, died in eighty-third year, cause unknown; father, living, in good health, in sixty-fifth year; mother, died from childbirth, in thirty-second year; three brothers, living, in good health; one brother died from acident; one sister died in infancy.

Personal history. Patient was born September 16, 1884, at Greenwich, Conn. No childhood diseases. Had measles in his fifteenth year. No other sickness before entering

the service

Entered the service September 29, 1900, from New Jersey. Was on the sick list twice while at the academy with ton-sillitis and once since graduation. No other sickness pre-vious to present trouble.

Present trouble commenced on the Galveston while at Vladivostock, Siberia, with severe cold lasting about two months. This was in December, 1907. In February he noticed sputum slightly tinged with blood, and examination of sputum for tubercle bacilli was positive. There was no loss of weight. Was surveyed March I, 1908, and sent to Mare Island Hospital. Was resurveyed and transferred to this hospital. Received May 19, 1908. While at Mare Island Hospital gained in weight, and general condition improved. Repeated examinations for tubercle bacilli were occasionally positive. Habits: Occasionally smoked a cigarette, drank moderately.

Present condition. Patient felt perfectly well; appetite very good; slept well; bowels regular. Had no pains in Coughed and expectorated very little.

Height, 5 feet 9 inches. Normal weight, 135 pounds: present weight, 134½. Temperature, 98° F. at 3 p. m. Pulse, 92. Respiration, 16.

Chest circumference, 331/2 inches; chest inflated, 353/4; detlated. 31½: expansion, 4¼.

Sputum examination showed a few tubercle bacilli present.

Chart 23 shows the condition of the lungs at this time. Placed upon mercurial treatment May 20, 1908.

Second physical examination July 17, 1908. Chart 24 shows the marked improvement in the pulmonary lesions, and the condition of the lungs at this time. Sputum examination: A few tubercle bacilli present.

Weight, 135½ pounds.

Case XII.—R. H. McL., formerly a lieutenant in the
U. S. Navy, admitted June 5, 1908.

U. S. Navy, admitted June 5, 1908.

Nationality. Paternal grandparents, Scotch; maternal grandparents. Irish.

Family history. Paternal and maternal grandparents, negative: father, killed in accident in fifty-ninth year; mother, died in thirty-seventh year, from pneumonia; one brother, living, in good health; one brother, dead, from consumption; one sister, living, in good health.

Personal history. Patient was born November 6, 1850, at Plainfield. N. J. Did not remember any childhood diseases, except scarlet fever. No other sickness before enter-

ing the service

Entered the Naval Academy June 22, 1868, from New ersey. Had typhoid pneumonia just after entering the Had pneumonia while on the European station in 1877. No other sickness while in the service. Resigned from the Navy in September, 1888. No sickness since leaving the service except present trouble. At the time of

resignation was lieutenant, senior grade.

Present trouble commenced in 1901 while at Washington, D. C., with cough and loss of weight (fifteen pounds). Went to Adirondacks, gained twenty pounds, and improved generally. About two months ago he visited a documentation. tor for local skin trouble; while there he mentioned about having a morning cough. The doctor examined a specimen of his sputum and found tubercle bacilli. Received at this

hospital June 5, 1908.

Habits: Did not smoke. Drank very moderately. Present condition. Patient felt well; appetite splendid; slept well; bowels regular. Coughed very little, principally

in the morning upon arising. Expectorated very little. Height, 5 feet 5½ inches. Normal weight, 135 pounds; present weight, 124 pounds. Temperature, 98.4° F. at 10 a. m. Pulse, 120. Respiration, 16.

Chest circumference, 363/4 inches; chest inflated, 381/8; deflated, 351/2; expansion, 2

Chart 25 shows the condition of the lungs at this time Sputum examination: Moderately numerous tubercle

bacilli present. Placed upon mercurial treatment June 8, 1908.

Second physical examination July 18, 1908. Chart 26 shows the improvement in the pulmonary lesions and the condition of the lungs at this time. Sputum examination: A few tubercle bacilli present. Weight, 141 pounds.

Of these patients Cases I and II have refused the mercury treatment, and are failing. The other ten are all receiving this treatment. Nine of them are improving, and one failing (Case V), and in this instance I believe the cause to be too much exercise.

All of our earlier patients reported as improved, continue to improve, and we have not had a single case show retrogression after improvement was first noted. We expect to be able to report several pa-

tients cured within a short time.

Whether these patients will require the continued administration of mercury over a long period of time is a question that time alone can decide, but from the statistics of cured cases during the past, it is only reasonable to suppose that they will remain well without further mercurial treatment. We began using mercury on January 17, 1908. During the three months ending March 31, 1908, our daily average of patients was sixty-two, and the deaths numbered seven, or a death rate of 11.29 per cent.

During the following three months ending June 30th, our daily average of patients was eighty-four, and the deaths numbered four, or a death rate of 4.76 per cent., a decrease in the death rate over the preceding quarter of nearly one half, or a reduction

of about forty-two per cent.

Of the four patients who died during this last quarter, one was in the hospital thirty-seven days. and had secondary ulcerative tuberculous lesions of the entire upper respiratory tract, and of the entire intestinal canal, with large excavations in both lungs, the immediate cause of death being intestinal perforation.

The second was in the hospital forty-five days, entire lung area involved, with large cavities in both lungs, secondary tuberculous ulcerations throughout upper air passages and entire intestinal tract. Tuberculosis of both kidneys and spleen. The heart showed extensive disease of the tricuspid, pulmonary and mitral valves. Immediate cause of death, intestinal perforation.

The third, a patient, of fifty-four years, was in the

hospital forty-one days, both lungs involved extensively, large cavities in the left, large aneurysm of the arch of the aorta, small spleen, weighing 45 grammes. This patient was tapped for abdominal ascites, and died on the table,

The fourth died after a lingering illness, with advanced pulmonary involvement, and serious secondary envolvement of various organs

Since the publication of my second report we have modified the procedure for the administration of mercury as follows: We now give an injection every other day until thirty injections have been given, then follow by a two weeks' course of potassium iodide, giving grammes 0.64 thrice a day, then one week's rest from medication, after which we resume the injections and repeat. This is giving us the most satisfactory results.

A table of weights showing gains and losses is herewith appended.

In my last report, May 25, 1908, Case II was included in the 30 per cent. failed, while Case IV appeared in the seventy per cent. improved.

embryo is being formed from it and upon it, as we shall see later. This substance is asexual; its existence is only temporary, and after it has fulfilled its functions it is finally destroyed by the embryo. This intermediary substance Dr. Beard called by various names: The trophoblast, phorozoon bearing animal, asexual generation, the larva. In a human being and in mammalia this substance is represented by the chorion. The first step then in the formation of an animal organism is the union between the male and the female elements. The newly formed cell divides and subdivides again and again, and the trophoblast is formed.

How then is the embryo formed? Upon the trophoblast develops an apical cell or the primitive germ cell. This apical germ cell divides a certain number of times, which is a fixed one for each species. These are the primary germ cells which are destined for future generations. It is not all of them, however, that unfold to form new embryos. As a rule only one does it. Should more than one unfold into an embryo, we have identical twins, trip-

lets, etc.

TABLE OF WEIGHTS, PATIENTS NUDE

| | | | - 0- 1111011110, 3 | | HODE. | |
|---|----------------------------|----------------------------------|-------------------------------|------------------|------------------|--------------------------------------|
| | | , | July 28, 1 | 908. | | |
| Case No. | Normal weight Pounds | Weight on admission Pounds | Present weight. Pounds. | Gain. Pounds. | Loss. Pounds. | Length or time on mercury treatment. |
| 1 | 154 | 101, | 130 | | 1/2 | Not administered. |
| 21 | 150 | 4-2 | 150 | 8 | 1111 | Six months, ten days, |
| 3 | 145 | 3 - | 119 | | 1.2 | Not administered. |
| 4 | 150 | 3.5 | 154 | -21/2 | | Four months, ten days. |
| | 183 | - 70 | 170 | | 6 | Three months, ten days. |
| | | 721 | 1981/2 | 26 | | Two months, twenty-six days |
| the first term of the second second | 160 | 11912 | Not weigh - 1 | ? | 3 | Two months, twenty-six days |
| | | -30% | 148 | 171/2 | | Two months, twenty days. |
| 9 | 165 | :0612 | 167 | 1/2 | | Two months, nineteen days, |
| 16 | 126 | . 22 44 | 134 | 111/4 | | Two months, twelve days. |
| II | | -34 ¹ 4 | 135!: | 1 1/4 | | Two months. |
| *2 **** ******************************* | | 124 | 1431/2 | 191/2 | | One month, twenty-three days. |
| Case II, on June 26, 1 | 908, reached | his lowest | eright, 134 pour. | On July . | .7. 1908, his w | eight was 150 pounds, or a gain of |

DR. BEARD'S THEORY IN THE CRUCIBLE OF

An Experimental Study of the Trypsin Treatment in Cancer.

By J. W. WEINSTEIN M D. New York,

United Veststant, Gastroenterological Division of the Vande Clinic; Attending Physician, Sydenham Hospital Dispensary

In presenting his unique theory on cancer to the medical profession, Dr. John Beard takes at once issue not only with the tenets of the medical science, but also with those of the embryological science as well. And he takes issue with the prevailing doctrines of the evolution of animal life from the very start. The prevailing idea of the evolution of a life cycle is that there is a union between the sperm and the ovum. After this union takes place cell division sets in, and from this an embryo is developed. This wonderfully simple mechanism is erroneous, according to the teachings and investigations of Dr. John Beard. He admits that there is a union between the sperm and ovum, and that as a result of this union mitosis sets in, but the division of these cells does not give rise to an embryo, but to something totally different, a substance which serves as an intermediary stage between the embryo and the zygote. This substance differs widely from the embryo. It is the progenitor of the sulmo as the

What is the fate of the rest of the primary cells? They travel along the germinal path and enter into the newly formed embryo and thus find shelter within the substance of their twin sister cell. They travel along and settle in various situations, but, strange enough, Dr. Beard has seen them in his microscopical slides to settle just in those localities. where cancer is so prevalent, as in the pyloric region of the stomach, about the rectum, within the lips, etc. The destinies of these vagrant germ cells vary. A good many of them degenerate and disappear. Others, however, persist; and they persist, according to the researches of Dr. Beard, with very base purposes, namely to destroy the life of their host, their own sister cell that has so kindly harbored them; as these are the future cancers.

Every primary germ cell in Dr. Beard's theory is endowed with unconscious memories to proliferate and go through a full life cycle. Some of the vagrant cells, after having entered the embryonic body, as we have seen before, degenerate, while others persist, and when occasion presents itself. they commence to repeat the life cycle. They have lost, however, during their migrations some of the unconscious memories and have retained others; moreover, they have assumed certain characteristics from the somatic cells, where they have lodged. And what is the result? A life eyele that is incomplete. An asexual generation alone is produced or a trophoblast. A cancer, therefore, is an irregular, irresponsible trophoblast; a life cycle with the asexual generation only, the embryo or the sexual part of

the cycle having been omitted.

We have seen that, according to the views of Dr. Beard, in every life cycle there are two generations, an asexual one, the trophoblast, and a sexual one. These two separate generations are seen both in plants and in animals. In plants the asexual generation being the more predominating factor of the two, while in animals it is just the reverse, the sexual generation being the more predominating. In the animal world the higher we ascend the scale of development, the smaller is the asexual generation, and in man it is reduced to the chorion.

The fate of the trophoblast is interesting. It keeps on growing in size at first, and then, after the embryo has developed from it and upon it, degenerative changes set in within the trophoblast or the asexual generation, while the embryo keeps on in-

creasing in size.

What are the factors that determine the decline of the trophoblast? This question has been puzzling Dr. Beard for a good while, until the discovery of the "critical period" came about, which discovery Dr. Beard considers as one of the most important both in embryological and medical sciences. It is through the discovery of the critical period that he found the key to his cancer cure. By the critical period Dr. Beard understands the era in the development of the embryo when the embryo first asserts its individuality, the time when the embryo starts first its own independent existence. By this time the embryo starts to feed itself by means of the allantoic placenta, and the pancreas commences to functionate. This period corresponds in the case of a human embryo to the seventh week of uterine gestation. Up to this time the digestion of the trophoblast and embryo is an intracellular, peptic one; after the critical period the pancreas starts to functionate, an alkaline digestion sets in, and this marks the decline of the trophoblast. The trophoblast ceases its further development and degenerative, atrophic changes set in, and thus its career is to an end. Should the embryo die before the critical period is reached, i. e., before the activity of the pancreas is established, the trophoblast, free of inhibition, will continue to grow indefinitely, thus mimicking cancer and producing malignant disease of the chorion. These latter facts form to the mind of Dr. Beard the chain of circumstantial evidence that the trophoblast is being destroyed by the ferments of the pancreas complete. And since cancer is an imitation of a trophoblast, hence it may also be destroyed by the pancreatic ferments. tumors, being composed of somatic tissue, are not affected by the pancreatic juice. As regards the mode of action of the pancreatic juice upon cancer. Dr. Beard believes that the trypsin of the pancreatic juice destroys the cancer albumin and the poisons generated by the cancer and discovered by Petry in 1899, and named by Beard malignin.

Having completed all these investigations, there was now only one thing left for Dr. Beard to do, namely, to apply the theory in practice. Not being a medical man, he tried his first experiments of

trypsin injections on the Jensen mouse tumor, and, according to his statements, the most wonderful results were derived. After several injections he found the cells of the Jensen mouse tumors degenerating, fading, and melting away. His triumph was complete. The grave cancer problem was solved.

Both the medical and embryological fraternities were loath to accept his views. Moreover, in the Middlesex Hospital a series of experiments with trypsin was made with negative results, and the new cancer cure was getting into disrepute. The leading medical journals had refused to publish Dr. Beard's articles and severely criticised them. Dr. Beard was in despair. He soon found, however, a champion of his theory in the personality of a former pupil of his, C. W. Saleeby, M. D., a writer of medical topics for laymen. In a series of publications in different periodicals, both in this country and in England, and finally in a separate publication. Dr. Saleeby has disseminated embryological and medical information among the public with the assurance that a positive cure for cancer has at last been found, a cure differing altogether from the former sure cures, and that the medical men would not give this wonderful discovery a chance. The public took the matter in their hands and they have compelled the medical profession to take the new cure more seriously. Stimulated, or rather forced, by these requests, medical men started to apply this new method of treating cancer in practice. Some cures were reported on one side; a good many failures on the other.

In order to test the efficacy of the treatment, the writer has experimented with trypsin in ten cases. All of these were carcinomata of the digestive organs. They were all clear, straightforward cases of cancer, without the shadow of a doubt as to the diagnosis. I append here a list of the cases without entering into the details of their histories:

M. B., male, sixty-two years old, carcinoma pylori.

J. K., male, fifty-eight years old, carcinoma cardire.

M. K., female, thirty-eight years old, palpable tumor along the greater curvature of the stomach.

E. P., male, sixty years old, carcinoma cardiæ.

H. S., male, sixty-five years old, carcinoma ventriculi et hepatis.

L. F., female, fifty-one years old, cancer of the lesser curvature.

N. T., male, fifty years old, carcinoma of the cardia.

A. K., female, fifty-eight years old, carcinoma ventriculi.

B. G., male, fifty-two years old, carcinoma of the pylorus.

L. F., male, fifty years old, carcinoma of the cardia.

All these cases were treated by subcutaneous injections of trypsin and anylopsin, according to the rules laid down by Dr. Beard and Dr. Saleeby. The idea of using amylopsin is because the trypsin, in acting on the cancer albumins, does not reduce them to harmless compounds; they are poisonous substances and the amylopsin digests them.

An antitoxine svringe is best used for the purpose. All aseptic precautions should be employed.

Preparation. The trypsin and amylopsin used by the writer were those prepared by Fairchild Bros. & Foster. This preparation has got the endorsement of Dr. Beard himself. It is a glycerin extract of the pancreas gland with some normal salt solution. It is dispensed in sealed ampoules, each containing about twenty minims of the extract.

Dosage and frequency of administration. I have injected daily and every other day, using twenty and forty minims per dose. Others have injected as high as 75 minims per day. I found, however, 40 minims not to absorb very readily. I used the amylopsin every third or fourth day. The contents of the ampoule is to be diluted with 2 to 3 volumes of sterile water. Messrs, Fairchild Bros, & Foster advise to start with an initial dosage of 5 to 10 minims, lest untoward symptoms should develop. In my last cases I have omitted this precaution and used 20 minims as an initial dose without meeting any ill effects. The injection is not very painful. There is no need for using cocaine.

Site of injection. It should be as near the tumor as possible, but not in the tumor tissue itself. Since the tumors that I dealt with were located in the epigastrium, I have found, however, this site a very unfavorable locality for the injection. For some reason or another the absorption in that part of the human anatomy proved very poor in my cases, and in one case (Case V) a big abscess formed. In several cases big lumps persisted for several weeks. I have found the buttocks to be the best site for injection. The injection should be made into the subcutaneous tissue, not in the muscle.

Untoward effects. Some aching of bones and backache. There have been described by others malaise, chills, etc., which I have not noticed in my patients.

Results. These were entirely negative. Six of these unfortunates had gone to whence nobody comes back; two are well under way in the same direction, and the other two were lost track of. I have not noticed any improvement in any of them. There were some periods of improvement and at times a temporary lull of symptoms, but these were no more than the natural, spontaneous ups and downs of any illness, irrespective of any method of treatment. The immediate cessation of the severe pain of cancer, which Dr. Saleeby so authoritatively speaks of, was not seen by me in a single instance. There is only one argument which Dr. Saleeby adduces in favor of the trypsin treatment which I may concede, and that is the powerful moral effect it has got on the mind of the patient. There is no doubt about it that when, to a man with a death sentence hanging over his head, hope to save his life is extended, the moral effect is very soothing and beneficent. But this is only temporary. As time goes on and the scales cruelly register the same continuous loss of flesh, the appetite gets poorer, the strength is going away, and the patient sees himself constantly going down hill with no gain whatsover, except some sores on his buttocks, he loses his courage and falls into the same hopeless state again.

Moreover, this fact alone should not justify us in using this plan of treatment. There is no need to import placebos from Edinburgh. We have got plenty of them on this continent.

Conclusion. I wish, therefore, in conclusion, to say that the trypsin cure has proved in my hands, after a series of careful trials and painstaking labors, a total failure, and, in my opinion, this new cure should be relegated to the vast legion of other sure cures for cancer that have preceded it, and that the cancer problem so far remains unsolved.

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61 EAST ONE HUNDRED AND SEVENTH STREET.

PROPERLY CONSTRUCTED FILTERING BEDS.

BY PAUL F. BUSSMAN, M. D., Buffalo, N. Y.

Filtering beds are constructed by placing conducting pipe, having broken joints, on the bottom of a reservoir of suitable size and covering the same with successive layers six inches or more in thickness; first of broken stone of large size, two inches, then stone of smaller size, one inch; upon this gravel, followed by coarse sand. On top of these several layers a bed of fine sharp sand is placed, having a depth of three, four, or five feet. The water to be filtered is placed on top of this bed of fine sharp sand and allowed to pass through to the underlying conducting pipe, to be carried to a reservoir or to the wells of a pumping station for final distribution. This is the universal construction of so called filtering beds; in reality, dirt catching beds. All the foreign matter held in suspension by the water is held, and the water that passes is secondary. Our filtering beds catch all the dirt which is not wanted and a limited amount of water, instead of obtaining all the pure water and none of the foreign matter in suspension. The man who constructed the first filtering bed made a mistake, and we followed his example ever since, spending millions upon millions of dollars catching dirt which we did not want. Instead of placing the filter in the water he placed the water in the filter, and we followed suit.

Now, if, instead of placing conducting pipe having broken joints on the bottom of a reservoir, we place them on the bottom of our river, lake, or whatever may be the source of our water supply, and cover the same in the same manner as described, all the pure water will pass to an unlimited amount and the foreign matter held in suspension will not be deposited on the filter, provided the flow through the filtering bed is not greater than the flow over the same. Foreign matter held in suspension in a liquid will follow the lines of least resistance. If for every million gallons of water used in a day a filtering bed of one acre in size was used, the flow through the filter would be at the rate of one yard a day. A body of water flowing at the rate of one mile a day would be a very slow natural current, still the flow would be one thousand seven hundred times faster over the filtering bed than through the same, and where this is the case there will be no deposit of foreign matter to clog the filter. By constructing a filtering bed one acre in extent for every million gallons of water required per day will enable all our cities located on our lakes and rivers to obtain an unlimited amount of pure water at a price no greater than that of merely pumping the same without considering the cost of installation.

Trusting that I am not mistaken in my proposition, I hope that it will prove a means of preventing the seed of many a disease to find a fertile ground in the economy of my fellow man.

495 JEFFERSON STREET.

OBSERVATIONS ON OPEN AIR TREATMENT.

By John Carling, M. D., New York.

Much has been said and written on the value of pure air in the treatment of tuberculosis, and while all are in accord as to the advantages derived from life in the open air, there is still a difference of opinion as to the best place to send certain patients. It is generally agreed that those suffering with pulmonary tuberculosis do better in a great altitude, while many contend that the sea shore is to be preferred when the bones and joints are affected. In England and on the Continent practically all hospitals for bone tuberculosis are located on the sea coast, but in this country opinion is more evenly divided, and many of those who formerly favored sea air are now opposed to it.

For tuberculous disease of the bones and joints an inland location has many advantages over the sea coast. We continue to send our pulmonary patients to high inland resorts, because we have learned that these patients breathe easier, feel more buoyant, and put on weight more quickly than when sent to the sea shore. Admitting that a maximum amount of pure air to the lungs is the main consideration in the treatment of bone tuberculosis as well as pulmonary, it follows that dry inland air, which encourages deep breathing, is to be preferred to the humid atmosphere of the sea shore.

Another important advantage is the matter of shade. Woodruff (1), of the army, has called our attention to the harmful effects of strong sunlight.

My own experience in the tropics, where the sunlight is intense, and my further observations on the effect of strong sunlight upon patients undergoing open air treatment, convince me that it is decidedly harmful. We are familiar with the feeling of discomfort and sometimes headache following prolonged exposure to the rays of the sun at the sea shore. If this is the effect on persons in robust health, how much more severe must it be in the case of debilitated children, many of whom have discharging sinuses, who are exposed to this glare daily for a period of several months.

It has been observed, moreover, in summer months, that those patients who are kept in darkened, but well ventilated, rooms during midday, and sleep out of doors at night, improve more rapidly than those who remain out continuously. The reason is obvious that much of the benefit derived by the latter patients from life in the open air is offset by their exposure to the strong sunlight. It is needless to say that moderate sunlight is not only not harmful, but desirable and necessary. When, however, it is strongly and steadily reflected from a glaring surface, its injurious effect on the patient's general and local condition soon becomes evident. Among whites this may be due in part to lack of protection from insufficient pigmentation, but I believe it is due more to the irritating action of light on the nervous system through eyestrain.

The firm nature of the soil is another reason for preferring the country to the sea shore in bone tuberculosis. The yielding nature of the sand at the sea shore, which makes locomotion difficult for children wearing apparatus, is a constant strain on the weakened and diseased joints. The sea shore is not contraindicated in all diseases of children. For rickets and cases of general malnutrition, where there is no actual disability, and sea bathing can be indulged in, a residence at the sea shore may be beneficial; but for bone and joint tuberculosis, as well as all other forms of tuberculosis, a dry inland climate is to be preferred.

Economy of administration and quality of food supply are factors which must be considered in the management of all hospitals. Sea side hospitals, because of the barren nature of the soil on which they are located, are compelled to go into the open market to purchase their articles of diet. Inland hospitals, on the other hand, are able to maintain their own farms, and not only supply a better quality of milk, eggs, vegetables, etc., but at a considerable saving in cost.

It is a well known fact that patients undergoing open air treatment do much better in winter than in summer. This may be due: I, To the diminished amount of strong sunlight; 2, to the cold air, which contains more oxygen than the warmer and more rarefied air of summer; and, 3, to the stimulating effect of the cold on the function of respiration, resulting in deeper and more frequent breathing, and consequently a greater supply of oxygen to the tissues. Not only do tuberculous patients do better in winter than in summer, but they need the treatment more. During the summer months the poor of the tenements may visit the parks and recreation piers and enjoy shorts trips to the country, but dur-

ing the winter months these privileges are denied them, and they are compelled to remain closeted in their ill ventilated rooms. Country homes and hospitals should therefore be kept open throughout the year, if possible, in order that patients may derive the benefit of continuous treatment until cured, instead of being returned to their homes in an improved condition, only to relapse during the follow-

In spite of the success met with in treating all classes of diseases with an abundance of pure air, our large city hospitals are doing practically nothing to give their patients the benefits of open air treatment. It is true that in a few instances attempts have been made to utilize the roof for such purposes, but the accommodations are inadequate and the results therefore unsatisfactory. In discussing the conditions prevailing in our city hospitals Thompson (2) says: "In the wretchedly ventilated wards the pneumonia patient, with a temperature of 105° F., sorely in need of fresh, cool air, lies in the next bed to the uræmic patient with a subnormal temperature, who needs warm air and a hot pack. The typhoid patient, with a racking headache and photophobia, lies facing a glare of sunlight, and the neurasthenic with insomnia is next to the patient with alcoholic cirrhosis and delirium In the surgical wards conditions are equally deplorable; septic and nonseptic cases are often crowded together in an atmosphere reeking with the odor of foul discharges. It may be said in extenuation that such overcrowding is unavoidable with the large number of patients and the limited amount of space. Admitting such to be the case, the remedy does not lie in erecting larger hospitals in the city, where the air at best is inferior, but in erecting them in the country. Every large city hospital should have its country branch, and for the city of New York no better location can be found than the high, unoccupied ground in the upper section of the Bronx and in Westchester County. This section, which lies between the Hudson River and Long Island Sound, is hilly, well wooded, and well drained, and covered with a network of trolley lines which make direct connections with those in the city. With a well equipped hospital car in charge of a member of the house staff, patients could be transferred from the city institution to the hospital in the country, not only without injury, but with every comfort. In this way the congestion, so evident in our city hospitals, could be avoided, and both medical and surgical cases placed under the best possible conditions for rapid recovery.

It is not at all improbable that the large hospitals of the future will be located in the country, and the present costly skyscraper buildings replaced by reception hospitals with observation and emergency wards, only. Objection to this plan may be made on the ground of inaccessibility, but it may be stated that as soon as the railway improvements now under way are completed this objection will be

largely overcome.

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126 FAST THIRTS TOURTH STRITT,

HERNIA OF TUBE AND OVARY, COMPLICATED BY STRANGULATION OF INTESTINE.*

By C. F. KIVLIN, M. D., Troy, N. Y.

Ovary and tube hernia has been very completely reported by Dr. F. T. Andrews, of Chicago, who says: "It is the only gynæcological work preserved from Antiquity." The statistical review up to the present time, as far as I have been able to ascertain, gives but one hundred and three cases of inguinal hernia of tube and ovary. This may well be called an uncommon disease, if, indeed, not a rarity.

The ætiology of the disease differs in no particular from the ætiology of any inguinal hernia. It simply needs only the elements that go to make up any inguinal hernia with the particular influence which causes the tube and ovary to become engaged in

the internal or external ring.

Pathological anatomy does not differ in any essential from the pathological anatomy within the abdomen. The only disease of any consequence which has not been met within inguinal hernia of tube and ovary is carcinoma.

The following case came under my observation:

Mrs. D., age thirty-nine, U. S., housewife. Patient had had all the diseases of childhood; since then had been always well. Menstruated first at fourteen years of age, always regular, no pain, lasting three or four days, moderate amount. She married at eighteen years of age, and had four children, alive and well; oldest, sixteen; youngest, seven; one still birth, instrumental delivery.

Manual examination showed lacerated peringent first

Manual examination showed lacerated perinæum, first degree, bilateral laceration of the cervix, uterus anteflexed. General examination. Patient was extremely thin, nervous type, lungs normal, slight transitory murmur of heart. Slight amount of albumin in urine, kidneys were normal. Patient slept fairly well until present trouble commenced. Bowels were constipated. Small round tumor, size of English walnut, was found just to the upper and outer side of labia majoria, lying on the pubic bone. I thought at first it was a hernia and carefully examined it, but came to the diagnostic conclusion that it was a cystic benign

tumor of practically no pathological significance.

Present illness. I was called January 8, 1908, at midnight. Patient complained of intense pain in the upper abdomen, extending from the left hypocondriac region, directly across to the gallbladder. She vomited, suffered from shock; the pressure over the gallbladder gave intense

Diagnosis: Gallstones passing through the duct or ul-cerating through into the duodenum.

Next day and following days, symptoms of obstruction of the bowels appeared, which I thought was due to a large gallstone.

On Saturday, January 12, 1908, patient had two large movements of the bowels, which I accounted for by the gallstone being dislodged from duodenojejunal junction, and becoming lodged at the iliocæcal, but instead it must have been that the strangulation was temporarily relieved, allowing fæcal matter to pass on and later on becoming strangulated again.

On Sunday, January 13, 1908, nurse gave a high enema with some slight result. Monday, persistent vomiting; Tuesday, vomiting continuing. I told the people she was in desperate condition and the only hope was an operation, but could not promise good results. Patient was removed to the Troy Hospital, Tuesday, January 15, 1908, and operation was performed on the same day.

to the 1roy Hospital, Iuesday, January 15, 1908, and opera-tion was performed on the same day. Operation. Incision over the tumor; skin and superficial fat was incised, mass exposed, when I found I had to deal with a strangulated hernia. I then enlarged incision, so that the work could be done as rapidly as possible. Sac, distended with yellowish, black fluid, was opened, bowel had been caught and held firmly by the external ring.

^{*}Read before the Medical Society of Troy and Vicinity, February 4. 1008.

External ring was divided and the bowel, relieved of constriction, soon regained its normal color. Omentum, which was outside external ring, was ligated out, peeled off from the sac, and left exposed on the inner side of the sac; outside the external ring was seen the tube and ovary. Ovary was sclerotic and tube was conjested, due to constriction. Tube and ovary were returned to abdomen.

Operation was completed in the usual way with chromasized catgut for deeper layers, silk worm gut for skin. Diagnosis: Right tube and ovarian direct inguinal hernia complicated by strangulation of small bowels.

I have collected the following one hundred and three cases from the literature:

INGUINAL HERNIA OF TUBE AND OVARY.

| | | | Acquired | | | | | D d |
|----------|---|--------------------------|----------|-------------|---------------------------|------------------|--|--|
| | | .\g.·· | a:nital: | Side. | Operation: | Result: | Contents of sac | Reported by: |
| I | Balin | 3 | 7 | 3 | Post morent | | Tube and ovary | Andrews |
| 2 | | 7 months | С | L | Excision | R | Tubal pregnancy Tube and ovary | Andrews1 |
| 3 | Belbin Bilhaut Birnbaum | 3 months | CA | L | Excision Not stated | R | Strangulated Tube and overy | Carstens ² |
| 4 | Black | 35 years 40 years | Ã | R | Removed | Ŕ | Tube and ovary | Meckles Andrews ¹ |
| h | Plandmand | 45 years | A | R | Returned | R | Diverticulum Tube and ovary | Andrews |
| 7 | Bloodgood | 38 / 0815 | 7 | L i. | Returned Excision | R R | Tube and ovary | Andrews ¹ Andrews ¹ |
| 8 0 | Braun | o months | C | K | Excision | R | Tube and ovary | Andrews ¹ Andrews ¹ |
| 10 | Bluedgood Bluedgood Boeckel Braun Braun Bristow Broca | 47 Vears | .1 | K | Excision Excision | R | Tube and ovary, pus sac | Andrews1 |
| 12 | Broca | 11 1000 | (| L | Returned | R | Tube and ovary | Andrews |
| 1.3 | Broca | 3 years | C. | T, | Excision | | Tube cubes of tube | Andrews1 |
| 14 | Broca | 2 years 4 years | C | I. | ? Returned | R R | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 15 | Broca | 7 morens | Ç | Ĩ, | Excision | | Tube and very | Andrews ¹ Carstens ² |
| 17 | Broca Brose Brose Bucura Bullitt | 34 year- | À | R D | Removal | R | Tube and ovary | Andrews1 |
| 10 | Bullitt | | C. | D | Excision of the Return of | | Tube and ovary in right and left inguinal canal | Andrews1 |
| 20 | D 11 1 C 1 2 | | | | | | Tube and ovary | Kivlin ⁴ |
| 21 | Bull and Coley ³ Bull and Coley ³ Bull and Coley ³ | | | | | | Tube and ovary Tube and ovary | Kivlin ⁴ |
| 23 | Bull and Coley3 | | | | | | Tube and ovary Tube and ovary | Kivlin* Kivlin* |
| 24 | Cahen | 2 morrhs | C | R | Ex. ision | R | Tube and ovary Tube and ovary | Andrews! Carstens ² |
| 27 | Carstens | 39 years | A | R | Excision Excision | R R | Tube and ovary and | |
| | | | A | L | Excision | P | evarian tumor Tube and ovary | Carstens ² Andrews ¹ |
| 28 | Cham | 52 years 3 months | C | L | Returned | R R | Tube and ovary | Andrews1 |
| 30 | Chiarelli | 35 years | A | R | Excision | R | Tube and ovary Cystic ovary | Andrews ¹ |
| 31 | Coote | 3 | ? | D | axersion left a sty | RL. | Tube and ovary Inguinal canal | Andrews' |
| 32 | Cullen | 8 years | С | Ţ. | r. version | R | Tube and ovary | Andrews1 |
| 33 | Domianos | 14 months 33 years | A | L | Excision Returned | R R | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 34 | Cullen Domianos Duplay and Wiart English | 39 years | .A | L | Excision | D D | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 36 | Fleich Gangels Genth | 8 days 8 months | 000 | L L L | Post mortem Excision | E | Tube and ovary | Andrews |
| 3.5 | Genth | 34 years | C | L | Excision | , | Tube and ovary Extrauterine and fœtus | Andrews1 |
| 39 | Gofey | 34 years | ? | L | Excision Excision | R R | Extrauterine and fœtus Tube and ovary | Andrews ¹ Andrews ¹ |
| 40 | Grunert Guersant Guinard and Dudefoy | 5 months 10 years | 2 | Ļ | Excision | [) | Tube and ovary | Andrews1 |
| 42 | | | A | L | Excision | R | Tube and ovary salpingitis | Andrews1 |
| 43 | Habs Holley Hawkins Heggaard Heggaard Hermann | 5 months | A | E. B | Excision Excision | R R | Tube and ovary Tube and ovary | Andrews ¹ |
| 44 | Hawkins | 1 | 2 | | Post mortem | n | Tube and ovary | Andrews1 |
| 40 | Heegaard | 4 week: 6 months | C | L R | Excision Excision | Ř | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 47 | Hermann | 3 mont | ha C | R | Excision Excision | RRR | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 49 50 | Holet and Tiling | 38 years | A | R | Excision | B | Tube and ovary | Andrews1 |
| 51 | Hulke | 37 years | C A | Ď | Excision Excision | R D | Tube and ovary Tube and ovary | Andrews |
| 52 | | | - | | Returned | , to | Tube and ovary Extrauterine gestation | Andrews ¹ Andrews ¹ |
| 53 54 | Kreiger | of vener | Ç | L R | Returned | R | Tube and ovary | Andrews1 |
| 5.5 | Lambert Larimere L. and W. L. and W. Lenouse | 35 years | Ċ | I. | Excision Excision | RR | Tube and ovary Tube and ovary | Andrews' |
| 57 | L. and W | 2 months | · C | R | l'ost mortem Returned | [) R | Tube and ovary Tube and ovary | Andrews1 |
| 58 | Lenoune | 30 years | A | R | Returned | R R R R | Tube and ovary | Andrews1 |
| 61 | Lentz | 6 months | | Ļ | Excision Excision | R | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 112 | Lentz Lockwood Loner McCosh Mace and Moncany | | + | Ļ | l'ost mortem | R | Tube and ovary | Andrews1 Andrews1 |
| 63 | Mace and Moncany | 1 | (| R | Excision | R | Tube and ovary | Andrews1 |
| 65 | Malherbe | . 34 years | A | L | Excision | R | Tube and ovary Tubal gestation | Andrews1 |
| 66 | | 4 m ditti- | C | Ļ | Excision | R R | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 68 | Manega | 3 months | Č. | R | Returned | R | Tube and ovary | Andrews1 |
| 70 | Mariani | . In Vents | A C | R R R | Returned Excision | R R | Tube and ovary Tube and ovary | Andrews ¹ Andrews ¹ |
| 71 | | | C | | Excision Excision | R | Tube and ovary Tube and ovary Tube and ovary | Andrews |
| | Muni | . Smooths | | L R R | Excision | R | Tube and ovary | Andrews1 |
| 24 | De Naz | . 40 years . 4 months | , | R | Excision | R | Tube and ovary Tube and ovary | An lrews ¹ Carstens ² |
| 50 | | | 2 | 5 | Excision | R | Tube and ovary Tube and ovary | Carstens ² Andrews ¹ |
| 7.5 | Panas | . it months | (| R | Returned | R | Tube and ovary | 1: 1: 11: |
| 80 | Parker | . 24 years | 6 | Û | Excision Excision | R | Tube and ovary, | 100 15: |
| 00 | | | | | | | Tuberculous | |

| | | | Acquired or con- | | | | Contents | Reported |
|----------------|---------------------------------|--------------|---------------------|--------|----------------|---------|-------------------------|----------------------|
| | | Age: | genital: | Side: | Operation: | Result: | of sac: | by: |
| 8: | Pollard | 3 months | C | R | Excision | 13 | Tube and ovary | Andrews1 |
| 82 | Buech | 20 years | C | L | ? | R | Tube and ovary | Andrews1 |
| 83 | Quadfleig | 41 years | A C | R | Returned | R | Tube and ovary | Andrews1 |
| 84 | Raymond | 38 years | C | L | Excision | R | Tube, ovary and bladder | Andrews1 |
| 85 | Rhein | 68 years | Α. | R | Excision | R | Tube and ovary | |
| | | | | | | | saicoma | Andrews' |
| 86 | Rigby | 3 months | С. | R | Excision | R | Tube and ovary | Andrews' |
| 87 | Rizzoli | 46 years | .A. | L | Excision | Ð | Tube and ovary | |
| | m m | | | | | | Strangulated bowel | Andrews1 |
| 88 | De Ruyter | 44 years | A | R | Excision | R | Tube and ovary | Andrews |
| 89 | Schmidt and Dehner | 25 years | - 2 | L | Returned | R | Tube and ovary, left | Andrews1 |
| 90 | Schmidt and Dehner | 25 years | 3 | R | Returned | R | Tube and ovary, right | Andrews1 |
| 91 | Schnitzler | 8 months | C | L | Excision | R | Tube and ovary | Andrew-1 |
| 92 | Steinel | 40 years | A | L | Returned | R | Tube and ovary | Andreas |
| 93 | Sutton | 4 months | C. | L | Excision | R | Tube and ovary | |
| 94 | Taite | 26 years | ? | ? | Excision | R | Tube and ovary, | |
| | | | | | | | ovarian tumor | Andrews1 |
| 9.5 | Tricomi | 14 years | C | R | Excision | R | Tube and ovary | Andrews1 |
| 90 | Tricomi | 40 years | .1 | L | Returned | R | Tube and ovary | Andrews1 |
| 97 | Tscher | 6 months | (| R | Excision | D | Tube and ovary, | |
| 98 | Tubby | 4 months | C | L | Excision | | Both tubes and ovaries | |
| | | | | _ | Returned | D | | Andrews1 |
| 99 | Wrinch | 26 years | A C C | L | Excision | R | Tube and ovary | Andrews1 |
| 100 | Zogbaum | 8 days | C | ? | Post mortem | D | Tube and ovary | Andrews1 |
| 101 | Zogbaum | 43 days | C | L | Post mortem | D | Tube and ovary | Andrews1 |
| 102 | Zurhelle | 44 years | A | R | Excision | R | Tube and ovary | Andrews ¹ |
| 103 | Kivlin | 39 years | A | R | Returned | R | Tube and ovary | Andrews1 |
| | | | | | | | Omentum strangulated | |
| | | | | | | | and bowel | Kivlin ⁴ |
| ² A | indrews. Journal of the America | in Medical A | Association | , Nove | mber 24, 1906. | | | |

²Carstens. *Ibidem*, November 2, 1907 ³Bull and Coley did not find any data. 4Kivlin.

1826 FIFTH AVENUE.

A CASE OF ACTINOMYCOSIS OF THE PELVIS.* By Frank McMorrow, M. D.,

Syracuse, N. Y.

Actinomycosis is a rare disease in this country and in England, and is more prevalent in France and Germany. On this account certain phases of the subject are more readily studied by continental observers. Osler states that, although familiar with this affection in cattle since 1878, and constantly on the lookout for this disease, no instance has fallen under his personal observation.

It is an infectious disease, due to the presence in the tissues of a peculiar fungus termed actinomyces (ray fungus), and characterized by the development of tumor like masses, which readily undergo softening and suppuration, but which may easily extend into adjacent tissues. In man the disease was first described by James Israel, and subsequently Ponfick insisted upon the identity of the disease in man and cattle. The source from which the infected fungus is derived has not been determined, but it seems probable that it is taken in with the food.

In man this disease occurs most frequently in the lower jaw or in some tissues adjacent to the mouth. Of seventy-three cases reported by Moosbrügger, in forty-one the jaws, mouth, or throat were involved, in fourteen the respiratory tract, in eleven the intestines, and in the remaining seven the point of infection was not ascertained. In the intestines the disease may occur either as a primary or secondary affection.

Clinically this disease resembles certain forms of pulmonary tuberculosis and putrid bronchitis, and it may be mistaken for chronic pyæmia. Cases of human actinomycosis until recently were looked upon as sarcomata.

In looking over the literature of this subject, I find but very few cases of actinomycosis of the pelvis reported. Both Hacker and Sanger each report a case, Gildner reported a case with bilateral

*Read before the Social at Academy of Medicine, April 7, 1907.

actinomycosis of the ovaries with actinomycotic abscess of the left hip. There is one case recorded in the Lancet of actinomycosis in the lung of a boy sixteen years of age, followed by metastastic manifestations in the pelvis, one year afterward.

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The following case of pelvic actinomycosis came under my observation and presents all the salient features of this disease:

CASE.—Mrs. S., of East Syracuse, born of American parents. She had always lived in this city, where her parents died at the ages of seventy-five and seventy-eight; parents died at the ages of seventy-nye and seventy-eight; one sister died during childbirth, and one was living. Three brothers were living, two had died, one as a result of an accident, the other of Bright's disease. She had always been strong and healthy up to the time of this sickness, usual weight 142 pounds. She was the mother of three healthy children, the youngest being five months and the weather weather the side. old when she was first taken sick. Her food was that usual in the families of working people.

Her personal history was that about the middle of October, 1905, while ironing one afternoon she was seized with cramps in the abdomen. She sent for the family physician and after being in bed for a day she was able to be about her work again. She had eaten some grapes that day and attributed her seizure in the abdomen to the fruit day and attributed her seizure in the abunding to the fruits she had taken; from this time on she noticed her health began to fail; she had occasional attacks of vomiting, which left her weaker each time; nothing that was done could check the progress of her malady. Since about the first of December she was confined to the bed continuously, with constant vomiting and general prostration.

I saw her first on December 26th. She was very much reduced in flesh with a marked cachexia. I called her attention to a lump in her side; she said she felt it, but as it gave her no pain or did not inconvenience her in any way she thought no more about it.

On December 29, 1905, patient was admitted to St. Joseph's Hospital in this city in a toxic condition. Dr. A. B. Miller saw her in consultation with me, temperature 101, pulse 120. She was very much prostrated and emaciated, vomiting still continued, bowels were very loose; at times she would be able to retain small amounts of animal broths and albumen water.

Physical examination: Patient was poorly nourished, cheeks were sunken, complexion sallow; there was some abdominal tenderness, a mass was plainly discernible just to the left of the umbilicus and one in left illac fossæ with areas which fluctuated on palpation. Liver and spleen were slightly enlarged. On vaginal examination a large

tumefaction was felt, the physical signs of which de-

noted a pelvic absces

The blood was examined; the red cells numbered 3,870,-000; white cells, 4.350. Hæmoglobin, 37 per cent. The uranalysis showed specific gravity, 1.010; trace of albumin, pus, and a few round cells.

The patient's condition remained the same for three or four days. Her temperature continued to fluctuate between 99° and 101.6° F. The vomiting still persisted, and there

was from six to eight watery stools in twenty-four hours.
On January 6th, her condition not having improved, Dr.
Miller opened the vaginal cul-de-sac and removed a large amount of fætid pus, containing minute yellowish granules, a culture of which was sent to Dr. H. S. Steensland, who promptly reported the inflammatory exudate taken from

the cul-de-sac to contain actinomyces.

the cul-de-sac to contain actinomyces.

The day following her temperature reached 102.6° F, and pulse 120; vomiting had ceased; in a few days the vomiting returned, less marked at first. Gradually she continued to fail, growing weaker and being unable to retain any nourishment by the stomach; she finally passed into a comatose condition, her temperature reaching 103. F. She died on the twenty-ninth day after entering the hospital.

The prominent features, then, of actinomycosis of the pelvis are: First: Gastrointestinal symptoms, persistent vomiting for over a period of two months. Where these symptoms are present, a physical examination then will reveal the pathological lesion.

Second: Fever. In the common forms of actinomycosis, which affects the jaw, with the swellings prominent and with elevation of temperature, the diagnosis is suspected especially if the patient has partaken of food from infected animals, but if a sporadic case occurs, with no enlargements and with a continued fever, typhoid is always looked for. In this case a blood examination will throw much light on the subject.

Third: The presence of an ill defined, slowly increasing swelling without pain, which may escape the attention of the patient and physician (there being no involvement of the lymphatics and no glandular enlargement until suppuration sets in), demonstrates the necessity of a careful examination in clearing the diagnosis in a hitherto obscure case.

The mode of infection here is doubtful, and it is more than possible that the lesion in the pelvis was secondary to the primary focus in the colon.

The question arises what would be likely to lead to a diagnosis in a single isolated case of this kind. The presence of tumor like masses slowly developing, especially in the neighborhood of the mouth, without pain, should be watched closely, and when suppuration sets in, free incisions, with a microscopical examination of the purulent discharges the

characteristic fungus will be shown.

Some writers believe that the disease is due to infection with two or more distinct species of microorganisms; this uncertainty about this subject has been increased by a tendency to class with actinomycosis certain other suppurative processes which have been called pseudotuberculosis or streptothrix infections. Professor Wright, of Harvard Medical School, in his essay which was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery says: "The term actinomycosis should be restricted in its meaning to a suppurative process combined with granular tissue formation, the pus of which contains the characteristic granules." This definition, therefore, excludes those cases of so called pseudotuberculosis and streptothrix infections, because the microorganism of actinomycosis differs

entirely in its biological character from the microorganism associated with it.

The treatment of this class of patients is absolute extirpation of all infected tissues. When the disease is early recognized and the affected part is susceptible of thorough removal, a cure may be obtained. Actinomycosis, however, has a strong tendency to recur even after apparently thorough excision. Da Costa operated in a case of cutaneous actinomycosis twenty times before a cure was effected. Where the surgical procedure is limited. owing to the involvement of other organs, all fluctuating points should be incised, with the daily application of compresses containing iodine to the indurated zones; internally potassium iodide in large doses is valuable, with proper hygiene and life in

300 Snow Building.

Our Benders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are ar-nounced at frequent intervals. So far as they have been decided upon, the further questions are as follows: LXXVII—Hoge do you treat carriess ulcer? Closed

L.X.V II — I on the August 15, 1908.)
L.X.V III.—How do you treat acute coryza' (Answers due not later than September 15, 1908.)
L.X.I.X.—How do you treat sick headache? (Answers

due not later than October 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practica-ble, no one answer to contain more than six hundred

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal The prize of \$25 for the best essay submitted in answer to question LXXVI has been awarded to Dr. Beverley Bedinger of Mar Verb when the

Robinson, of New York, whose article appears below.

PRIZE OUESTION LXXVI.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

BY BEVERLEY ROBINSON, M. D., New York.

Acute articular rheumatism is presumably, though not proved, a microbic infection. Over this infection the salicylates have greatest power-in lessening pain and at times diminishing intensity of the infection and also decreasing the liability to complications. They should be given in moderate doses and continued while manifest rheumatic symptoms last. Combined with an alkali in moderate proportions, preferably potassium citrate or sodium bicarbonate, they are more efficient and less liable to cause accidents, especially cardiac weak-

Personal experience, both hospital and private, makes me rely more upon salicin than any other of the salicyl compounds. It is antirrheumatic, almost specifically so; it is tonic; it is digestive; it causes no harm to the heart; it may be used with impunity for many days in large doses; it may be continued indefinitely almost, in moderate doses, with advantage to rheumatic symptoms of any nature. When salicin is not clearly useful, or remedial, after a few days' use, it is doubtful whether we have to do with acute articular rheumatism, or a multiple arthritis

of another prominence. Aside from the use of salicin, properly and continuously given, the most important indication is unquestionably rest, both to body and to mind, as far as may be. The bodily rest should be, of course, rest in a comfortable bed, with a moderately hard, well made hair mattress; and this rest in bed should be absolute until the fever has completely disappeared, and until pain and swelling of the joints are also gone. Again, there should be no voluntary movements so long as the heart shows evidence of endocarditis or pericarditis, but, above all, of marked, acute dilatation, manifested by physical examination and also by rational symptoms of rapidity, weakness, and irregularity of pulse, with more or less dyspnœa; or, on the contrary, by slowness, feebleness, and irregularity of pulse rhythm, and by pallor, or cyanosis of lips, face, and extremities, notably finger tips.

The greatest danger, present and future, of an attack of acute articular rheumatism, is the development of cardiac dilatation, accompanied or not by endocarditis or pericarditis. Dilatation of the heart can be prevented in two ways, and two ways only; first, insistence upon the use of salicin; second, absolute, prolonged rest in bed. Other complications which may arise, particularly pleurisy with serous effusion or empyema, should be treated by aspiration and drainage of the latter, avoiding, if possible, in these cases, resection of one or more ribs.

The affected joints may be treated locally by one of many liniments, or embrocations equally good. Linimentum saponis compositum, with or without equal parts of oil of turpentine, or Stokes's well known turpentine liniment, where oil of turpentine is combined with the yolk of egg and acetic acid, are, in my judgment, among the best, as shown by

long experience.

Moderate diet, especially during the acute stage, is important, and no meat, sauces, or highly spiced food should be allowed. A varied, very light, diet, however, is permissible, and I am confident that it is wrong and unintelligent to insist upon an absolute milk diet. Whenever milk is well digested and liked there is no positive objection to its use, but when it is objected to for one reason or another, light broths, jellies, rice in different forms, macaroni, eggs, cereals are unobjectionable. Whenever there is great temporary weakness from heart failure caused by excess of rheumatic poison and directly occasioned also by indiscretions of diet, overexertion, or sudden excitement, or anxiety, nothing quite equals the use of tincture of strophanthus by the mouth or hypodermically. Neither digitalis, strychnine, sparteine, camphor, caffeine, etc., can compare with it in rapidity and efficiency of action. The strophanthus may often be given with advantage at the same time as aromatic spirit of ammonia or the best

cognac. A small cup of hot, strong, palatable, well made coffee is also most useful.

The best available preparation of coca has been of signal value to me many, many times. Whenever the joints resist local applications and remain painful, and become distorted, a well padded, suitably applied splint is very essential to obtain best results. When after several days pain locally in the joint has subsided, proper resistant movements and massage treatment are of highest value. To keep bowels regular with Rochelle salts, as required, and the kidneys active with vichy are secondary indications, only a degree less important than what precedes to obtain best results in a given case.

As the rheumatic poison varies in intensity and in its effects with every individual, child or adult, so we must not hope to obtain equally good effects in every case, even from the most rational and best

ordered treatment.

Dr. William Lynn Wilson, of St. Joseph, Michigan, writes:

The patient should be put to bed in a large, airy room, free from all dampness, and into which plenty of sunshine enters. The temperature of the room should be kept at about 68° F. A competent nurse should be employed, who should have complete charge of the case, and have instructions to keep all others from the room, as even the closing of a door or a heavy step on the floor aggravates the patient's suffering. Absolute rest, both physical and mental, is the keynote of treatment; and this means confinement in bed from the first symptoms until convalescence is well established, and the danger of a relapse, or of cardiac complications, is at a minimum. The bed clothes should be soft and comfortable, and the patient should wear a soft flannel gown, open all the way down the front, and slit along the outer border of the sleeves, so that it can be changed with the least possible handling of the body. If sweating is profuse, he should lie between two light woolen blankets. The affected joints should be protected from the weight of the bed clothes by the latter being supported on a cradle, and each painful joint should be placed in the most comfortable position possible, and in many cases supported by a well padded splint.

When first called to a case, I usually give from two to five grains of calomel in divided doses, and follow with a glass of magnesium citrate. Afterwards the bowels should be moved with a saline laxative each morning, if necessary, preferably sodium phosphate, but if this not active enough, Rochelle salts, or one of the aperient mineral waters, should be given.

The diet for the first two weeks should consist mainly of milk, when it is well digested. In many cases it is well to dilute it with vichy water, and in some cases buttermilk should be substituted. Afterwards green vegetables and cereals may be added.

Water should be freely given, either plain, or in the form of lemonade, barley water, or oatmeal water. In the majority of cases the salicylates are the most useful remedies to reduce the fever, relieve the pain, and possibly shorten the attack. I prefer sodium salicylate made from oil of wintergreen, and give it in 15 grain doses every three

hours, until 90 to 120 grains are given in twentyfour hours. If at the end of forty-eight or seventytwo hours, the symptoms are not relieved by these doses, it is useless to continue the remedy, and I then replace it by acetphenetidin, 5 grains every three hours, either alone or combined with 1/4 to 1/2 grain of codeine sulphate. In some cases the pain is so severe that morphine sulphate, 1/4 grain, is required, given by the mouth or hypodermically; but it should not be resorted to until the salicylates alone have proved ineffective. Sodium salicylate is best given in capsules of $7\frac{1}{2}$ grains each, two of which are the ordinary dose, or in the following prescription:

R Sodii salicylatis, Ess. pepsin., Aquæ,

Sig.: A dessertspoonful every three hours.

If, at the end of forty-eight or seventy-two hours, the more severe symptoms are relieved by these doses I continue to give this drug in 71/2 grain doses, four times a day, until the acute symptoms have entirely subsided. Some patients cannot take the salicylates in large doses without producing distressing symptoms, as vertigo, nausea, vomiting, and even maniacal delirium. In these cases they may be given in smaller doses, and if they still disagree, they should be abandoned.

Sometimes aspirin in 15 grain doses is better borne, but this remedy also frequently irritates the stomach. Salophen, also in 15 grain doses, may be subtituted, but is more applicable to relieve the less acute symptoms. In the milder cases a capsule of acetphenetidin, 21/2 grains; salol, 21/2 grains; and codeine sulphate, 1/4 grain; or one of acetphenetidin and aspirin, each 3 grains, may be given every two hours; or oil of wintergreen, in doses of 10 to 20 drops, may be given in capsules, or in an emulsion. When their irritant effect on the stomach is the chief objection to the salicylates, they may be given for two or three days in an enema as follows:

| $\mathbf{P}_{\!\scriptscriptstyle{F}}$ | Sodii | salicylatis, | | | | | ٠ | | | | ٠ | ۰ | | | | 3p | -3i | , |
|--|--------|--------------|------|--|--|--|---|--|--|--|---|---|--|---|----|---------------|-----|----|
| | Tinct. | opii. deod., | | | | | | | | | | | | | | . 11 <u>k</u> | XV | ; |
| 3.1 | .\quæ, | | | | | | | | | | | | | 1 | 1) | to | 311 | j. |

and afterwards salicylic acid applied to the joints by inunction as follows:

| P, | Salicylic acid, Oil of turpentine. Lanolin, | | | āā 3i; |
|----|---|-------------|------|----------|
| М. | Lard, | • • • • • • | | āā 3jip. |

This is rubbed into the skin, and a dressing of absorbent cotton applied, and covered by some impervious material.

We may use equal parts of oil of wintergreen and

lanolin applied in the same way

Whenever inunctions are to be used we should

prescribe an animal fat for the base.

I have also used mesotan, diluted with a small amount of olive oil, and painted over the joints, and covered with a gauze dressing; but never with an impervious covering. In conjunction with the salicylate treatment, I give 30 grains of sodium or potassium bicarbonate every three hours, until the urine is rendered alkaline. I often give it in an effervescing solution with lemon juice. Afterwards

I continue one of these alkalis in smaller doses or substitute the effervescing potassium citrate in doses sufficient to keep the urine slightly alkaline.

In anæmic patients, or in old people, the alkalis should not be given. Instead of them tincture of ferrous chloride should be prescribed in 10 to 20 minim doses, well diluted, every three hours.

The administration of the salicylates and alkalis conjointly often proves too much for the patient's stomach, in which case their use should be curtailed, or the one most at fault abandoned.

In cases of hyperpyrexia we should use cold sponging or cold packs, and an ice cap to the head, until the temperature is reduced to 102.5° F. We may also use medicinal antipyretics cautiously.

In many cases of rheumatism all forms of internal medication sometimes prove useless, or even aggravate the patient's condition, in which event they should be discontinued, and reliance placed upon careful nursing and diet, soothing local applications, and absolute rest and quiet. When endocarditis is present or suspected a cold water coil, or an ice bag, should be placed over the præcordium. When the pericardium is involved, pain should be relieved by an opiate, and cold applications made as stated. If cold is not well borne, apply a mustard plaster or small blisters to the præcordial region. In children smaller doses of the salicylates are indicated, and potassium citrate in doses sufficient to keep the urine alkaline. Owing to the greater liability to cardiac complications in early life, the necessity of absolute rest, even in mild cases, should be particularly emphasized.

In the way of local treatment to the affected joints, in some cases enveloping them in absorbent cotton, and keeping them on a well padded splint, is sufficient. In more severe cases an alkaline lotion like Fuller's (sodium carbonate, 3vi; tincture of opium, 3i; glycerin, 3ii; water, 3ix), applied hot and frequently changed, is of great benefit.

When the redness and swelling are marked, an application kept wet with lead and opium solution is very helpful (tincture of opium, 3ii; diluted solution of lead subacetate, O.j). A bandage of several layers of gauze, saturated with alcohol and covered with rubber protective, often gives great relief.

I have also found that a saturated solution of magnesium sulphate applied on gauze and renewed as it evaporates is often useful. Sometimes the following ointment has a soothing effect:

| \mathbf{R} | Oil of gaultheria | 1 | | |
|--------------|-------------------|---|-------------------------------|-----|
| | Menthol, | | | |
| М | Lenolin, | | · · · · · · · · · · · · · · 3 | iv. |

In cases which permit of some handling of the affected joints, the following liniment may be gently rubbed in and applied:

| Ĭ, | Oil of gaultheria, |
|-----|------------------------|
| | Menthol, |
| | Tincture of opium, |
| | Liniment of soft soap, |
| 0.1 | |

After the more acute joint symptoms have subsided, an ointment of ichthyol, 25 to 50 per cent., is useful, and may be applied together with gentle massage, or the compound iodine ointment may be used in the same way.

To promote the absorption of exudates and effusions, massage and passive movements, and various hydriatic measures, as general and local hot baths, affusions, and douches, are all important. The alternate hot and cold douche is especially efficacious. The application of the negative pole of the galvanic current is an aid to absorption, while the positive pole may be used if the joints are still painful. When the inflammation and pain persist in one joint, the local hot air bath at a temperature of 200° to 250° F., given in one of the apparatus now on the market, is a very useful procedure. When skillful massage and hydrotherapy cannot be obtained, absorption of exudates and effusions can be hastened by three or four small blisters, applied within an inch of the affected part.

In some few cases in which the swelling and pain in a joint were very great I have used an ice bag with great relief; but do not resort to this method often, as there is a great prejudice on the part of the laity to cold applications in rheumatism.

The management of the stage of convalescence is equally as important as that of the acute attack, and all measures which tend to improve the patient's general condition, diminish the anæmia, and aid the nutritive processes should be employed, as tonics, iron, cod liver oil, etc. He should not be allowed to get up too soon. It is better to first sit up in bed for a short time, then in a chair, and then very gradually begin active movements. With a view to the prevention of relapses and recurrences his vasomotor reaction should be educated by various hydriatic measures, electric light baths, and massage.

Careful attention should be given to the mouth, throat, and nose, especially of the tonsils and pharyngeal space. If the tonsils are enlarged, or adenoids present, they should be removed as soon as possible. The importance of a daily evacuation of the bowels should be impressed upon the patient. The urine should be examined frequently, especially with reference to its acidity, excessive amounts of urates and phosphates and oxalates, and the presence of indican and the ethereal sulphates, in order that appropriate measures may be instituted. The diet should be carefully regulated according to the case. In the majority of cases milk, cereals, and the green vegetables constitute an appropriate diet. I usually allow meat once a day, eggs in moderation, fresh ripe fruits, and baked potato. Meat extracts, the coarser meats, sweets of all kinds, fried and made over dishes, pastry, and rich desserts should be prohibited.

The habit of drinking plenty of water between meals should be encouraged. In feeble anæmic patients the diet should not be restricted too much, and in the case of children oils and fats should be prescribed. The patient must be cautioned against exposure to cold and damp, especially when heated, and to avoid draughts. The clothing should be light but warm. Usually light, woolen underclothes are best, but he should be warned against the use of hot, bulky, woolen garments. Daily exercise in the open air should be advised.

the open air should be advised.

In all cases I regard the treatment of the patient as well as the disease to be most important, for there is a great and wide difference in the action of the respective measures prescribed among different patients, and constant watchfulness and caution are necessary on the part of the medical attendant.

Dr. James Porter Fiske, of New York, remarks:

Acute articular rheumatism, or rheumatic fever, resembles in many respects an infectious disease, and may be due to a streptococcic infection. It is characterized by fever, sweats, joint involvement, and often cardiac disturbance. The entrance of infection in some cases seems to be the tonsils, in others probably the intestinal tract. From the first the teeth, mouth, and throat should be treated to prevent further infection or reinfection; frequent hot antiseptic mouth washes for the teeth and mouth, Dobell's solution to the throat. If the throat is red and swollen frequent hot irrigations of normal salt solution are most helpful. Stomach and bowels should be put in order by use of calomel, grain ii, followed in six hours by Epsom salts. If the patient is seen early and the febrile onset is sharp, very little food should be allowed during first twenty-four hours. In these cases the joint involvement completes the diagnosis. In children under twelve the disease is often atypical, and we have observed cases in children with the febrile movement and later cardiac disturbance, without joint manifestations.

The observed ætiological factors are: I, Errors of digestion, including a depraved or hyperæmic condition of the digestive tract, often chronic constipation. 2, Exposure to cold, sudden change in temperature, chill, and tonsilitis. 3, The presence of some form of streptococci. At present the treatment is largely empirical, but frequently the disease is controlled, relapses avoided, and complications prevented. The real treatment will not be known until the proper bacteriological findings show us the ætiological factor. After that we may be given a curative serum.

Prophylaxis.—The gastrointestinal tract must be kept in order. Constipation, the most common disorder we have, must be avoided. The diet should be mixed and simple, avoiding overindulgence in starchy foods. Sweets and pastry should be avoided. Plenty of water between meals and systematic exercise are indicated. Wool or merino underwear should be worn throughout the year by the susceptible ones. Avoid exposure to cold. The nose and throat should be kept in a healthy condition. Large tonsils and adenoid growth should be removed. The teeth should be kept in good order. The feet must be kept warm at all times.

Treatment of the attack.—The patient should not be clothed in linen or rest between sheets. A light flannel wrapper should be worn, or the patient should lie between light blankets. The joints require protection. Cotton roll and flannel bandage will give support. Many joints require very careful protection, as twenty per cent. ichthyol ointment in lanolin with starch or plaster of Paris fixation. Later, on removal of dressings, the joint position should be changed and if necessary fixation reapplied. Some joints require gentle extension as well as fixation. The proper care of the joints in the severe cases will lead to less joint change, as well as great relief to patient. In acute articular

rheumatism the administration of the salicylates in many cases seems to be as effective as mercury in syphilis or quinine in malaria. In other cases, despite the treatment, the course of the disease is protracted. Certain cases indicate that the disease is a self limited one, going on to spontaneous cure, with, however, the liability to posttoxic conditions, and not infrequently the patient is left with a marked susceptibility. We recommend early in the disease the administration of calomel followed by an aperient. Then the free administration of salicylates in liquid form, say grain xv, every two to three hours, for twenty-four to forty-eight hours:

Sig.: Take one tablespoonful every three hours.

Give water freely, yet carefully; freely administer orange juice, and take good care of the skin. Change the bedding and bathing when possible. Every severely affected joint should be supported and placed at rest. Cardiac complications are best treated by occasional use of mustard locally with continued use of the ice coil. Hyperpyrexia is treated by the cool bath or rubbing the patient with ice. The diet during the febrile stage should be fluid, and consist of milk, peptonized or modified, simple broths, and gruels. As soon as convalescence is established it is well to place the patient on the following prescription:

 B
 Pulv. rhei.
 .5i;

 Sod. bicarb.,
 .7.
 .5i;

 Tr. nuc. vomicæ,
 .5ä;
 .5i;

 Ext. cascar, sagradæ,
 .5i;
 .5i;

 Sod. salicylatis,
 .3ii;
 .3i;

 Aq. menth. pip.,
 .q. s. ad. šiv.

Sig.: One teaspoonful after meals.

This familiar prescription may make some of the older clinicians smile, but it is potent in preventing relapses in susceptible patients who have suffered in the past.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

The Funds of St. Bartholomew's Hospital.—Hospital Abuses. — Deaths Under Anæsthetics. — Ophthalmic Nursing.

London, August 11, 1908.

An appeal is being made to the public for fundon behalf of St. Bartholomew's Hospital. As this hospital is considered one of the richest in London, the appeal is rather surprising. As a matter of fact, it is only in the last few years that a deficit has arisen, and it has occurred under the following circumstances: Some time ago it became obvious to those in charge of the hospital's interests that it was being hampered by the want of several new buildings which had become absolutely necessary if thorough efficiency of work was to be maintained. But there were almost insuperable difficulties in the way

of expansion, owing to the fact that on every side except the south the hospital was bounded by public streets, and along the whole of the southern boundary was Christ's Hospital, or the Bluecoat School, as it is popularly called. The question of removing St. Bartholomew's Hospital into the country, or at any rate to some distance from its old site, was considered. A Mansion House committee of inquiry made an exhaustive investigation into the matter, and it was finally resolved that it was impossible in the public interest to entertain the idea of removing the hospital from its present site. So the governors of the institution took advantage of the removal of the Bluecoat School to acquire part of the site of that building for their extension scheme. This was done only after protracted negotiations involving Parliamentary proceedings. Eventually rather more than an acre and a half of land belonging to Christ's Hospital was acquired at a cost of £255,325. To obtain this large sum it was necessary to borrow £120,000, for which an interest of over £5,000 per annum has to be paid, and also to sell out stocks representing an income of £4,000 a year. These transactions obviously reduced the hospital's income by more than £9,000 a year. Previous to this there had been a surplus income of £2,000 a year. Now this has been turned into a deficit of £7,000 a year, and unless it is met this will soon accumulate into a very heavy burden of debt. Hence, in endeavoring to keep pace with the demands upon it, this institution has been forced from a position of comparative security to one of increasing dependence upon publie charity.

The growing feeling of British medical men against hospital competition was prominently shown at the annual meeting of the British Medical Association in Sheffield last week. For the first time in the history of the association was the question of hospitals dealt with, and a code was framed for the guidance of hospital committees under the title of "suggested model principles of hospital management." It was agreed that inability to pay for adequate treatment should be the consideration for the admission of all patients for hospital treatment. The system by which subscribers obtain letters which entitle patients to admission was condemned. An important discussion took place with reference to pay wards in hospitals, and by a large majority the resolution was passed that there was no objection to pay wards being connected with voluntary hospitals, provided they were open to all members of the medical profession, who should be paid any fee arranged for with the patient.

Another important resolution that was approved by a large majority was that all urgent and trivial cases, after the patients had been once seen, if deemed ineligible for further hospital treatment, should be referred elsewhere. With reference to the abuse of the out patient department, a resolution was passed that this department should be primarily intended for consultations.

The paying wards that have been established at St. Thomas's Hospital are very successful. They have been in use now for nearly two years, and represent an attempt to institute what is usually termed a hospital for the middle classes, that is to

say, one that affords comfortable accommodation with trained nursing and the attendance of a resident medical officer at a reasonable cost (which also includes medicines and dressings) and does not impose anything like such a burden upon patients of moderate incomes as would residence in a private nursing home. There is accommodation for nineteen men and twenty women, each patient having practically a separate room, and this arrangement insures complete privacy. Many of the patients are under the care of surgeons who are not connected with St. Thomas's Hospital.

The subject of deaths under anæsthetics came up for discussion in Parliament recently. A question was addressed to the Home Secretary asking for figures showing the number of deaths from anæsthetics in England and Wales during the last six years, and the following official figures were given: In 1901 there were 133 deaths from anæsthetics, in 1902 the number was 148, in 1903 it was 146, in 1904 it was 155, in 1905 it was also 155, in 1906 it was 183, a total for six years of 921. As regards the question of the appointment of a royal commission, Mr. Gladstone stated that he was in communication with the Lord President of the Council and through him with the General Medical Council on the question whether a course of instruction in the administration of anæsthetics could be included in all cases in the course of study required for the medical qualification. He thought the question of holding a formal inquiry by royal commission or committee could with advantage be postponed, at any rate until he knew what action the medical authorities were prepared to take in the matter. The Royal London Ophthalmic Hospital (Moor-

The Royal London Ophthalmic Hospital (Moorfields) has of late years gained a splendid reputation as a training school for nurses who intend to specialize in ophthalmic nursing, and for any nurse a certificate from Moorfields (gained after two years' work there) carries considerable weight whenever she applies for a post at a general hospital. This is well shown by the fact that, of the matrons recently appointed at the metropolitan hospitals, three have been at some time Sisters at Moorfields. A great compliment was recently paid to this training school when two of its nurses were specially selected to go to Philadelphia in order to teach the Moorfields system of ophthalmic nursing there.

Therapeutical Rotes.

Coal Tar in Chronic Eczema.—R. L. Sutton (Journal of the American Medical Association, August 8, 1908) calls attention to the value and efficiency of common coal tar, which may be obtained from any of the large roofing or paving companies, in the treatment of certain types of eczema. Applied undiluted on smooth pieces of cotton cloth, it relieves eruptions characterized by a dry, cracked and scaly skin where there is considerable papillary hypertrophy and but slight thickening of the outer layers of the epidermis. Eruptions of such a type are frequently seen about the knuckles, especially as a sequel to repeated attacks of an occupation derma-

titis. In these cases the author has found coal tar much superior to salicylic acid and similar keratolytics

Tincture of Eucalyptus in Hæmorrhage.-A. Todd-White (British Medical Journal, July 11, 1908) expresses the opinion that the value of the tincture of eucalyptus as a hæmostatic does not appear to be generally recognized. He has used it in minor operations, where the effects of adrenalin are transitory, and therefore dangerous, with good results. He cites the case of a patient who had a tooth extracted, and had had persistent hæmorrhage from the socket. The usual remedies were applied without avail. On the third day tincture of eucalyptus was applied, and the hæmorrhage almost immediately ceased. He has also found it effective in controlling bleeding from cuts of the extremities and from leech bites, after the other usual remediesalum, tincture of ferric chloride, ice, etc.—had failed. The tincture of eucalyptus is useful as a dressing on lint after circumcision or other minor operations. The author considers that the internal administration of calcium chloride, with the external application of tincture of eucalyptus, would arrest any form of hæmorrhage.

The Treatment of Trachoma.-In the Long Island Medical Journal for August, 1908, J. C. Hancock discusses the various methods of treating the symptoms of trachoma by medicinal applications. He has reached the conclusion that there are few diseases, local or general, in which a longer list of remedies has been employed; but the more he has seen of trachoma the more he has been convinced that any patient presenting objective symptoms sufficient to permit of a diagnosis is a case for operation. It is his belief that the only way to cure trachoma is to rupture the granules and express their contents, and to follow these procedures for a number of weeks with instillations of a mildly stimulating antiseptic, the last to eliminate traces of infection in a germicidal way and by absorption small and deep granules not affected in the operation. The instrument he prefers is the Jameson trachomatome, which does its work thoroughly, he says, without injury to the conjunctiva. He recommends that the eyelids should be subjected to a thorough squeezing after the operation in order to expel the contents of the granules.

The Treatment of Nervous Palpitation of the Heart.—Darié recommends (Journal de médecine de Paris, August 8th) the administration of the following combination in pill form, one pill to be taken with each meal:

B Pulverized valerian, ...
Extract of valerian, ...
Ammonium valerianate.

M et fae pil. No. xl.

Tonic Ferruginous Pills,—The following combination is credited to Erb in *Journal de médecine de Paris* for August 8th:

B Ferrous lactate,
| Nature |

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NEW YORK, SATURDAY, AUGUST 29, 1908. .

THE WEST HAVERSTRAW STATE COLONY.

The new State institution about to be provided near West Haverstraw, in Rockland County, some thirty miles from New York over the West Shore Railroad, should be a marked feature in the charity work of the State. During the first three years that the Craig Colony for Epileptics was in existence all patients admitted were personally selected by Dr. Charles S. Hoyt, for thirty-five years secretary of the State Board of Charities. The organic law at the Sonyea Colony declared that it should be for "the humane, curative, scientific, and economic care and treatment of epileptics exclusive of insane epileptics." Those who drafted that portion of the law governing the admission of patients inadvertently failed to exclude idiots and imbeciles, although it seemed plainly their intention to do so.

After Dr. Hoyt's work was over, and because of the enormous pressure that was constantly brought to bear upon the colony authorities to admit low grade epileptics, they were compelled to receive them. The cumulative result of this, some thirteen years later, is the presence of 600 of this class at Sonyea now, all of whom are absolutely hopeless of any degree of improvement or cure, and who improperly occupy space to the exclusion of patients of a better grade who might be benefited or cured. In 1904 the question of constructing in a remote part of these premises a building for 700 infirm epileptics demanding custody only was brought up

by Dr. Spratling. The plan was opposed by some who professed to see in it a perversion of the original design for which the colony was created-a view that was perfectly correct. Insistence upon providing such a building forced an important issue, for shortly after that an agreement was reached upon the necessity for a new institution, to be of great capacity and to be established near the most populous part of the State; the new place to be exclusively for the "overflow classes" from the large number of infirm inmates of the Craig Colony, the Institution for Feeble Minded Women at Newark, the one at Syracuse for children, and the Asylum for Unteachable Idiots at Rome, all of these having accumulated numbers whom their organic law had not intended they should provide for. All told, some 1,700 to-1.800 custodial cases have been counted as fit subjects for the new State Colony at West Haverstraw.

The legislature of 1907 authorized the governor to appoint a commission to select a site for the new institution in the "southeastern part of the State." Governor Hughes named a most excellent commission, consisting of the Hon. William R. Stewart, president of the State Board of Charities, Mr. Franklin B. Kirkbride, and Mr. Alexander Proudfit, all of New York city. This commission did its work in a singularly comprehensive and satisfactory manner. The illustrated report issued by it some time ago is without doubt the most complete document of the kind ever prepared by any similar commission in this or any other State. It was so complete, so convincing, that the legislature found it difficult not to act. The commission examined more than a score of sites within the area prescribed, and finally agreed upon a composite tract of some 2,000 acres, four miles from West Haverstraw, composed of cultivated fields, elevated plateaus that make fine building sites, and original forests containing an abundance of hard timber that will be more valuable years hence than it is now.

They employed well known landscape and sanitary engineers, caused a complete topographical map of the entire tract to be made, secured options on all the real estate wanted, and prepared and introduced into the legislature a bill making an appropriation of \$188,575 for the purchase of the property. An important point the commission did not neglect was that of an ample supply of pure water for all purposes. It had the great wisdom and settled determination to purchase 600 acres of elevated woodland containing fine springs and running streams, the conservation of the flow of which will give the new colony all the water it will ever require, and that, too, under a gravity system that will be moderate in cost. The legislature of the present year made an appropriation for the desired

purchase, and the governor promptly approved the bill.

The next step of the commission was to appoint an advisory committee of six-Dr. William P. Spratling, of Sonvea, chairman; Dr. L. P. Clark, of New York, secretary; Mr. Robert W. Hebberd, Commissioner of Charities, of New York; Mr. Homer Folks, secretary of the State Charities Aid Association, New York; Dr. W. E. Fernald, superintendent of the Massachusetts Institution for Feeble Minded Children, Waverly, and Mr. Alexander Johnston, of Fort Wayne, Ind. The commission spent three days in going over every part of the site and in making a thorough study of its physical advantages, with a view to advising upon the size and proper grouping of the several units of buildings for the different types of defectives which the new place is being designed to care for.

The committee was profoundly impressed with the natural and possible advantages of the place from every point of view. The State of New York, they feel, holds in its possession just now an opportunity for establishing one of the most necessary, best planned, best arranged, and most effective charitable institutions it is possible to conceive of. The topography of the site is such that a thousand or more defectives of a single class can easily be disposed in groups of buildings at one point on the property, and yet be so effectively isolated that other groups will be virtually ignorant of their presence. Nature has made provision for the most perfect natural classification. The next step will be to request the legislature of 1909 to make an ample appropriation for beginning the work on the colony. It would facilitate future work greatly if the legislature could be induced to make this first appropriation large enough to provide the needed central features at the outset-features which are usually provided piecemeal, because the early appropriations are rarely sufficient to permit of any other plan.

If the physicians of this State should feel so disposed, they might help materially by stimulating public interest in a charity destined to bring relief to families in all parts of the State. They can help secure a first appropriation of \$500,000, with which sum the necessary administrative group, a hospital, a power plant, heating plants, trade school buildings, ordinary schools, residences for officers and employees, an adequate sewage system that will keep flowing streams uncontaminated by toxic matters dangerous to health, and the construction of a water supply plant for the entire colony so far as a reservoir and the chief mains are concerned. All these could be provided in addition to a group of buildings sufficient for housing 800 to 1,000 defectives of a uniform kind. The authorities at the Craig Colony would hope to see Sonyea relieved as early as possibly of 600 infirm epileptics, that their places may be given over to others who hold out a promise of improvement or cure. It only remains for the Site Commission to have a perfect topographical map made of the entire property, and on it to plot the future homes and adjunct structures for 2,500 to 3,000 "children of the State," and for the coming board of managers to procure a medical superintendent who will be willing to give twentyfive years of hard labor to the making of a place whose future usefulness will be on a larger scale than that of any other charity in the State at present. Happily, not a whisper of bad politics has contaminated the new project so far, and we hope it may continue to escape the blight of an influence of this kind.

EXAMINATIONS IN CHEMISTRY.

It is of course natural for a man to look upon his own subject in a college curriculum as of great importance. His tendency to seek to impose his view upon others is apt to come out in undue prominence when it falls to his lot to arrange an examination paper. We recently quoted with approval certain criticisms of this tendency on the part of chemists, by Dr. Willis G. Tucker, professor of chemistry in the Albany Medical College. We are glad to find that another eminent teacher of chemistry, Professor Thorpe, of Manchester, England, entertains views which support Dr. Tucker's contentions. In the *British Medical Journal* for August 15th there is printed the following letter, signed by Professor Thorpe:

May I be permitted to draw attention to a question asked in a recent examination in organic chemistry for medical students, the syllabus for which states that "the whole subject is to be treated in an elementary manner"? The question was: "On analysis an acid, whose melting point was 190° C., gave the following results: 0.2159 gramme gave 0.3595 CO2 and 0.1209 H2O. On titrating with ammonia (1 c.cm. = 0.00334 NH₃) 0.4859 gramme of the acid required 37.52 c.cm. From these data calculate the molecular formula of the acid." Assuming that by the term "molecular formula" structural formula is meant-else why is the melting point given?-and assuming that the acid does not contain nitrogen, the empirical formula CoH+O+ agrees well with the data given. Of the many dibasic acids of this formula no one melts at 190°, the nearest being dimethylmalonic acid, which melts at 192°. But, apart from any slight error of this kind, is it to be expected that candidates, in a subject which is to be treated in an elementary manner (or so far as that goes in any manner whatever), and who may not consult books of reference during the examination, should be required to know the melting points of all the dibasic acids?

We have submitted this letter to an accomplished American chemist, and he writes to us: "I consider Professor Thorpe's criticism a most proper one. I should be at a loss to know how to begin to solve the problem as stated. Of what possible use such knowledge can be to a medical student I am unable to say." It is consoling to find that the extraordinary demands of medical examiners in chemistry are not confined to the United States, but the sooner they are resented everywhere the better.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Though this important congress does not begin its work for nearly a month yet, it is none too early for the physicians of the country to prepare in great numbers to take part in the proceedings, by their attendance if in no other way. The sessions are to open on September 21st and to continue until October 12th, but the section meetings will all be held during the week beginning on September 28th. The members are to be of two classes. Active members pay a fee of five dollars, and they receive, besides the ordinary privileges of membership, a full set of the published Transactions. Associate members pay a fee of two dollars. They are not entitled to the Transactions or to vote in the congress, but they receive the official badge and such printed matter as may be distributed during the sessions, they share in the entertainments, they may attend the meetings, clinics, demonstrations, etc., and they are entitled to the benefit of the special transportation and hotel rates which have been arranged for.

During the time to be devoted to the sessions of the sections there will be two general meetings. It is hoped that the President of the United States will preside over the first of these meetings, to be held on Monday, September 28th, and he has promised that, in case it is impracticable for him to do so, he will depute Secretary Cortelyou to represent him. The other general meeting will probably be held on Saturday, October 3d. Except on the days of these general meetings, each section will hold two sessions daily. Topics will be dealt with by the various sections as follows: Pathology and bacteriology (Section I, under the presidency of Dr. William H. Welch, of Baltimore); clinical study and therapeutics-sanatoria, hospitals, and dispensaries (Section II, under the presidency of Dr. Vincent Y. Bowditch, of Boston); surgery and orthopædics (Section III, under the presidency of Dr. Charles H. Mayo, of Rochester, Minn.); tuberculous disease in children (Section IV, under the presidency of Dr. Abraham Jacobi, of New York); the hygienic, social, industrial, and economic aspects (Section V. under the presidency of Mr. Edward T. Devine, of New York); state and municipal control (Section VI, under the presidency of Surgeon General Walter Wyman, of the United States Public Health and Marine Hospital Service); and tuberculous disease in animals and its relation to man (Section VII, under the presidency of Dr. Leonard Pearson, of Philadelphia).

About two thirds of the time allotted to the congress will be taken up with exhibitions. In connection with the congress, special lectures will be delivered in various cities by several of the distinguished foreign visitors. The cities in which these lectures will be delivered are Washington, Philadelphia, Boston, New York, and Baltimore. The lecturers are Dr. Bernard Bang, of Copenhagen (Washington, October 3d); Dr. A. Calmette, of Lille (Philadelphia, September 26th); Dr. Emil Coni, of Buenos Aires (Washington, October 2d); Dr. Arthur Newsholme, of Brighton (Washington, September 29th); Dr. Gotthold Pannwitz, of Berlin (Philadelphia, September 24th); Dr. R. W. Philip, of Edinburgh (Boston, October 6th); Dr. C. H. Sprouck, of Utrecht (Boston, October 7th); Dr. A. Martinez Vargas, of Barcelona (New York, October 9th); Dr. Theodore Williams, of London (Philadelphia, September 25th); Dr. Maurice Letulle and M. Augustin Rev. jointly (Washington, September 30th); Dr. L. Landouzy, of Paris (Baltimore, October 5th); Dr. A. A. Wladimiroff, of St. Petersburg (Washington, September 28th); and Professor N. P. Tendeloo, of Leyden (city and date not mentioned).

TUBERCULOUS DISEASE OF THE STOM-ACH.

We would call attention to the publication of the details of two cases of tuberculous disease of the stomach by Dr. R. Mouchet (Bulletin de l'Académie royale de médecine de Belgique. xxii, 3, 4). It is a rare affection. In Nothnagel's Encyclopædia, American edition, reference is made to twenty-one cases of this lesion collected from literature by Letorey, in 1895. Additional reports quoted in the volume bring the total number up to thirty-six cases. Osler refers to the rarity of the lesion. It is always associated with tuberculous foci in other organs, usually the lungs.

PILOCARPINE AND THE CONTENTS OF THE THORACIC DUCT.

The administration of pilocarpine is followed by an increase in the number of lymphocytes in the peripheral blood. Rous (Journal of Experimental Medicine, May), whose work on the lymphocytes we have already noted in these columns (New York Medical Journal, May 30th), finds that the increase of lymphocytes in the peripheral blood, fol-

lowing the intravenous injection of pilocarpine nitrate in dogs comes from the thoracic duct, and that quickened lymph flow and dyspnæa are accessory phenomena to the increased lymphocyte percentage. The action of pilocarpine is considered to be mechanical in the production of lymphocytosis, possibly in the form of direct pressure from contraction of smooth muscle. The experiments show the importance of the thoracic duct as a reservoir for lymphocytes and as a factor in the production of lymphocytosis, which is not, as is often asserted, due to direct migration of lymphocytes into the blood from the spleen, the bone marrow, and the lymph nodes.

Aews Items.

The New Jersey State Board of Pharmacy has issued registered assistant's licenses to fifty-three candidates, as a result of the July examinations

Naval Hospital at Newport, R. I .- The naval authorities of Newport have settled upon a site for the new Naval Hospital, for which an appropriation of \$85,000 is available.

Medical Society of the Missouri Valley .- This society will hold its twenty-first annual meeting on September 3d and 4th, at Council Bluffs, Ia., Dr. W. F. Milroy, of Omaha, presiding. Thirteen States are now represented in this society.

M. Henri Becquerel, the discoverer of the Becquerel rays, died in Paris on August 25th, aged fifty-six years. M. Becquerel held many positions in the scientific world, among others that of Permanent Secretary of the Paris Academy of Sciences.

Contagious Diseases in Chicago.—During the week ending August 15, 1908, the following cases of contagious diseases were reported to the Department of Health: Diphtheria, 41; scarlet fever, 35; measles, 19; whooping cough, 25; tuberculosis, 37; total, 181.

Robert Koch Foundation.—The Emperor of Germany has given \$24,000 to the Robert Koch Foundation, an institution to be opened at Berlin, for investigations in tubercu-The gift completes the \$100,000 which Andrew Carnegie stipulated should be subscribed before his promise of \$100,000 should become available

Medical Inspection of Schools in Buffalo.-The medical inspection of public and parochial schools in Buffalo will begin when the schools open on September 8th. Five doctors and one nurse have been appointed to conduct the inspection, namely: Dr. Shafer, Dr. Barrows, Dr. Wheeler, Dr. Callanan, Dr. McClure, and Miss O'Hara.

Floyd County, Ga., Medical Society.-At a meeting of this organization held on Saturday, August 22d, the evening was devoted to a discussion of the recent meeting of the American Medical Association and the Chicago post-graduate work. Dr. J. C. Watts and Dr. W. L. Funkhouser, secretary of the society, opened the discussion.

The Fort Worth, Tex., Medical College is planning to enlarge its scope by adding a department of dentistry. The establishment of a hospital to be maintained by the college, the city, and the county is under consideration, as the present hospital facilities of the college building are entirely inadequate, and when this new hospital is completed there will be sufficient space for the new department.

Meeting at Craig Colony, Dr. W. P. Spratling, medical superintendent of Craig Colony, has invited medical representative from all the State hospitals for the meane in this State and from the charitable institutions generally to meet at Sonyea on Thursday, September 3d. A medical programme has been arranged for the day, while the evening will be given up to entertainment. Dr. Spratling will lecture on the types of epilepsy, and show living pictures of epileptic manifestations.

A Young Folks' League for the Home Treatment of Tuberculosis has been organized in New York. The object of the league is to raise funds for the free distribution of milk and eggs to tuberculosis patients, and it hopes to cover the entire city, distributing daily three quarts of milk and six eggs to each patient who is properly recommended by the visiting nurse

The Mortality of Connecticut.—During the month of July, 1908, there were reported to the State Board of Health 1,487 deaths from all causes, which were 346 more than in June, 1908, and 31 less than in July, 1907. The annual death rate in 1,000 of population was 17.8 for the large towns, 15.3 for the small towns, and 17.3 for the whole State. Of the total number of deaths 158 were due to infectious diseases

The Mortality of San Francisco.-During the month of May, 1908, there were reported to the Health Department of the City and County of San Francisco 542 deaths from all causes, corresponding to an annual death rate of 12.48 in 1,000 of population, in an estimated population of 425,000. Of the total number of deaths 87 were of children under five years of age. There were 42 still births; 21 males, and 21 females.

German Hospital of Brooklyn .- During the month of July the hospital gave treatment to 115 charity cases, representing 1,530 days of treatment, while the balance, 135, pay patients, received 1,625 days of treatment, making a total of 3,155 days of hospital treatment; 89 emergency received first aid during the month and were discharged the same day. There were 79 operations during the month and the ambulance was sent out III times.

A Spa for North China.-We learn from the Lancet that in the Tangshun Hills in the Province of Shantung there are a number of hot and sulphurous springs, some of them being at a very high temperature. No definite analysis has yet been made of the waters of these springs, but some of them are known to contain large proportions of sulphur, saltpetre, and iron. It is proposed to erect modern hotels and residences at the place in order to take advantage of the medicinal properties of the waters,

A New Medical College in Atlanta, Ga.-The Hospital Medical College is the name of a new institution which will open for its first session on October 5th. The new will open for its first session on October 5tm. The new college is well equipped and will be conducted in connection with the Fields Hospital. A faculty of seventeen instructors has been appointed, and officers elected as follows: President, Dr. J. H. Powell; vice president, Dr. Giles Hathcock; dean, Dr. Charles H. Field; treasurer, Dr. J. R. Duvall; secretary, Dr. W. B. Lingo.

A New Hospital in Bayside, L. I., is soon to be established. Plans are being prepared, and it is said that the new institution will be thoroughly modern in construction and equipment. A stock company has been formed for the purpose of erecting and maintaining the hospital, and will be incorporated under the title of the Bayside Infirmary Company. A plot of ground on Broadway, overlooking Little Neck Bay, has been purchased for the site of the hospital, and it is expected that the building will be ready for occupancy in May.

A Campaign to Improve Health Conditions in Kentucky is being planned by the State Board of Health. the annual meeting of the board, which was held on August 21st, a resolution was passed authorizing an assessment on the membership of the board to defray the expenses of a commissioner to investigate the water conditions of the Ohio River and its tributaries. Dr. J. N. McCormack has been authorized to appoint the commissioner, who is to give his entire time to making the investigation. It is the opinion of the board that much of the sickness existing in the State is due to conditions prevailing in the Ohio Valley.

Women Medical Students in Swiss Universities. During the summer of 1908 there were matriculated at the several universities in Switzerland, 2,014 medical students, of whom 1,051 were women. Of the total number of students 530 were natives of Switzerland, and of these 33 were women. The number of women students at the several Swiss universities is as follows: Basel, 6 women out of a total of 172 students; Berne, 317 women out of a total of 512 students; Geneva, 266 women out of a total of 465 students; Lausanne, 216 women out of a total of 348 students, and Zurich, 246 serven out of a total of 517 . Personal.—Major Paul F. Straub, a surgeon in the Medical Corps of the United States Army, represented the Army at the Esperanto Congress held in Dresden recently. About 1.800 persons were present at the opening of the congress, and joined in singing an Esperanto hymn.

Lr. and Mrs. Addison Goodale, of Watertown, N. Y., celebrated the fiftieth anniversary of their marriage on

William G. Moorehouse, of Elmira, N. Y., has been appointed general medical examiner for the Pennsylvania

Scientific Society Meetings in Philadelphia for the Week Ending September 5, 1908:

WEDNESDAY, September 2d.—Association of Clinical Assistants, Wills Hospital.

THURSDAY, September 3d.—Obstetrical Society; Medical Society of the Southern Dispensary; Germantown Branch, Philadelphia County Medical Society.
FRIDAY, September 4th.—American Philosophical Society.
Medical Society.

Kensington Branch, Philadelphia County Medical

Local Epidemics.—There is a small epidemic of typhoid fever at Salem, N. J., fifteen cases having been reported in one week. There is a larger epidemic of typhoid fever in progress at Spring City, Pa., and at Royersford, Pa. More than one hundred and ten cases have been reported from these two places, and the Officials of the Penn-sylvania Department of Health have begun an investigation of the matter. Scarlet fever is epidemic at Collingswood, N. J., fourteen cases having been reported. Cerebrospinal meningitis is epidemic at Lewistown, Pa

Society Meetings for the Coming Week:

Tyesbay, September 1st.—Buffaio Academy of Medicine (Section in Surgery); Syracuse, N. Y., Academy of (Section in Surgery); Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Hornellsville, N. Y., Medical and Surgical Association; Bridgeport, Conn., Medical Association.

WEDNESDAY, September 2d.-Elmira, N. Y., Academy of

THURSDAY, September 3d.—Dansville, N. Y., Medical

FRIDAY, September 4th.-New York Microscopical Society.

The Mortality of Chicago.-During the week ending August 15, 1908, there were reported to the Department of Health of the City of Chicago 620 deaths from all causes, as compared with 657 for the previous week and 670 for the corresponding period in 1907. The annual death rate in 1,000 of population, in an estimated population of 2,166,-055, was 14.93. The principal causes of death were as follows: Apoplexy, 9; Bright's disease, 40; bronchitis, 4; consumption, 46; cancer, 25; convulsions, 2; diphtheria, 4; heart diseases, 63; influenza, 1; intestinal diseases, acute, to8; neasles, 2; nervous diseases. 11; pneumonia, 32; scarlet fever, 4; suicide, 7; typhoid fever, 7; violence (other than suicide), 42; whooping cough, 7; all other causes, 146.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August

| , 1908 | 1:1 | z. : : | . Au | 2 22 |
|-------------------------|------|--------|------|------|
| | | Deaths | | |
| 1 % sulosis ulmonalis . | 113 | - 611 | 437 | 153 |
| brought the | 1.3 | | 157 | 1.2 |
| Masks. | 100 | ξ. | 66 | |
| S to text | 4 - | | 72 | |
| St. allinx | | | | |
| Varicella | . 0 | | 1.3 | |
| Applied tever | 124 | 7 | 132 | 1.4 |
| A hooring coagh | | | I.T | - |
| · · brosemal meningitis | | | 7 | .3 |
| | | | | |
| Totals | 0.26 | 212 | 901 | 1.00 |
| | | | | |

The Health of Philadelphia .- During the week ending August 15, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 50 cases, 6 deaths; scarlet fever, 24 cases, 2 deaths; chickenpox, 2 cases, 0 deaths; diphtheria, 33 cases, 5 deaths; cerebrospinal meningitis, 1 case, 1 death; measles, 26 cases, 2 deaths; whooping cough, 15 cases, 4 deaths; pulmonary tuberculosis, 116 cases, 44 deaths; pneumonia, 24 cases, 10 deaths; erysipelas, 1 case, 0 deaths; puerperal fever, 4 cases, 5 deaths; tetanus, 4 cases, 1 death; cancer,

20 cases, 23 deaths, mumps, 3 cases, 0 deaths. The following deaths were reported from other transmissible discases: Tuberculosis, other than that of the lungs. 8 deaths; dysentery, 3 deaths; cholera morbus, 2 deaths; diarrhœa and enteritis, under two years of age, 81 deaths. The total number of deaths from all causes was 449, in an estimated population of 1,532,738, corresponding to an annual death rate of 15.11 in 1,000 of population. The total infant mortality was 163; 147 under one year of age, and 16 between one and two years of age. There were 49 still births: 20 males and 29 females.

The New York Central Railroad's Emergency Hospital.-The officials of the railroad state that this hospital, which was established some months ago, has proved a decided success in every way. Between thirty and forty patients are received each month, and during the month of July there were 171 patients at the hospital, of whom 49 were new cases. Most of these patients were laborers who had been injured in the excavation. All patients received at the hospital are treated free of charge. The hospital is situated in the new building on the Lexington Avenue side of the Grand Central Depot, and is in charge of Dr. William Wells Sanford, who is assisted by Dr. McLeod and several nurses. Serious cases are sent to the Flower Hospital for treatment.

Charitable Bequests.—By the will of Levi Meyer, the Jewish Foster Home and Orphan Asylum, Philadelphia, receives \$6,000; the Jewish Hospital, Philadelphia, receives \$1,000; the United Hebrew Charities, Philadelphia, receives \$1,000, and the Pennsylvania Society to Protect Children from Cruelty and the Pennsylvania Hospital receive \$100

By the will of Sarah E. Ward, the Cullis Consumptives, Home, Boston, the Boston Home for Incurables, the Free Home for Aged Women, and the Boston Society for the Relief and Control of Tuberculosis become residuary

By the will of Catherine M. Sullivan, the Boston Home for Destitute Catholic Children, the Carney Hospital, and

the Little Sisters of the Poor each receive \$100.

By the will of Mrs. Margaret Kenney, the Consumptives Home, Boston, will receive \$100.

Vital Statistics of New York .- During the week ending August 15, 1908, there were reported to the Department of Health of the City of New York 1.334 deaths from all causes, 689 of which were in Manhattan, 104 in the Bronx. 424 in Brooklyn, 73 in Queens, and 44 in Richmond. annual death rate in 1,000 of population was 15.74 for the whole city, as compared with 20.16 for the corresponding boroughs was as follows: Brooklyn, 14.82; Manhattan, 15.67; Queens, 16.37; the Bronx, 16.56; Richmond, 29.93. Of the total number of deaths 559 were of children under five years of age, and of these 313 were due to diarrheal diseases. There were 160 deaths from pulmonary tuberculosis, III from organic heart diseases, 60 from Bright's disease, 79 from pneumonia, and 40 from contagious disdisease. 79 from picturous, and 40 from chargons are eases. One hundred violent deaths were reported, of which 5 were from sunstroke, 77 from accidents, 6 from homicide, and 12 from suicide. There were 654 marriages, 2,404 births, and 122 still births reported during the week.

The New Hospital for the Rockefeller Institute for Medical Research .- Plans have been filed for the main hospital building and isolation annex which are to be erected in connection with this institution. The main building will be a seven story structure of brick trimmed with Indiana limestone. In the basement will be examination rooms and servants' quarters. Reception rooms, dining rooms for the nurses and the hospital staff, a sitting room, and the general offices will occupy the first floor. The second floor will contain the living rooms of the staff; the third floor will contain rooms for patients; a department of floor will contain rooms for patients; a department of hydrotherapy will occupy the fourth floor; the diet kitchen will be on the fifth floor; on the sixth floor will be an x ray room; the seventh story will contain chemical laboratories, and on the roof will be an operating room, an etherizing room and a sterilizing ward. On all the four upper floors there will also be special rooms for patients. The isolation annex will be a two story building, connected with the main building by bridges of steel and stone. The estimated cost of the hospital is \$350,000, and of the isolation annex.

Bith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL August 20, 1908.

By John C. Munro. High Frequency Electricity in the Treatment of Car-diac Disease. By Horace D. Arnold,

Some Border Line Cases of Mental Deficiency, By C. C. Beckley,

The High Grade Mental Defectives, By W. N. BULLARD.

The Surgical Rights of the Public.-Munro observes that the public can feel that, taking American surgery as a whole, both that done by the masters and that done by the rank and file scattered over the length and breadth of this continent, there is no surgery in the world more intelligent, more skillful, and more considerate of the rights and feelings of the patient. The rate of advance is almost phenomenal. We in the States are wont to boast of our commercial progress, which is apparent to everybody. Few beyond those working in hospitals, laboratories, and medical libraries realize that the advance in our profession is parallel with that in our commerce. The advance in the one, however, is for the most part financial and scientific as applied to finance, while the advance in the other is scientific, humane, educational, and life saving. A significant quality that belongs to our profession is the generosity of the surgeons of one locality towards those of another in freely giving and receiving the good things that spring up in our art. It is a most refreshing sign of broad culture, and it does much to destroy the petty jealousies that are a heritage of past generations.

2. High Frequency Electricity in the Treatment of Cardiac Disease.—Arnold remarks that high frequency electricity may be so applied as to reduce the blood pressure in almost all cases. amount of the reduction is greater in proportion to the abnormal height of the pressure, although in his series of cases none have been above 200 mm. The greatest fall in the abnormal blood pressures was 40 mm., and the average fall was 17 mm. after an average treatment of 12 minutes. There after an average treatment of 12 minutes. is good reason to believe that there is also a favorable effect on metabolism, and that in this way the conditions that cause the high pressures are improved. For this reason the effect of the treatment is not merely temporary, but lasts for a considerable time. This form of treatment will be of special value in cardiac cases where the heart is having difficulty to overcome high blood pressure, especially in those cases where the pressure is due to faulty metabolism or poor elimination. This includes the important class of cardiorenal cases. It will also be useful as an adjunct in the treatment of those cases of high pressure which have not yet developed cardiorenal disease, which are due in part to our strenuous modern competitive life and our excessive ingestion of food.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August . 1008.

The Opposition to Medical Research Charman's Addres in the Section on Pathology and Physiology. American Medical Association, June 5 to 8, 1908, By W. B. CANNON.

Further Results in Suprarenal Transplantation,
By F. C. Busch, T. M. Leonard, and T. Wright.
The Preservation of Anatomical Dissections with Permanent Color of the Muscles, Nerves, and Organs by a New Method,
By Edmond Souchox.

manent Color of the by a New Method, By EDMOND South by a New Position on Appendix Questions, and References to the Dawn of the Fourth or Physiologi-By Robert T. Morris, of Gastric and

References to the Dawn of the Cal Era in Surgery,
Prominent Symptoms in the Diagnosis of Gastric and Duodenal Ulcers.
By Christopher Graham.
Clinical Observations on Absolutely Irregular Hearts,
By Albion Walter Hewlett.
The Relation of Anticyclonic Weather to the Prevalence of La Grippe and Pneumonia on the Northern Hemisphere.
By C. M. RICHTER.
Report of a Case Traumatic Cervical Myelomalacia. Report of a Case

with Necropsy, By CARL D. CAMP. Cerebral Abscess,

By EMIL AMBERG By ISABELLA C. HERB 10. Experimental Parotitis,

- 2. Further Results in Suprarenal Transplantation.—Busch, Leonard, and Wright report a second series of suprarenal transplantations. In the first series of thirty-two cases a part of the animal's suprarenal was transplanted to its own kidney. At least one positive functional survival of such a graft was obtained. Partial proof of functionating suprarenal grafts was obtained in several other instances. The indication of successful transplantation consists in survival of the animal, in the absence of all suprarenal tissue, other than that of the graft, and in the histological demonstration of a living graft containing medullary cells. In the present series of thirty cases, transplantations have been made into the thyreoids, testes, and kidneys of dogs and rabbits, not only in the same animal, but also from one animal to another in the same species. The results of implantation into the testes and thyreoids were all negative. Positive results were obtained only in those cases where the kidney was used as the receiving tissue.
- 3. The Preservation of Anatomical Dissections with Permanent Color of Muscles, Vessels, Nerves, and Organs.-Souchon says that the following is a formula which is best suited for embalming subjects to be used in the dissecting room: A. Water, one and a half gallons; arsenious acid (saturated solution), one gallon; formalin, eight ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces; glycerin, sixteen ounces. B. and A. are to be mixed. The arteries are distended with cornstarch colored with crimson anilin, the diffusibility of which is regulated by a solution of tartar emetic. The formula used at Tulane for subjects for operative surgery he has worked out as follows: A. Arsenious acid (saturated solution), two and a half gallons; potassium nitrate, two pounds; formalin, four ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces; glycerin solution. B. is to be mixed with A.
- 5. Prominent Symptoms in the Diagnosis of Gastric and Duodenal Ulcers.-Graham remarks that all symptoms of gastric and duodenal ulcers are usually controlled by the measures directed toward pain. When pain is at its highest, so also is gas, eructation, and vomiting. By removing, neutralizing, or engaging the acid in the process of digestion, the pain stops, gas no longer forms, vomiting and eructation cease, and the patient enters a period of calm, to return to his former distress some time

later. The degree of discomfort depends on the extent of the lesion, the kind of food taken, and the care in its mastication. Until complications (obstruction, perforation, adhesions) have advanced, the pain and other symptoms seem chiefly due to increased acidity and spasm. Reverse gastric peristalsis adds to the discomfort. Later, when complications enter for consideration, the real symptoms are obscured, and the physician is often obliged to grope in the dark for an exact diagnosis, unless the patient has a judicial mind and can relate accurately his earlier symptoms. Again, the course of ulcer, like cancer, may be long latent, and be diagnosticated only when some threatening symptom like perforation suddenly prostrates the patient. If the perforation is not complete, or if only a small amount of septic material escapes, the pain may be of short duration, but intensely sharp and lancinating, simulating so closely gallstone colic that such diagnosis is the only logical one to make. If the perforation is free and the fluid septic or large in amount, the pain is much There is exmore intense than in gallstone colic. ceeding great shock, much morphine is required to control the symptoms, and early the appendicular region will be the centre of the pain. Later, if the patient survives, the pain will creep to the duodenum and gallbladder area. Unler such conditions one should think of perforating ulcer rather than gallstones or appendicitis. When, therefore, there are attacks of stomach trouble that run in continuous periods of days or months, with intermissions of days, weeks, or months with more or less freedom from symptoms, these periods recurring and occurring over years of time gradually deepening, the symptoms bearing close relation to food and being controlled or modified greatly by dietetic measures, food, drink, and alkalies, we may justly look for ulcer of the stomach or duodenum in a large number of cases. Purely functional overacidity may give symptoms difficult or impossible to distinguish from early ulcer. Appendicitis and more often cholecystitis may run a train of symptoms that will mislead the most painstaking clinician, but these cases are as purely surgical as are typical ulcer cases. Comprehensive surgery finds the source of the trouble and relief is the result. If a mistake is made it should be that of diagnosis only.

7. The Relation of Anticyclonic Weather to the Prevalence of Pneumonia.-Richter concludes that pneumonia is not merely a concomitant of the cold weather season. Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature. There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun, and that the prevalence of influenza and pneumonia is subject to a specific quality of such air.

10. Experimental Parotitis.-Herb has made studies on parotitis. She obtained a diplococcus from the body of a man, about forty years old, who entered the hospital in a moribund condition and died in a few hours. The diplococcus corresponded in its essential characteristics to the organism obtained from mumps by others. Except the report that he had had mumps no history was obtained. The post mortem examination showed a right suppurative parotitis, bronchopneumonia, and sever l

The cerebrospinal, pleuritic, and minor lesions. pericardial fluids, bile, spleen, lung, testicle, and right parotid gland were examined bacteriologically. Cover glass preparations from the bile, pericardial. and cerebrospinal fluids showed a rather large diplococcus; the latter also contained a smaller coccus occurring in groups. The pleuritic fluid contained a short bacillus. They were both Gram positive. The Proteus vulgaris was isolated from the pleuritic, cerebrospinal, and pericardial fluids, the spleen, lung. testicle, and parotid gland; the Staphylococcus albus from the lung, testicle, cerebrospinal fluid, and parotid gland. From the lung, testicle, cerebrospinal and pericardial fluids, bile and parotid gland a coccus was isolated with the following characteristics: The coccus appeared most frequently as a diplococcus, occasionally in chains of 4 to 6 elements, or in small groups. It was round and measured from 0.5 to 0.8 micra when about twenty-four hours old. When several days old it measured from 0.6 to 1.5 micra. It was easily stained by all the ordinary anilin dyes and was Gram positive. It grew equally well aerobically and anaerobically. It was not motile, had no capsule or flagella, and did not form spores, gas, or indol. It grew best in a temperature of 37° C. A temperature of 50° C. for three minutes destroyed growth, cold inhibited but did not prevent growth when the culture was again placed under favorable conditions. Colonies developed from a milk culture two months old and from agar which was dried till it was broken. While the coccus developed on al! the ordinary media, its growth was characteristically slow, the colonies on a twenty-four hour glycerin agar culture being scarcely visible. She found by mixing sterilized saliva with agar, as in making blood agar, that an abundant growth could be obtained in from twelve to twenty-four hours. Ascitic agar was also a good medium. The organism was fatal to white mice, white rats, guinea pigs, and rabbits when injected subcutaneously or intraperitoneally. The animals usually succumbed within twentyfour hours of peritonitis. Those that survived for several days died of bacteriæmia. Inoculations of suspensions of the diplococcus into Steno's duct in the monkey and in the dog produced an acute, uniform enlargement of the parotid gland accompanied with slight fever. In the dog this enlargement was the result of an infiltration that consisted largely of mononuclear cells, and was accompanied with a general increase in the mononuclear cells in the blood as well as a distinct rise in the opsonic index with respect to the diplococcus.

MEDICAL RECORD.

August 22. 1008

The Appearance of Heteroplasue Tumors in the Trans plantations of the Newgrowths of Animals,
By Professor von Leyden and Professor Carl Lewin.

Recurrent and Abductor Paralysis of the Larynx; Diagnosis and Treatment, By W. E. Casselberry Medical Treatment of Appendicitis.

Medical Treatment of Appendicus.

By G. R. CRUKSHANK.

The Physiology and Pathology of the Emotions: the Physical Bases of Mental Actiology.

By Homer Wakefield.

Marriage from a Medical Viewpoint,

By CHARLES GREENE CUMSTON Omen, By B. S. TALMEY. 6. Notes on Sterility in Women,

1. The Appearance of Heteroplastic Tumors in the Transplantation of the Newgrowths of Animals. -Von Levden and Lewin remark that

it is quite probable that both the cancroid and the sarcoma which were observed in connection with the transplantation of an adenocarcinoma of a rat were caused by some irritative influence the nature of which we do not as yet know, originating from the proliferating cells of the primary newgrowth. With these observations we have before us the fact of the appearance of new tumors, not alone the continuation of the growth of a transplanted portion of another tumor. We are therefore in a position to cause experimentally the development of a new formation, and this may give us the important opportunity to study the appearances and the growth of such a tumor from its very inception. Of course, the significance of such work for the questions involved in the study of cancer cannot now be estimated. One thing, however, must be kept in view: The principal reason for opposing the parasitic theory of the causation of cancer has been the statement that in the experimental studies of cancer new tumors were not produced in the animals but simply metastases of the original growth were artificially produced. Hauser, who is a determined opponent of the parasitic theory, has stated that the successful transplantation of tumors could be interpreted in support of the parasitic nature of the disease only when the tissues of the animal experimented upon could be made to undergo carcinomatous changes by the transplantation of the cancer cells into that animal. Such a phenomenon would happen in his estimation if the epithelial elements of the animal's skin showed carcinomatous proliferation after the subcutaneous inoculation of cancer cells into that animal. These conditions, which Orth also accepts as the criteria of a true infection, have in fact been fulfilled in the tumors observed by von Leyden and Lewin. The skin of the animals experimented upon has been stimulated in such a fashion that carcinomatous overgrowth has taken place in its elements. The fact is important that the phenomenon observed in the tumors of mice by Ehrlich, Apolant, Loeb, Liepman, and Bashford, the stimulation of the connective tissue to sarcomatous change by the inoculation of cancer cells into an animal, has been seen by von Levden and Lewin in another animal, the rat.

3. Medical Treatment of Appendicitis .- Cruikshank states that a few cases of appendicitis can be treated successfully by operation only; others are best treated by this means, but the great majority of cases are amenable to nonoperative treatment, no food or purgation, rest, judicious use of morphine, ice bag or hot applications, and Fowler's position. Enormous numbers of healthy appendices are removed. An operation should not be done during the acute stage. The mortality from appendicitis operations in the hands of incompetent surgeons is absolutely frightful. If there is doubt whether to operate or not,-don't. Every expert operator is not a surgeon, the former possesses merely dexterity, and the latter wisdom. The former works for various reasons, and the latter for the comfort and longevity of his patient

5. Marriage from a Medical Viewpoint.—Cum ston observes that matrimonial life in the case of neurotics is a very frequent cause of an improvement in neurasthenia, the result of overwork, of

poor hygiene, melancholia, and certain trifling mental disturbances produced by over fatigue, on account of the regularity that it brings to all the acts of life. Latent hysteria should not be considered as a serious hindrance to marriage, but it, nevertheless, is well to ascertain all points relating to the pathological antecedents of the future wife. Recent statistics show that the number of gynæcological operations necessitated by gonococcic lesions increases every year. To a certain extent the public has surmised the dangers accruing from this disease, but not to the extent that it should. In face of the terrible consequences to which gonorrhea may give rise, the mortal dangers to which the spouse is exposed, sterility following gonococcic complications, certain members of the profession have declared open war against gonorrhœal subjects guilty of contamination. In Germany especially a law is under consideration which tends to protect women against venereal contagion from the husband, or even the lover. Professor Hegar, in Germany, and Jullien, Cazalis, and several other physicians in France, have proposed an obligatory verification as to the genital innocuity of the future husband. As a conclusion to this Cumston would advise that young men be told that, if they are unfortunate enough to contract gonorrhæa or syphilis. they should loyally consult a reputable physician before their marriage to ascertain whether or not they are fit subjects for matrimony. It is high time that the profession put an end to public ignorance in these matters, and thus to a great extent avoid many catastrophies and moral pain.

6. Notes on Sterility in Women.-Talmey speaks of sterility in women. The primary sterility, when no conception has ever taken place, can be idiopathic sterility, absolute and irremediable, absence of vagina, rudimentary uterus, absence oi tubes, absence or degeneration of ovaries; or rela tive, which is curable. Secondary sterility occurs when there was fύundation, but an abortion has taken place or the child died, and after the first conception the woman ceases to propagate. In sterility caused by a diseased condition of the internal genital organs electricity is, according to Talmey, if not the only remedy, the remedy par excellence. physiological effects of the electric current take place by virtue of the vital properties of the body through its action on the nerve supply, influence upon circulation, secretory and excretory processes, and the acceleration and absorption of morbid products. Electricity promotes the nerve tone, increases mus cular activity, and quickens circulation. When the current passes through living tissues the interpolar action of the positive pole is, by contracting the capillaries, anodyne sedative, anticongestive, denutritive, and antihæmorrhagic. The interpolar action of the negative pole is, by increasing the blood supply, stimulating, congestive, derivative, and alternative, thus favoring absorption. The physiological effects of the faradic current are mainly mechanical, producing a veritable interstitial massage. These physiological qualities make electricity the best remedial agent in the treatment of endometritis, metritis, salpingitis, ovaritis, and pelviperitonitis. Endometritis and pelviperitonitis are by far the most frequent causes of sterility. The electric current tends to give to the uterus a certain amount of tone which it requires to harbor the ovum to the end of its de velopment.

BRITISH MEDICAL JOURNAL.

August 8, 1908.

The Treatment of Some of the Severer Forms of Headache, By W. HARRIS. The Value of Diminished Cardiac Dulness in the Diag-

By W. GORDON nosis of Cancer,

nosts of Lancer,
A Case of Streptococcic Puerperal Infection Treated
with a Vaccine, By G. W. Crowe and W. H. WYNN.
The Dangers of Calmette's Ophthalmoreaction,
By T. H. Butler. The Training of Teachers in Personal and School

By C. C. Douglas (Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Nacy, Army, and

.Ambulance. By E. M. WILSON. President's Address The Influence of Alcohol in the Services,

By A. M. DAVIES. The Feeding of the Soldier in Barracks, in Hospital, and in War, By R. J. BLACKHAM.

and in War,
Alcohol as a Cause of Inefficiency,
By G. S. CRAWFORD

10. The Importance of Learning a Trade in the Army,
By W. V. SINCLAIR

r. Headache.-Harris has elaborated the following anatomical classification of headache, on which he bases the appropriate treatment. A. Superficial. I. Diseases of the brain coverings. (a) Scalp-for example, cellulitis; weight of hat or mass of hair. (b) Pericranium-e. g., rheumatic. (c) Bone-e. g., tuberculous or syphilitic caries. The brain substance itself seems to be insensitive to ordinary stimuli, and the actual mechanism of the production of the pain in headaches is mainly by means of painful stimuli to the nerves supplying the coverings of the brain and its vessels. In group I the nerves of the scalp, pericranium or bone carry the painful impressions to the sensory centres. 2. Reflex visceral neuralgias of scalp. Ocular, dental, pulmonary, cardiac, gastric, etc. group the morbid process affects the nerves of a viscus at a distance, such as the branches of the fifth nerve from chronic strain, or from iritis or glau-The painful stimuli reach the Gasserian ganglion and set up irritability-so that other areas supplied by the fifth nerve become tender and appear to be the source of the pain. This is a true reflex visceral neuralgia. B. Deep. 3. Reflex cortical neuralgia. Visual "academy" headache; thunder storm; neurasthenic. Of the causes of headache within the cranial cavity, the true neuralgic headaches, such as the neurasthenic or that produced by dazzling the eyes, emotion, a thunder storm, etc., are probably true neuralgia of the cortical sensory centres and are best relieved by rest and antineuralgic remedies. 4. Toxæmic constipation and sluggish liver; influenza and other fevers; foul air; alcohol, ether. This is a very important group of headaches, but the exact mechanism of the production of the pain is obscure. In some instances, as in fever, increased vascular turgescence probably plays a considerable part. Alcohol and ether headaches may also be due to arterial engorgement. Constipation and sluggish liver are well known causes of headache, which may be periodic and accompanied by vomiting. 5. Increased intracranial pressure. This

is the most important cause of headache, and produces the most severe and persistent pain. In cerebral tumor there is general increase of pressure from the growth, and the headache is apt to be dif-When the cortex membranes are involved, then the pain becomes localized, and is a sign of the utmost localising value. Meningitis causes severe headache in two ways-first by involvement of the nerve endings in the meninges, and secondly by increased intracranial pressure due to cedema of the cortex. In acute or serous meningitis there is a rise of pressure due to the excess of cerebrospinal fluid. The same is true in hydrocephalus. Headache in cerebral syphilis is often most intense; even large doses of mercury and iodides do not bring relief until the cedema of the brain and excess of cerebrospinal fluid, due to the meningitis, have subsided. In arteriosclerosis from contracted granular kidney severe headache is common and is usually vertical or occipital. Both in this condition and in chlorosis (anæmia) there is cerebral œdema, raising the intracranial pressure. Nitroglycerin is the drug that here gives the quickest and most relief. Intolerable headache, optic neuritis, convulsions, coma, and death may be produced by a loose fibroma in the lateral ventricle, acting as a plug and preventing the escape of cerebrospinal fluid. True migraine is the most important and commonest of the causes of periodical headache, and the writer holds that the severe pain in the head is due to raising of the intracranial pressure. The hemianopia, dimness of vision, the numbness in the tongue, cheek, or arm, and the temporary aphasia, are all suggestive of sudden arterial constriction in the cortex. The vomiting is also a most characteristic sign of elevation of the intracranial pressure. Antineuralgic remedies only do good by their depressant effect, and for that large doses are required. Local measures would be trephining and opening the dura; lumbar puncture; leeches to the scalp; fomentations, hot bottles, or ice bag to the scalp or neck. Indirect measures, by lowering the general blood pressure-nitroglycerin and the nitrites; cardiac depressants, such as opium. aconite, chloral, phenacetin, and other coal tar analgesics. Purgation, diaphoresis, and hot baths.

2. Diminished Cardiac Dulness in Cancer .-Gordon finds that in many cases of cancer there is a decided diminution of the cardiac dulness in the recumbent posture, which is often of value in diagnosis. All cardiac dulnesses under two inches wide he considers as diminished. Three possible explanations may be advanced: (a) It is possible that in a case of cancer the heart, like other muscles, may become more flaccid than normal and less well filled than in health. If so, it may fall away more from the chest wall than normal in recumbency. (b) It is possible that the lungs may lose some of their elasticity in cases of cancer, and a spurious emphysema result which may partially obliterate the cardiac dulness. (c) In many cases of cancer the heart is known to become much reduced in size.

4. Dangers of the Calmette Reaction .- Butler considers that the Calmette ophthalmoreaction is often deceptive and may do grave damage to the eve, and that it is not justifiable to use it any longer. He has abandoned it, using in its stead injections of

old tuberculin (P. G.) as a diagnostic measure. He reports three cases in which, as the result of the installation of tuberculin, a typically tuberculous process was set up in a perfectly healthy eye.

LANCET

August 8, 1008

Intrathoracic New Growths, By T. R. Glynn. Human Tuberculosis and Cattle Tuberculosis: Investi-gations as Regards Ninety-seven Norwegian Farms, By B OVERLAND.

The Treatment of Appendicular Absce

On the Use of Selected Lactic Acid Bacilli and Soured Milk in the Treatment of Some Forms of Chronic Ill Health.

Note on a Case of Diphtheria and Impetigo Contagiosa in the Child, By T. P. Puddicombe.

Notes on Experiments as to the Constancy of the Car-bohydrate Reactions of the Streptococci, By V. Ritchie.

Preliminary Note on an Organism Discovered in a Case of Epidemic Diarrhea, By R. S. WILLIAMS, J. ORR, H. L. MURRAY, C. RUN-DLE, and A. E. WILLIAMS.

1. Intrathoracic Growths.—Glynn states that the symptoms of intrathoracic growths or hypertrophy of the bronchial glands are largely due to pressure on, or invasion of, nerves, bronchi, vessels, and other structures in the mediastinum. As a rule, the more extensive the tumor, the more positive the symptoms. Pain is usually present, in most cases neuralgic in character, and described shooting, burning, or stabbing, intermittent, or more or less continuous with exacerbations. The seat of the suffering is the back and sides. Pain is usually absent or slight in lymphadenoma or Hodgkin's disease. Dyspnœa is frequently present when the tracheobranchial glands are enlarged or are the seat of growths, and is commonly due to constriction of the lower end of the trachea; it may also be due to implication of the pneumogastric or recurrent laryngeal nerves, to pressure on the bloodvessels, or on the auricles, to changes in the lung following bronchial obstruction, or to pleuritic effusion. The dyspnæa may at times be paroxysmal. Hoarseness is a common symptom in mediastinal tumors and arises from pressure on the pneumogastric or recurrent laryngeal nerves. Cough is present at some period; it may be constant or paroxysmal, weak or very noisy. When a vocal cord is paralyzed there is also stridor. More or less fever is present in the subjects of Hodgkin's and malignant disease. The earliest indication of slight bronchial compression is lessening of the vocal fremitus, with successive diminution in vocal resonance, respiratory murmur, and chest expansion. In the cases of malignant disease, probably originating in the thymus or its remains, the physical signs in many respects closely simulate those of aneurysm. The diagnosis of mediastinal tumor is often difficult. In ancurysm there is apt to be more or less bulging, with expansile pulsation, single or double murmurs, diastolic shock, and tracheal tugging. On the other hand, a dull area with absence of heart or breath sounds, the existence of enlarged glands in the lower part of the neck, or the history of an operation for such glands, would be in favor of growth. Passive congestion and cedema of the head, neck, and arms, and also pleural effusion, are more common in growth than in aneurysm. Evidence of arteroll concepts at a lustom of suplidis or of could

tions likely to cause excessive strain, would tell in favor of aneurysm; youth or the female sex in the direction of growth. The prognosis of mediastinal growths is necessarily unfavorable. In the enlargement of the mediastinal glands associated with Hodgkin's disease, arsenic in increasing doses is indicated. In the rare cases of syphilitic infection of the mediastinal glands iodide of potash should be given. With these exceptions treatment can only be palliative.

2. Human and Cattle Tuberculosis.-Overland has studied the occurrence of tuberculosis in men and cattle on ninety-seven Norwegian farms, with especial reference as to whether it is rare or frequent for cattle and men to infect each other. He found, first, that tuberculosis in man and tuberculosis in cattle have a certain relation, as the tuberculin reaction in cattle on farms where there has been human tuberculosis occurs nearly three times as frequently as on farms where the disease was not Many circumstances favor the belief that animals and man can infect each other with tuberculosis. In districts where tuberculosis in the cattle does not exist, there is found less tuberculosis in the inhabitants. In animals only those living in captivity or kept as domestic animals develop tuberculosis spontaneously. Wild animals are free from the disease. It is therefore evident that man and cattle must be regarded as the seat of the tuberculous virus, but the "human" and "bovine" types have no doubt a common origin, and their difference is but relative. It is agreed that the human tubercle bacillus is less virulent to cattle than to man, and vice versa. But bacilli from man can cause tuberculosis in cattle; also they increase their virulence on successive passages till they at last have the same virulence as the cattle bacillus. All our live stock in the country ought to be tuberculin tested more than was the case before we fed our children on unboiled milk. 3. Appendicular Abscess.—Cuff suggests that

the operative treatment of appendicular abscess should conform as much as possible to the following propositions. The abdominal route should be chosen in all cases. The incision should be so placed as to allow of the easiest access to the origin of the mischief, and it should be so large and so capable of extension that any conditions likely to be found may be dealt with easily and thoroughly. Ease of manipulation means quickness of operation, and this quickness is essential in dealing with these half poisoned patients. A second operation should not be necessary if it can possibly be avoided, hence the appendix should always be removed at the same There should be as little mutilation as is time. compatible with thoroughness, two incisions not being made when one, properly placed, at first, will do all that is necessary. Drainage tubes, both in size and in number, should be reduced to a minimum. It should always be borne in mind that tubes leave very weak places in the scar, as well as being liable to injure the peritonæum, and so predispose to intestinal obstruction from the formation of adhesions with the bowels. Injury to the nerve supply and to mucular fibres should be avoided when possible, and the wound and its resulting scar should be placed in as strong a part of the abdominal wall as is compatible with the foregoing requirements.

LA PRESSE MEDICALE

- Gastric Overdistension and Overwork of Tachyphagic Origin, By Lucien Jacquet and Debat. Chandrotomy and Pulmonary Tuberculosis,
- By R. ROMME.
- Sodium Chloride and the Gastric Juice,
 By Alfred Martinet.
- 1. Gastric Overdistension and Overwork of Tachyphagic Origin.-Jacquet and Debat mean by tachyphagic pertaining to defective mastication. They conclude from their experiments that in the test tube the division plays an enormous rôle in the quickness of the dissolution of a given mass. The difference is in time from 213 upward, in quantity from two to twenty times according to the differences in concentration, acidity, and amount of pepsin present. In a final group they determine by successive approximations the eupeptic circumstances necessary to supply the division.

July 15, 1408.

- Chronic Progressive and Deforming Rheumatism from Thyreoid Insufficiency By EMILE SERGENT and PIERRE MENARD.
- The Clear State of the Hepatic Cells, By LEON BERNARD and L. LAEDERICH.
- 1. Rheumatism from Thyreoid Insufficiency. -Sergent and Menard discuss this condition, the first case of which was published by Sergent in 1894, giving the ætiology, symptomatology, pathology, diagnosis, and treatment. Improvement on thyreoid treatment is a very important point in the diagnosis. This medication may be dangerous and should be closely watched.

LA SEMAINE MEDICALE.

July 15, 1908.

Anæmia from Anhæmatopoiesis, By C. Aubertin.

Anæmia from Anhæmatopoiesis. - Aubertin says that in the majority of cases of serious anæmia anhæmatopoiesis is not anatomically demonstrable, and there is usually if not always the destruction of the blood which is related to deglobulisation. That is to say in most cases of anæmia the study of the anhæmatopoiesis should not lead one to forget the investigation of the causes of the anæmia, the mechanism of the destruction of the blood globules. which is of great importance from both the pathogenic and therapeutic points of view.

BERLINER KLINISCHE WOCHENSCHRIFT

- Brain Surgery, By HERMANN OPPENHEIM.
 The Hæmolysin Contained in Human Pancreatic Juice. By WOHLGEMUTH.
- Mesoperiarteritis (Periarteritis Nodosa),
 By Carl Hart.
 Salt and Sugar Infusions in Children, By W. Welland. 3
- Complement Joining Tuberculous Antibodies and Their Relations to the Tuberculin Reaction,
- Method of Transillumination of the Maxillary and Frontal Sinuses,

 By Sigismund Cohn.
 By Karl Vohsen.
- Diagnosis and Treatment of Acute Peritonitis,
- By FEDERMANN. By S. ALEXANDER. Epidemics and Their Management, By S. ALEXANDER. The Most Recent Epidemic of Diphtheria and the Serum Treatment (concluded),
 - By ADOLF BAGINSKY.
- Hæmolysin in Human Pancreatic Juice .-Wohlgemuth states that in inactive human pancre-

- atic juice there is no hæmolysis, although it possesses marked lipolytic properties. If rendered active by the addition of enterokinasis or calcium chloride, or by prolonged standing, the juice attains the ability to disolve red blood corpuscles under certain conditions. If an inactive juice is mixed with lecithin alone, this suffices to make it hæmolytic without developing tryptic properties. The appearance of the hæmolysis is to be ascribed to the lecithin The mechanism of the action of the formation. hæmolysin in any case is that the trypsin become active, immediately separate lecithin from any combination of lecithin and albumin, the lecithin completes the hæmolytic amboceptor of the pancreatic juice (lipase), and thus the hæmolytic lecithin is produced. But as long as the nature of the pancreatic hæmolysis is not clearer than it is to-day the possibility must be borne in mind that we have to deal with the action of a completely independent factor, perhaps with a combination of lipolytic and tryptic actions.
- 3. Periarteritis Nodosa.-Hart reports a case of this disease, and believes that it is to be ascribed to a general infectious toxic cause and not to a spe-
- Complement Joining Tuberculous Anti-5. bodies and Their Relations to the Tuberculin Reaction.—Cohn says that antituberculin is not an antitoxine in the usual sense and has nothing to do with agglutinins. In seven sera containing antituberculin agglutinin was demonstrable in only one, while on the other hand Koch's agglutination fluid was precipitated in nine sera that did not contain antituberculin, which therefore contained tuberculous agglutinin, but not the complement joining antibodies.
- 6. Transillumination of the Maxillary and Frontal Sinuses .- Vohsen describes a new instrument that he has devised for the transillumination of these cavities.
- g. Diphtheria and the Serum Treatment .-Baginsky says that in diphtheria as such there is a certain limit to the efficacy of the serum treatment, that a certain number of fatal cases will always be met with, but that this number can be materially reduced as soon as the knowledge of the value of the serum treatment and of the importance of its use at an early date becomes more widespread among the public, and also as soon as full, absolute confidence in this treatment is found among all practitioners, who will also be possessed of the method of employment and of the knowledge as to the proper doses to use

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT July 14. 1008.

- Concerning Hæmolysin, Bacteriolysin, and Opsonin,
- By YON BAUMGARTEN Studies Concerning Opsonin, Ву Вонме
- The Value of Lumbar Anæsthesia in Gynæcological
 Abdominal Operations,
 Concerning Periodical Acetonæmia in Large Children.
 By Hecker.
- Studies Concerning the Demonstration of Blood in the Urine by Means of the Spectroscope and Some Spectroscopical Chemical Procedures, By Schumm.
- Concerning the Reaction of Pulmonary Emphysema upon the Course of Asthma, By SANGER.
- upon the Course of Asthma, By SANGER. What Should We Expect from the Present Method of Treatment of Scoliosis?

8 Concerning Menthol Poisoning in Man,

By SCHWENKENBECHER. Milk Days in Antifat Treatment, 10. High Degree of Cicatricial Contraction of all the Fingers of the Right Hand in a Position of Flexion, By REISMANN.

11. A Double Vaginal Speculum for Simultaneous Suction By FISCHER

12. Historical Account of the Suction Treatment Applied to Bite Wounds made by Animals Suffering from By BRAATZ. 13. Trial of a New Clinical Method for the Determination By KÄMMERER.

of Opsonins, 2. Opsonin.—Böhme gives the following résumé of his conclusions. I. The opsonic value of the serum opposed to typhoid bacilli is well shown by the use of thinned active serum. With regard to the faults of method and the varying action of different normal sera conclusions can be drawn only from many observations. 2. In a typhoid patient observed for a long time there was a marked increase of the opsonins during convalescence. In spite of the high opsonic value a recurrence took place. After sinking at first the opsonic value again became high during the further course of the recurrence. Several weeks after the fall of the fever it fell to normal. 3. The inactive sera of three convalescents from typhoid fever showed a notably increased opsonic action, but one which was decidedly less than that of the active serum. They were markedly increased by the addition of normal active serum even to the same height as that shown by the active serum of the patient. 4. The increase of opsonic action in the cases observed thus depends upon an increase of thermostabile substances. 5. A marked increase of the opsonic action through the addition of thinned active serum is shown in inactive sera of typhoid fever patients and in sera produced by active immunisation against typhoid bacilli, colon bacilli, and meningococci. 6. The reactivity of the inactive serum, as well as a number of other peculiarities, can be explained best by the theory of an amboceptor complementlike construction of the opsonins of active sera. 7. The phagocytosis brought to a standstill under the influence of the serum may be greatly increased by constant shaking. 8. A rapid dissolution of the typhoid bacilli within the phagocytes takes place only in the presence of active serum. 9. The normal cerebrospinal fluid contains only traces of complement and opsonin.

3. Lumbar Anæsthesia in Abdominal Operations. Holzbach asserts that in lumbar anæs thesia during abdominal operations there is absolute absence of pain on the part of the patient during the entire duration of the operation, the production of conditions in the field of operation which facilitate the technique as far as possible in favor of a rapid and unobjectionable performance of the operation, the reduction of danger from the anæsthetic to a minimum both during and after the operation, the prevention of unpleasant or doubtful sensations at the beginning and in consequence of the anæsthesia, and the slightest possible influence upon

the postoperative course 4. Periodical Acetonæmia in Large Children.-Hecker reports six cases of acetonæmia met with in children between the ages of three and eleven. Two The patients were brothers. The prominent symptom is vomiting, and it has been suggested that the tongerma bug by be the ward. If the inamition caused by the vomiting. Hecker does not agree with this view, but considers it unquestionable that the primary condition is not the vomiting, but the formation of aceton bodies, and that the vomiting is a result of this disturbance, probably a symptom of excretion.

5. Demonstration of Blood in the Urine .-Schumm mentions three different forms of spectroscopes as especially fitted for the detection of blood in the urine. Unchanged oxyhæmoglobin may be detected in the urine when present in the proportion of 0.004 per cent., about one drop in the daily quantity of urine, by the direct spectroscopical examination without previous preparation, when the urine is examined in a layer about 20 cm. thick. The tannin method is suitable for cases in which, aside from the spectroscope, only the simplest laboratory aids are provided. The limit of its sensitiveness is about 1 in 5,000 or 0.02 per cent. The coagulation method is complicated and uncertain with small quantities of blood. The zinc acetate method may be simplified by performing the necessary heating over an open flame. The technique is fairly simple. With 50 to 100 c.c. of urine its limit of sensitiveness is about I in 20000, 0.005 per cent. If the hæmoglobin in the urine is not unchanged, but is in the form of methæmoglobin or hæmatin, and if the quantity is small, it must be taken from the urine in a suitable way in order that the spectroscopical test may be successful. In the application of the different spectroscopical chemical procedures one must remember that the symptom of absorption of the hæmochromogen formed from the hæmatin is not constant. The absorption bands begin within a few minutes after the addition of the reducing agent. The layer of ether over the watery ammoniacal fluid is necessary in order to prevent too quick oxidation of the hæmochromogen by the oxygen of the air. The principal bands suffice to identify the specrum of hæmochromogen.

8. Menthol Poisoning.—Schwenkenbecher describes the symptoms produced by the ingestion of eight or nine grammes of menthol in three men experimentally, one of them being the relator himself. The results of the experiment lead him to the conclusion that too large doses should not be used in

the internal administration of this drug.

THE PRACTITIONER. August, 1908.

Remarks on the Diagnosis of Iliac Swellings

By W. H. BATLE.
How to Secure Mental Health and How to Prevent
Mental Breakdown, By R. Jones.
The Surgical Treatment of the Incompletely Descended

By L. B. RAWLING Some Experiments in the Treatment and Prevention of Infection in Enteric Fever, By A. K. Gordon. A Review of Some Recent Work in Gynæcology,

A Review of Some Recent Work in Gynacology,
By H. PLAFFAIR.

Treatment of Trachoma, By A. W. Ormond.
Review of Some Recent Literature on Diseases of the
Nervous System, By H. C. THOMSON.
Major Operations in the Treatment of Puerperal Sepsis.

The Symptoms and Condition of the Blood in Per By J. G. TAYLOR пистоп Апапча,

1h Combition of the Ginns in Measle By F. E. TYLECOTE

1. Remarks on the Diagnosis of Iliac Swellings. Battle thinks diagnosis is not advanced by those who divide all abdominal conditions into those which require operation and those which get well without operation, and he has no great admiration for those who hesitate to express an opinion as to the nature of an abdominal swelling "until the cloth has been lifted." He excludes from consideration osteosarcomata, sarcomata of the abdominal wall, enlargements of iliac glands, aneurysms, and abscesses due to careous disease of the bones, or disease of the sacroiliac joint. The first question to be asked as to a swelling of slow growth is, is it inflammatory, is it subsiding or advancing? If not inflammatory, is it cystic or solid, simple or malignant? Does it originate from the iliac fossa, or has it extended from a neighboring organ? Three groups of swellings are considered, (1) those which arise from the iliac fossa, (2) those which extend into it from below, (3) those which invade it from above. In the first class are (1) fæcal accumulations, (2) enterospasm, (3) intussusception, (4) glandular enlargement, (5) ureteral distension, (6) new growths of the large bowel, (7) inflammatory swellings, (8) hyperplastic tuberculosis of the cæcum, (9) actinomycosis. In the second class are (1) pyosalpinx, (2) hæmatocele of the broad ligament, (3) ovarian tumors. In the third class are (1) enlargements of the gall bladder, (2) movable kidney, (3) hydronephrosis, pyonephrosis, and growths of the kidney, (4) malignant disease of the colon or sigmoid flexure.

3. The Surgical Treatment of the Incompletely Descended Testis. — Rawling observes that when this condition applies to one organ the condition should be watched until the seventh year of life, after which an operation should be performed if descent has not occurred. The cremasteric fibres and other restraining bands having been exposed and divided, and the peritoneal process removed. the possibility of scrotal placement can be determined. If this should seem impossible, the testis should be removed. In cases of double incomplete descent, double abdominal replacement has been advocated, the hernial protrusion being thus cured and the canal closed. The author dissents from this view for the following reasons: .1. The abdominally replaced organs will almost certainly lose their spermatogenetic power. 2. The inguinal, pubic, and puboscrotal organs will retain spermatogenetic power in about half the cases until the age of thirty to forty, the inguinal testis retaining this power longer than the pubic, or high, puboscrotal varieties. Operation is therefore advised prior to puberty, the canal being exposed, the testis delivered, and the hernia cured. If this course seems inadvisable, it is better to allow the testes to remain in the inguinal

4. Some Experiments in the Treatment and Prevention of Infection in Enteric Fever.—Gordon gives the following summary: 1. Medical Izal oil is an efficient germicide in vitro for bacilli of the colityphoid group. 2. It can be given in large doses, in emulsion, without ill effects, for a long period. 3. It does not disturb the appetite and is well tolerated after two or three doses. 4. It does not increase peristalsis and checks diarrhea. 5. It is diuretic and diaphoretic, and increases the elimination of toxines. 6. It causes disappearance of bacilli of the colityphoid group, and if given for a sufficient period

the organisms will not reappear. 7. This germicidal effect upon the urine does not follow the use of other antiseptics which are usually given in enteric fever. 8. In the author's experience mortality was diminished by this treatment, and the course of the disease was favorable, especially in the acute stage. 9. Favorable results occurred even in cases in which Izal oil was not given until the second week of the disease, and in a series from which all mild cases were eliminated.

5. A Review of Some Recent Work in Gynæcology.-Playfair reports the following results of Carmichael's experiments on rabbits: 1. The entire ovary of the rabbit may be transplanted successfully. 2. In eighty per cent. of the cases there is partial degeneration of the ovary. 3. The ovary may undergo either fibrous or cystic degeneration. 4. The Graafian follicles and ova persist and mature for several months after the grafting process was performed, but ultimately tend to become cystic. 5. The germinal epithelium persists in a small percentage of cases. The conclusions from these experiments with reference to the human subject are as follows: 1. It is unlikely that the entire human ovary can be grafted with success. 2. Part of the ovary may ovulate and perform its function of internal secretion. 3. Partial grafting will usually give the most satisfying results, especially when the cortical portion of the organ is employed for that

8. Major Operations in the Treatment of Puerperal Sepsis.—Taylor states that the operations proposed for this condition are hysterectomy, ligature of pelvic veins for thrombosis, and abdominal or vaginal section for puerperal peritonitis. As to hysterectomy, as Cumston says, there are no absolute clinical signs which will enable one to proceed with certainty. Most of the operations have resulted fatally; the exceptions are possibly those which would have recovered without operation. Ligature, excision, or removal of the contents of thrombosed pelvic veins was proposed by Sippel in 1894 and has been carried out by several operators. Sinclair's opinion is reasonable that abdominal section and complicated manipulation in the pelvis will seldom be justifiable. If anything is done it should be of a conservative nature like colpotomy. Abdominal or vaginal section for puerperal peritonitis has a more hopeful outlook. About half of the reported cases have resulted in recovery.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY
OF NEW YORK

Special Meeting for the Borough of Queens. Held in Long Island City, April 6, 1908. Dr. Nen. Orrin Firen in the Chair.

Personal Observations in Scarlet Fever.—This paper, by Dr. Charles G. Kerley, will be published.

Dr. R. E. VAN GIESON said that after an experience of over forty years the impression which was most prominent in his mind in regard to scarlet fever was that the disease varied very greatly in

severity and as regarded concomitant symptoms. Sometimes the epidemics were so mild that in many instances the parents, not recognizing the disease, thought it unnecessary to call in a physician for the slight illness observed. Consequently, the children were soon allowed to go about as usual, and it was only later, when they had dropsy from the scarlatinal nephritis, that medical attendance was summoned and the true nature of the affection made known. In other epidemics the type of the disease was fulminating and the mortality appalling. Thus, it had been his melancholy experience to see a whole village depopulated of its children, many of whom died of cerebral involvement before the eruption had appeared upon the skin. Fortunately, outbreaks of this extreme severity were rare. Sometimes the glandular complications constituted the prominent characteristic of the attack. So, as he looked back over the past forty years, the epidemics which he had met with were found to be all different in character.

Dr. Van Gieson then spoke of the method of preventing the spread of the disease which he was accustomed to use. By way of preface, he said that scarlet fever was not contagious in the beginning. The contagious period began with the appearance of desquamation. For many years it had been his practice to use inunction to prevent the dissemination of the epithelial scales, and for this purpose he ordinarily employed an ointment with I per cent. (sometimes 2 or 3 per cent.) of sulphur, and 1/5 per cent. of menthol, to each ounce of which was added 20 minims of oil of eucalyptus. rubbed over the body twice a day until all the desquamation had disappeared. Since he had adopted this plan he had noted less spread of the disease than formerly. The inunction was also very comforting to the patient, as Dr. Kerley had remarked. The latter was right, he thought, in stating that occasionally a second desquamation occurred. He would like to ask whether any recrudescence had been observed between the two desquamations in these cases. Personally, he did not believe that there could be a second desquamation unless after the first there was a secondary attack of the disease, and he had never seen a second desquamation except in cases where this had occurred. He could not agree with Dr. Kerley in his opinion of milk in children's febrile diseases. In his (Dr. Van Gieson's) opinion it was one of the most useful articles of diet in these cases. Of late, however, he had been giving unfermented grape juice to a considerable extent, and he had found it almost as valuable as milk. For the throat conditions he was accustomed to employ hydrogen peroxide and potassium permanganate. When the disease was very severe and there was much glandular complication, he had used antistreptococcic serum to a limited extent, and it had seemed to him that the patients had been benefited by it,

Dr. H. W. BERG said that four or five years ago, when Moser first put forth his antistreptococcus serum for scarlet fever, it had been employed in twenty cases at the Willard Parker Hospital, while at the same time twenty check cases were treated along the ordinary lines. No benefit, however, was observed from this manners. In Moser's serum

the streptococcus was taken from the blood of patients that had died of virulent scarlatina. Now, if one injected the antistreptococcic serum without the proper amount of complement, very little effect would be produced, as there was a direct arithmetical ratio between the two. Such a bacteriolytic serum violated the first logical essential for the production of an antiserum. The bacterial cause of scarlet fever was unknown, and while many of the complications were due to mixed infections with the pus organisms, the death rate in this disease was certainly not due wholly to the mixed infections. It was begging the question to inject a serum for the prevention of complications and leave the primary disease untreated. An important point in scarlet fever was the relation between the fever and the eruption. The toxicity governed the amount of pyrexia, and as a rule in this disease the temperature became resolved very gradually, and not by crisis, as in measles. If, therefore, the antistreptococcic serum was a true antiserum, under its use there should be observed an immediate drop in the temperature, or, at all events, a tendency to decline. Such was not the case, however, for under this treatment the fever resolved itself by lysis, not crisis, just as when it was not employed. If he had seen a recovery in every one of the twenty cases at the Willard Parker Hospital, and yet the temperature had remained unaffected at the end of twenty-four or forty-eight hours after the first injection, he would still have been of the opinion that the serum had not caused the cure. This was the reason why he was unwilling to use antistreptococcic serum in scarlet fever.

In reply to an inquiry as to the use of diphtheria antitoxine in scarlet fever Dr. Berg said that for some time past it had been the practice to administer an immunizing dose (500 or 1,000 units) of this antitoxine to all scarlet fever patients on their entrance into the Willard Parker Hospital. This was done simply as a matter of precaution. Unless diphtheria actually occurred as a complication, he did not believe it at all advisable to give large doses of antitoxine. The antitoxine not infrequently produced quite marked cutaneous eruptions, and it was not justifiable to add another complication when the skin was already overburdened, since this extra work imposed might prove too much for the already enfeebled powers of the patient.

Dr. Kerley, in reply to Dr. Van Gieson's question, said that he had not observed a recrudescence in the cases in which a second desquamation occurred. If a secondary attack of the disease took place, it must have been so slight as to escape observation. During the last few days, however, he had seen in consultation a remarkable case of typically marked scarlet fever in a patient who had had a previous attack of the same disease only in December last. There was an interval of but six or seven weeks between the two attacks. He had not personally seen the first of these, but, it was well authenticated, as it was observed by a practitioner of experience and recognized ability, and the Health Department had accepted the case as one of scarlet fever.

Dr. J. H. R. BARRA said it had occurred to him that a preliminary funnigation of the sick room

might be of service in preventing the spread of the disease. Such fumigation might be practised during the attack, the patient being temporarily removed and then returned to the room to remain until desquamation had ceased, when the final fumigation would be carried out as at present. In the complicated cases of scarlet fever there was apt to be present a mixed infection, with both the streptococcus and the staphylococcus. Such infection would not respond to diphtheria antitoxine, but if the Klebs-Löffler bacillus was found, the indication for its use was absolute.

In reply to a question as to the percentage of cases of diphtheria occurring in connection with scarlet fever, Dr. Berg said that at the Willard Parker Hospital, for the last four or five years, during which the plan of giving immunizing doses of antitoxine to all the patients on their entrance had been carried out, the percentage of diphtheria had been very much smaller than formerly. In his private practice diphtheria occurred in about ten per

cent. of the cases.

Dr. Kerley thought that in his practice it was observed in only about five per cent, of the cases.

The Diagnosis of Meningococcus Cerebrospinal' Meningitis from Other Types of Cerebrospinal Meningitis.—Dr. Henry W. Berg read this paper. In a general way, he said, the symptoms of cerebrospinal meningitis could be grouped under two classes, namely, those due to the affection of the cerebrospinal meninges and the brain, spinal cord, and nerve trunks, and, second, those due to the toxæmia and sepsis. It followed, therefore, that this disease must be distinguished, on the one hand, from other organic diseases of the cerebrospinal system, and, on the other, from toxic and septic conditions and diseases, particularly those of a febrile character. As to the latter, both meningococcus and other types of cerebrospinal meningitis had frequently to be distinguished from cases of infectious diseases ushered in by or exhibiting during their course cerebral and spinal symptoms due to toxæmia of the nerve centres, and not to meningitis. A second class of cases was that in which the patient suffering from an infectious disease had as a complication a real organic cerebrospinal meningitis, due either to the organism causing the primary infectious disease present or to a mixed infection with some other meningitis producing organism. Thirdly, it was important from a diagnostic, prognostic, and therapeutic point of view to distinguish from each other cases of organic cerebrospinal meningitis of varying bacterial pathogenesis. Finally, it was necessary to remember that the various organic diseases of the spinal cord and brain were frequently complicated by a partial or general cerebrospinal meningitis which might simulate epidemic cerebrospinal meningitis. It was obvious, then, that the diagnosis of meningococcus cerebrospinal meningitis resolved itself into the distinction of this disease (1) from pseudomeningeal symptom complex, and (2) from other types of cerebrospinal meningitis, whether of bacterial origin or occurring as complications of organic cerebrospinal lesions.

The essential symptoms necessary for a recognition of cerebrospinal meningitis in contradistinc-

tion to toxic pseudomeningitis were numerous, and a large proportion of them would be revealed by a careful examination in almost every case, whether acute or subacute, sporadic or epidemic. In enumerating these, he said that, of the symptoms due to the involvement of the spinal cord, the Kernig sign had in the cases he had seen proved the most useful and distinctive. It was obtained by placing the patient upon the back, flexing the thigh at right angles with the abdomen, and then extending the leg upon the thigh thus flexed. If Kernig's sign was to show itself, complete extension of the leg upon the thigh could not be accomplished. The patient, even when semicomatose, complained, and cried out long before the leg was brought into a line with the thigh, and the spasmodic resistance could not be overcome even by forcible effort. As the Kernig sign diminished, the prognosis improved. While this symptom was not limited to epidemic cerebrospinal meningitis, but was present in other forms of meningitis, Dr. Berg had never found it absent in any of the cases of this disease he had seen in the recent epidemic. A large number of the symptoms described were not observed until the later stages of the disease, while many of the earlier symptoms were duplicated in toxic pseudomeningeal conditions; but, fortunately, the bacteriological diagnosis of the disease was absolutely distinctive. For the purpose of bacterial diagnosis during life, the meningococcus must be sought for in the cerebrospinal fluid obtained by lumbar puncture. It could be demonstrated microscopically and by culture, and cultures made from fluid obtained early in the disease would give positive results in a very large proportion of cases. The characteristic diplococci were most apt to be found in fluid obtained during the acute stage or during an exacerbation. In a general way, the microscopic appearance of the fluid obtained by lumbar puncture yielded some indications as to the bacteriological character of the meningeal process. Thus a purulent, turbid fluid spoke for meningococcus meningitis, a clear one for a toxic pseudomeningitis, while a comparatively limpid fluid containing flocculi or fibrinous shreds or a slender white column in the centre of the tube, branching out at the top and bottom in a test tube half filled with the fluid, indicated tuberculous meningitis. Any diagnosis resting upon such gross appearances, however, was unreliable, and should be made certain by finding the bacteria by staining or culture. In conclusion, he stated that in almost all cases of cerebrospinal meningitis, as distinguished from toxic pseudomeningitis, the normal tension of the fluid in the subarachnoid space was increased, and the fluid issued through the trocar under increased pressure.

After reading his paper Dr. Berg spoke for a few moments on the recent Flexuer serum. This, he said, was injected directly into the spinal canal, where it came into contact with the cerebrospinal fluid. The ordinary dose was 25 e.c. which was administered after about 30 c.c. of this fluid had been withdrawn by lumbar puncture. His own experience with the serum was limited to a single case, that of an adult in his service at the Mount Sinai Hospital, but the result had been brilliantly success-

ful. After the third injection the cerebrospinal fluid, which in the beginning had been purulent, was found to be perfectly clear and absolutely sterile. Recovery rapidly followed; and the same good results had been obtained in other cases at the Mount Sinai Hospital. Here, he believed, was a true antiserum, because it produced immediate effects which could not be obtained in any other way, and Dr. Flexner was willing to furnish it to all who would give him the bacterial findings and accurate clinical data of cases of the disease.

Dr. Kerley said he was glad that Dr. Berg had emphasized so strongly the necessity of employing lumbar puncture for making the diagnosis. He had seen some cases which were so mild that the diagnosis could not have been cleared up without this, and others which a few years ago would have been diagnosticated as tuberculous meningitis. There was no doubt in his mind that the Flexner serum had "made good." In a case occurring in an infant, fourteen or fifteen months old, in which the fever had been very high for ten days the temperature fell to normal after the first injection, and remained down. In five days the cerebrospinal fluid was perfectly clear, and the patient made a perfect recovery.

In reply to an inquiry by Dr. W. G. Frey as to the therapeutic value of simple lumbar puncture, Dr. Berg said that in many of his cases in the recent epidemic he had used scarcely any other treatment, with the exception of the application of ice bags. The good effect it produced he believed was due to the relief of pressure which it afforded. In this procedure sufficient fluid should be removed to relieve the pressure, and in one obstinate case, which finally ended in recovery, it had had to be repeated no less than twenty-two times. From five to cight was the average number of repetitions in his cases. He regarded it as a remedial agent of great value.

Caution Required in Accepting X Ray Evidence.—Dr. A. ERNEST GALLANT reported the case of a lady who after a fall had a swelling on the upper part of the thigh which he believed to be probably a sarcoma of the femur. As it might possibly be due to a gumma, however, he placed the patient on antisyphilitic treatment, with a negative result. He then asked an x ray expert whether he could diagnosticate a sarcoma of the femur if this was present, and, receiving an affirmative reply, he had an x ray picture taken. In sending the plate (which was presented for inspection) to Dr. Gallant, the radiographist accompanied it with a note explaining that he had found the case to be one of fracture. Although the appearances exhibited did not seem to him very convincing, Dr. Gallant accepted this diagnosis and treated the limb accordingly. As the enlargement continued to increase, however, he obtained the patient's consent to get some material from the growth for examination, and, this having been pronounced by a pathologist to be sarcoma, he amputated the limb at the hip joint. The wound healed well, and there was no further trouble until some months afterward, about the patient complained of difficulty in urination. As welling was detected in the abdomen, and e an mation shower this to be due to a parovarian

cyst. The abdomen was opened, and the growth, which was located on the broad ligament, removed. It proved to be sarcomatous also.

Betters to the Editors.

PALMAR PROJECTION OF THE ULNA AFTER COLLES'S FRACTURE.

II JONES STREET, EAST, SAVANNAH, GA., August 12, 1908.

To the Editors:

In the issue of your journal for June 13th you have an editorial entitled Palmar Projection of the Ulna after Colles's Fracture, in which you call attention to a paper by Dr. Franklin C. Clark, of Providence, who has described two cases of this deformity and who writes of it as a rare sequel of this fracture, having seen but two cases in thirty years. This statement is very surprising to me, for this deformity has long been recognized as common in bad cases of this fracture, and the literature on the subject, and a very rich literature, too, fully describes the deformity and its very evident cause, the ruptured ligaments of the wrist joint, and principally the internal lateral ligament.

It was recognized and fully described long before the use of the x ray. Nélaton recognized its chief cause in the fracture of the styloid process of the ulna with the rupture of the internal lateral ligament. And since we have had the x ray the frequent break of the styloid process of the ulna in Colles's fracture has been noted by all workers in this field. I have myself fully described it in two papers in the *Medical Record:* Some Observations on Colles's Fracture by the Aid of the X Ray, for May 8, 1897, and A Case of Colles's Fracture Treated Prone on a Flat Splint, with Chief Regard to Ruptured Ligaments; for January 15, 1898.

I have seen many cases of this deformity more or less pronounced. It is the ruptured ligaments which make so difficult often the satisfactory treatment of this fracture. The reduction and good apposition of the broken radius is a comparatively simple thing, but we have less control over the ruptured ligaments.

I quote from my first paper: "By the rupture of the internal lateral ligament and the anterior and posterior radioulnar ligaments, and a displacement of the triangular fibrocartilage, the ulna slips toward the palmar surface of the wrist—probably under the influence of the strong anterior carpal ligamentsand under the same influence slips toward the radius, showing in the radiograph an overlapping of the two bones. . . . It seems also quite evident, as pointed out by Hamilton, that the slipping of the hand toward the radial side, producing the most prominent and unsightly deformity in Colles's fracture, is due to the stretching or rupture of the internal lateral ligament principally, aided by the rupture of the anterior and posterior radioulnar ligaments, and perhaps other ligaments in addition, in conjunction with the much stronger muscular pull on the radial side of the hand."

The chief points in the successful treatment of a

Colles's fracture are, first, to overcome the deformities caused by ruptured ligaments, and, second, to promptly control the inflammation and fibrous proliferation consequent upon the severe sprain and contusion of the wrist joint.

EUGENE R. CORSON.

** Our correspondent seems to have in mind displacements of the ulna observable at the outset, whereas Dr. Clark, as we interpreted his article, had reference to ulnar displacement coming on at a late period—as a sequela, not as a concomitant feature of the injury.

161 Benefit Street.

 $To\ the\ Editors;$ Providence, R. I., August 20, 1908.

Your very kind editorial comments on my article concerning some unusual results of Colles's fracture, which I communicated to the magazine edited by my old classmate, Dr. Hersey, I greatly appreciate, and feel that my labor has met with a reception that I did not expect to find. Your comments are perfectly just, and I cannot do otherwise than accept them. The malposition does not exist primarily unless there is an apparent dislocation, or a fracture of the styloid process, of the ulna. Whether this bone is dislocated or not, the result may be the same, although at first the dislocation was properly reduced. This was an error into which Dr. E. M. Moore fell. as he thought that all fractures of the lower end of the radius were accompanied by the dislocation, to a greater or less extent, of the companion ulna. That is not the generally accepted opinion. The point that I have endeavored to prove conforms exactly with your view of the case. I did not intend to overlook any important material in illustration of my subject or to steal anybody's "thunder." But I fail to see that Dr. Corson has demonstrated in his letter that the subject is widely known. It was never taught in the textbooks adopted by the various medical schools; they are all silent on this sequela of Colles's fracture, not an immediate occurrence. As to his treatment of this fracture with the prone splint, I am very happy to find any one else falling upon my way of thinking. It was only my wish to

pare my own views with those of others. I thank you kindly for forwarding me Dr. Corson's letter for examination previous to its publication. I think you have answered it sufficiently. think that the reputation of the New York Medical Journal is a satisfactory guaranty for a favorable reception of my article among the medical profession. I shall let it stand or fall on its own merits. I wrote it frankly, and as frankly gave it to the world. If there is any adverse criticism advanced in its regard (and thus far I have had none), let it come. If my effort does not have a positive, it may obtain a negative or posthumous fame. It is all the same to me. If I should be the means of drawing from his obscurity any one who will benefit the surgical world through any good intentions of mine, it is enough. I ask no more. My object has been ac-

bring up the subject more particularly and to com-

complished.

FRANKLIN C. CLARK.

P. S.—Since writing the foregoing I have carefully read Dr Corson's two articles, the first of

which I do not find so clearly expressed as could be desired. But truth compels me to say that he specifies the true cause of the deformity at whatsoever period occurring. He is one of the few who have drawn particular attention to the subject. But the cases which I cited were two extreme cases—one due to a very great injury, including a dislocation of the ulna; the other constituting one of the simplest and slightest cases I ever had. F. C. C.

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Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Linné's Dietetik. Pa Grundvalen af dels hans eget Originalutkast till Föreläsningar: Lachesis Naturalis Quæ Tradit Dietam Naturalem. Och dels Lärjungeanteckningar efter dess hans Föreläsningar: Collegium Diteteticum. Pa Uppdrag af Medicinska Fakulteten i Uppsala. Ordnad och utgifven af A. O. Lindfors. Upsala; Akademiska Bokhandeln (C. J. Lundström), 1907. Pp. 248.

The life of Linnæus as a botanist is well known. In every elementary historical sketch we encounter the story of how as a boy of five he followed his father about in his garden, repeating the botanical names of the plants, to be severely reprimanded if he asked twice for a forgotten name; but of Linæus as a physician we know little. In this country at least Heptoen alone has called to our minds the facts that he was a physician and an able one, and that he left works on medical subjects that were striking alike for their originality and profoundness.

As a result of the recent Linnæus Fest, the Upsala Faculty have issued a number of interesting works bearing on the many sided activities of one of their most brilliant predecessors.

In the Prolegomena of Vol. IV the author deals with health, life, death, youth, diet, nature, and the

structure of the human body.

The major part of the work discusses dietetics in a very modern manner, but one too detailed to be taken up here. To any one sufficiently familiar with Swedish the work will prove of much interest, historic as well as technical.

Insomnia and Nerve Strain. By Henry S. Upson, M. D., Professor of Diseases of the Nervous System in the Western Reserve University, etc. With Skiagraphic Illustrations. New York and London: G. P. Putnam's Sons, 1908. Pp. xiii-144. (Price, \$1.50.)

To damn this book with faint praise might be the easiest way to escape an unpleasant duty, but, inasmuch as the author holds a thesis, it seems advisable to see what manner of proof is forthcoming.

The author first shows a deplorable ignorance of what is meant by the psychoses and what is being done for the treatment of the insane. He assumes that patients with "mania and melancholia and dementia præcox," when once the diagnosis is made, are shut up in asylums and then nothing is done for them.

This may be the practice in certain communities, but the reviewer doubts it. Certainly no one who has any acquaintance with the State hospitals of New York, Massachusetts, or any other of our large

commonwealths, or one who has ever been within the psychiatric clinics of Munich, Berlin, Strassburg, Florence, etc., will feel like making such statements.

Dr. Upson supports the remarkable hypothesis that the ills to which the nervous system is prone are due to disorders of the teeth. He cites a case of presumably an infectious mental affection cured by extracting a tooth. The literature of psychiatry is full of cases in which relief from a suppurative focus has brought about the recovery of an infectious disorder of the mind. Yet, fortunately, we have had no books trying to prove that mental disease is due to pyosalpinx, pyonephrosis, appendicular inflammation, hepatic abscess, etc. Our knowledge of the infectious mental diseases began with Hipprocates, and the idea that maniacal states may be due to an infectious disease is thousands of years

The author then tries to explain, on the basis of Head's researches, how dental disorders, viewed as irritative disorders of the sensory system, may affect the remainder of the nerve mechanism generally. It is to be regretted that he misquotes Head in his superficial presentation and does not prove anything. The book impresses us as a medley of many words, few thoughts, and still fewer facts.

Diseases of the Nervous System. By H. Campbell Thomson, M. D. (Lond.), F. R. C. P., Physician to Out Patients at the Middlesex Hospital and Medical School. etc. With Eight Colored and Twelve Black and White Plates, and One Hundred and One Figures in the Text. Chicago: W. T. Keener & Co., 1908. Pp. xv-480.

To be able to prepare a short, accurate, and yet satisfactory manual of the diseases of the nervous system is no mean accomplishment, yet in the small book here in question this task has been well performed.

The book is conceived in a thoroughly modern spirit, is built up on the teachings of modern nerve anatomy and physiology, is well illustrated, and altogether is commendable. It is infinitely superior to a number of small manuals on the same subject which enjoy a certain amount of popularity in this

Medicinisches Literatur ingod Schriftsteller Lademeeum, 1997-1998. Herausgeber: H. S. Meert, Bibliograph Hamburg: Francke & Scheibe, 1998. Ph. 25, 648.
Mr. Albert — bibliographer he called himself has

undertaken to publish a Who's Who et in Medicine. This is not an easy task, and the autile for has absolutely failed to accomplish it. The foreface is written in three languages, German, Engolish, and written in three languages, German, Josephish, and French; and the text contains a great deal chair English, and such English! The reformers of our English spelling should make Mr. Albert and his prefiner of their society. honorary members of their society.

The book is divided into five parts. Part I comtains the list of medical writers, with short bios raphies and lists of their publications. The author says he has corresponded with the whole medicar world and received answers to his inquiries in fourteen languages; but we hardly think that there has ever appeared such an incomplete list, and we must admire the author's audacity in offering such book; he certainly shows no great knowledge of medical writers and their publications

Part II is intended to be an abbreviated medical Minerva, with a list of medical societies of America. Part III is an apology for a list of medical journals; and Part IV is a reprint of names of medical book publishers who have answered the author's circular letter. An alphabetical index is to be found in Part V.

Collectors of curiosities we would advise to purchase the book, but not a physician or medical writer. We never have seen a book which so little fulfilled what its title page promised.

The Development of Ophthalmology in America. 1800 to ne Development of Ophthalmology in America. 1800 to 1870. A Contribution to Ophthalmological History and Biography. An Address Delivered in Abstract before the Section in Ophthalmology of the American Medical As-sociation, June 4, 1907. Revised and Enlarged. Illus-trated by Selected Portraits and Cuts. By ALVIN A. Hubbell, M. D., Ph. D., Professor of Clinical Ophthal-mology in the University of Buffalo, etc. Chicago: W. T. Keener & Co., 1908. Pp. 197. (Price, \$1.75.)

The history of medicine or of any one of its branches is interesting, and it is a great pleasure to read such a work as this which Dr. Hubbell has given us. It is not pretentious, it is rather an essay, and agrees with the following description given by the author in his preface: "It simply sketches the principal factors of its development—the men who have been most conspicuous in connection with it, and the institutions, in their beginnings, which have become perpetual fountains of ophthalmic knowledge and experience, as well as harbingers of relief to the suffering and the blind." To go a little more into detail, the scope of the work is shown by the headings of the chapters into which it is divided, the factors of development, biographical sketches of Dr. George Frick, the father of American ophthalmology, and of other early surgeons. American ophthalmological literature to 1850, special American contributions, the transition period from the ophthalmology of the physician and surgeon to the ophthalmology of the specialist, the pioneer specialists, the rapid changes after 1850. other factors of advancement, and the new American ophthalmology. We certainly hope that the author will be so gratified by the reception accorded to this work that he will do as he intimates, and soon furnish us with another volume comprising the American ophthalmology from 1870 down to the present time.

BOOKS, PAMPHLETS, ETC., RECEIVED

Medical Greek. Collection of Papers on Medical Onomatology and a Grammatical Guide to Learn Modern Greek. By Achilles Rose. New York: Peri Hellados Publication Office, 1908. Pp. 262-y.

Office, 1908. Pp. 262-v.
Estimation of the Renal Function in Urinary Surgery.
By J. W. Thomson Walker, M. B., C. M. (Edin.), F. R.
C. S., Hunterian Professor of Surgery and Pathology,
Royal College of Surgeons of England (1907); Surgeon in
Charge of Out Patients at the Northwest London Hospital
and Hampstead General Hospital, etc. With Two Colored
and Seven Black and White Plates, Thirty-four Figures in
the Text, and Thirty-two Charts. London, Paris, New
York, Toronto, and Melbourne: Cassell & Co., Limited,
1908. Pp. xiv-273.
The Extra Pharmacopecia of Martindale and Westcott,
Revised by W. Harrison Martindale, Ph. D., F. C. S., and
W. Wynn Westcott, M. B. (Lond.), D. P. H., H. M.'s Coroner for Northeast London. Thirteenth Edition. London:
H. K. Lewis, 1908. Pp. xl 1164.
Archives of the Middlesex Hospital. Volume XII.
Comprising Clinical Papers and Contributions isom the

Climed and Pathological Laboratories, London; Macmillan & Co., Limited; New York; The Macmillan Company, 1908. Pp. 63.

Cataract Extraction, Being a Series of Papers with Discussion and Comments Read before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908.

Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M. D., Formerly Adjunct Professor of Ophthalmology, New York Polyclinic; Instructor in Ophthalmology, Cornell University Medical College, etc. New York: William Wood & Co., 1908. Pp. ix-169. (Price, \$2.)

Archives of the Middlesex Hospital. Volume XIII. Seventh Report from the Cancer Research Laboratories. Edited for the Cancer Investigation Committee, by W. S. Lazarus-Barlow. M. D., F. R. C. P., Director of the Cancer Laboratories; Foreign Member of the German Committee for the Investigation of Cancer, etc. London: Macmillan & Co., Limited; New York: The Macmillan Company, 1908. Pp. 200

1908. Pp. 208

Pulmonary Tuberculosis and Its Complications, with Special Reference to Diagnosis and Treatment. For Gen-eral Practitioners and Students. By Sherman G. Bonney, A. M., M. D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver, Visiting Physician to St. Luke's Hospital, etc. With 189 Original Illustrations. Including Twenty in Col-

With 180 Original Illustrations. Including Twenty in Colors, and Sixty X Ray Photographs. Philadelphia and London: W. B. Saunders Company, 1908. Pp. vi-778.

La Cura della tisi polmonare mediante il pneumotorace artificiale. Dott. Antonio Pisani. Società Editrice Libraria: Milano, 1908. Pp. 23.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson. M. D., Professor of Dermatology, College of Physicians and Surgeons, New York; Consulting Dermatologist to the Presbyterian Hospital, New York, and to the New York Infirmary for Women and Children, etc. With Ninety-nine Illustrations and Four Plates. Sixth Edition, Thoroughly Revised. New York and Philadelphia: Lea & Febiger, 1908. Pp. 737.

The Muscles of the Eye. By Lucien Howe, M. A., M. D. Professor of Ophthalmology, University of Buffalo, Member of the Royal College of Surgeons of England, etc. In Two Yolumes. Volume II, Pathology and Treatment. Illustrated. New York and London: G. P. Putnam's Sons, 1908. Pp. xvv. 468.

Pp xiv 468.

1008. Pp xiv 468.
Consumption. How to Prevent It and How to Live with It. Its Nature, Its Causes, Its Prevention, and the Mode of Life, Climate, Exercise, Food, Clothing Necessary for Its Cure. By N. S. Davis, A. M., M. D., Professor of Principles and Practice of Medicine, Northwestern University Medical School; Physician to Mercy and Wesley Hospitals, etc. Second Edition, Thoroughly Revised. Philadelphia: F. A. Davis Company, 1908. Pp. viii-168.
Pulsating Exophthalmos. Its Ætiology, Symptomatology, Pathogenesis, and Treatment—being an Essay Based upon an Analysis of Sixty-nine Histories of This Affection. By George E. de Schweinitz, M. D., Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M. D., Instructor in Ophthalmology in the University of Pennsylvania. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 124. (Price, cloth, \$2.)

Official Rems

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpow, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending August 21, 1908

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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of com-missioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 19, 1908:

Delgado, J. M., Acting Assistant Surgeon. Granted leave of absence for three days, from August 4, 1908, on ac-

of absence for three days, from August 4, 1908. on account of sickness.

FAUNTLEROY, C. M., Assistant Surgeon. Directed to proceed to the Marine Hospital at Mobile, Ala., for special temporary duty, upon completion of which to rejoin his station at New Orleans, La.

HOLT, J. M., Passed Assistant Surgeon. Granted leave of absence for sixteen days, from August 15, 1908.

KALLOCH, P. C., Surgeon. Directed to proceed to the Marine Hospital, Portland, Me., for special temporary duty, upon completion of which to rejoin his station at Portland. Me., Ouarantine Station.

Portland, Me., Quarantine Station.

Keiller, William, Acting Assistant Surgeon. Granted leave of absence for seven days, from August 7, 1908: granted leave of absence for twenty-three days, from August 13, 1908.

MAGRUDER, G. M., Surgeon. Granted leave of absence for seven days, from August 2, 1008, under paragraph 101. Service Regulations

Mason, W. C., Acting Assistant Surgeon. Granted leave of absence for seven days, from September 13, 1908.

OAKLEY, J. H., Passed Assistant Surgeon. Directed to assume temporary charge of the Marine Hospital at Port Townsend, Wash., during the absence of Surgeon W

G. Stimpson.

REIMER, H. B. C., Acting Assistant Surgeon. Granted leave of absence for six days, from August 10, 1908.

RICHARDSON, S. W., Pharmacist. Detailed to represent the service at the meeting of the American Pharmaceutical Association, to be held at Hot Springs, Ark., September 7 to 12, 1908, upon completion of which to rejoin his station at Buffalo, N. Y.

ROEIRIG, A. M., Pharmacist. Detailed to represent the service at the meeting of the American Pharmaceutical

service at the meeting of the American Pharmaceutical Association, to be held at Hot Springs, Ark., September 7 to 12, 1908, and directed to stop at the Bureau en route to Hot Springs; upon completion of which to

rejoin his station at Stapleton, N. Y.
Schereschewsky, J. W., Passed Assistant Surgeon.
Granted leave of absence for one month, from August

17, 1908.

SINCLAIR, A. N., Acting Assistant Surgeon. Granted leave of absence for twenty-five days, from August 12, 1908. STIMPSON, W. G., Surgeon. Directed to proceed to Tatoosh Island, Wash., for special temporary duty, upon completion of which to rejoin his station at Port Town-

pletion of which to rejoin his station at Fort Fownsend, Wash.

Vocel, C. W., Passed Assistant Surgeon. Directed to report to the Director of the Hygienic Laboratory, Washington, D. C., for temporary duty.

WATSON, HARVEY J., Acting Assistant Surgeon. Granted leave of absence for thirty days, from September I,

WILSON, A. G., Acting Assistant Surgeon. Granted leave of absence for seven days, from August 13, 1908.

Boards of medical officers were convened to meet on August 24, 1908, for the purpose of making a physical examination of applicants for the position of cadet in the Revenue Cutter Service, as follows:

Baltimore, Md.: Passed Assistant Surgeon J. T. Burkhalter, chairman; Acting Assistant Surgeon C. Hughes, recorder.

Hughes, recorder.

Boston, Mass.: Surgeon R. M. Woodward, chairman; Assistant Surgeon T. W. Salmon, recorder.

Chicago, Ill.: Surgeon C. B. Young, chairman; Assistant Surgeon C. E. Wood, recorder.

Detroit, Mich.: Surgeon Fairfax Irwin, chairman; Passed Assistant Surgeon M. J. White, recorder.

Galveston, Tex.: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon W. H. Gammon, recorder.

recorder.

Mobile, Ala.: Acting Assistant Surgeon J. O. Rush, chairman; Acting Assistant Surgeon C. S. Cater, recorder.

Xew York, N. Y.: Passed Assistant Surgeon J. A. Nydegger, chairman; Passed Assistant Surgeon C. H. Lavinder, recorder.

etr, recorder.

Philadelphia, Pa.: Surgeon J. M. Gassaway, chairman;
Acting Assistant Surgeon H. Horning, recorder.

Portland, Me.: Surgeon P. C. Kalloch, chairman; Acting
Assistant Surgeon A. F. Stuart, recorder.

San Francisco, Cal.: Surgeon H. W. Austin, chairman;

San Francisco, Cal.: Surgeon H. W. Austin, chairman; Passed Assitant Surgeon W. W. King, recorder, Seattle, Wash.: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, recorder, Washington, D. C.: Assistant Surgeon General J. M. Eager, chairman; Assistant Surgeon General J. W. Kerr, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the recek ending August 22, 1708

BARNEY, FRED M., First Lieutenant. Granted thirty days' leave of absence.

BRUNS, EARL H., First Lieutenant. Upon the expiration of present leave of absence will proceed to Fort Monroe,

Va., for station and duty.
CULLER, R. M., Captain. Relieved from duty at Fort Monroe, Va., and ordered to Fort Logan H. Roots, Ark., for tation and duty

LE WALD, LEON T., Captain. Granted twenty-five days' leave of absence

REASONER, M. A. First Lieutenant. Granted leave of absence for twenty-four days.

SHORTLIDGE, E. D., Captain. Granted fifteen days' leave of absence.

SNYDER, H. McC., First Lieutenant. Relieved from temporary duty at Fort Rosecrans, Cal., and ordered to return to San Francisco, Cal., and resume duty at the

Army General Hospital.

TEFFT, WILLIAM H., Captain. Having completed the duty for which he was ordered to Washington, D. C., will

return to station in Cuba.

TORNEY, GEORGE H., Colonel. Ordered to proceed at once from San Francisco, Cal., to Alascadero Ranch, Cal.. for duty in connection with laying out camp and sanitation of same.

WILSON, ELSWORTH, First Lieutenant. Relieved from duty at the Department Rifle Range, Cal., on completion of target practice, and ordered to Fort Rosecrans. Cal.,

for temporary duty.

WOODRUFF, CHARLES E., Major. Granted three months' leave of absence, to take effect on or about September 8, 1908.

The following first lieutenants were ordered to active duty in the Medical Reserve Corps service of the United States: Frank M. Wells, Daniel P. Card, M. H. Bowman, G. E. Chamberlain.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending August 22, 1908:

BISHOP, L. W. Passed Assistant Surgeon. Ordered to temporary duty at the Navy Recruiting Station, New York, N. Y. York, N.

DIEHL, O., Surgeon. Detached from the Navy Yard, Philadelphia, and ordered to the Charleston and to additional duty as fleet surgeon of the third squadron, Pacific Fleet.

Surgeon. M. F., GATES. Detached from the Charleston

and ordered to the Navy Yard, Philadelphia, Pa.
LANDO, M. E., Assistant Surgeon. Detached from the
Navy Recruiting Station, Minneapolis, Minn., and ordered to Washington, D. C., September 14, for examination for promotion, and then to await orders.

McDonnell, W. N., Passed Assistant Surgeon, Detached

from duty in connection with the Navy Rifle Team, Camp Perry, Ohio, and ordered to the Navy Recruiting Station, Minneapolis, Minn.

Births, Marriages, and Deaths.

Corruster.— In Plainfield, New Jersey, on Monday. August 10th, to Dr. Harold D. Corbusier and Mrs. Corbusier, a daughter.

Married.

BINGHAM-HEIZMANN.-In Buffalo, on Tuesday, August 18th, Dr. Ernest G. Bingham, United States Army, and Mis Laura Churchill Thompson Heizmann.

Cushing.—In Brookline, Massachusetts, on Friday. August 14th, Dr. Ira B. Cushing, aged sixty-two years.
Dunn.—In Oakland, California, on Thursday, August
13th, Dr. James P. H. Dunn, aged forty-five years.

Duvalt.—In Louisville, on Wednesday, August 12th, Dr. Henry Arthur Duvall, aged sixty-one years.
NICKERSON.—In Fort Collins, Colorado, on Wednesday, August 19th, Assistant Surgeon Dr. William N. Nickerson,

August 19th, Assistant Jungeon Dr. Whitain M. McKelson, United States Navy, retired.
PARISH.—In Maryland, New York, on Saturday, August 15th, Dr. Charles E. Parish, aged fifty-three years.
SMITH.—In Brooklyn, on Thursday, August 20th, Dr.

George H. Smith, aged sixty-four years.

SMITH.—In Durham, North Carolina, on Saturday,
August 15th, Dr. Julien A. Smith, aged fifty-three years. Wood In Boston, Massachusetts, on Friday, August 14th, Dr. Stephen V Wood

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Original Communications.

CANCER OF THE RECTUM.

A Study of One Hundred Consecutive Operations for Malignant Growth of the Rectum and Sigmoid.*

By JAMES P. TUTTLE, M. D., New York.

The large percentage which cancer of the rectum and sigmoid bears to cancer of the human body as a whole makes it a subject of deep interest to all physicians. The fact that, notwithstanding what has been done for these growths in other parts of the body by radium, x rays, Finsen lights, escharotic medicines, etc., nothing has ever cured a patient of cancer of the rectum or sigmoid except operative interference, makes these conditions peculiarly in-

teresting to the surgeon.

I shall not go into the literature, or bring before you a long chapter of statistics on the subject of cancer. You know too well its ravages, its rapid increase, and the futility of our attempts to eradicate it. We do not know its cause, and have no means to prevent it. Our last resort, for the present, is to cure it if possible, when it has once appeared. What are we accomplishing in this respect? Do the results of our present methods justify their continuance? Ought cancer of the rectum and sigmoid to be extirpated? If so, when and how? These are questions which occur to every one who operates in this line.

The experience of equally prominent surgeons differs so greatly that one cannot answer for the other. Experience, technique, good fortune in his cases-call it luck if you will, and environments, give one man a success which his more talented brother perhaps cannot approach. Each must. therefore, be guided by the results of his own work, as to whether he should continue, and if so whether he should pursue his present methods or adopt others. One may, however, be lulled into satisfaction with his own work by a few successful cases, the gratitude of patients, or the flattery of friends when the work does not justify it. It is well, therefore, for us to present, from time to time, our records to the public for critical analysis. I take this opportunity to bring before this body of American surgeons the histories and results of one hundred cases operated on for cancer of the rectum and sigmoid. The period comprised is June, 1892, to February, 1908. The total number operated on is 108; but the histories of eight were lost in the Polyclinic

*Read before the Section in Surgery of the American Medica Association, in Chicago, June, 1908.

Hospital fire, in 1896, and are not included in this presentation.

A brief résumé of the results is necessary to begin with. The total immediate deaths from one hundred operations has been thirteen, a mortality of thirteen per cent. The known recurrences which we presume will end or have already ended in death are twenty-four. The number of patients known to be living and free from the disease is forty-one; this leaves twenty-four unaccounted for, patients who have disappeared in our great metropolis, or who have gone broadcast over the world, who may or may not have had recurrences. They were all free from the disease up to the time of our last observation, from three months to five years after the

What are the conditions which have influenced these results and which being altered might have made them better? Age, sex, the period of the disease when the operation was performed, the preparation of the patient, the pathological nature of the disease, the site and extent of the tumor, the parts involved, the character and technique of the operation done, the disposition of the intestinal ends, and the after care of the patient.

What are the conditions which justify or condemn our procedures? The immediate mortality, the frequency and date of recurrence, and last, but most important of all, the health and comfort of the patient after operation. Let us study these in detail as exemplified in the cases presented.

CONDITIONS INFLUENCING RESULTS.

Age.—Old people in good health, as a rule, bear aseptic operations well. This is not true in long operations, where there are likely to follow kidney or liver affections; in bloody operations, because they do not remake blood as quickly as the young; and in operations followed by free and prolonged suppuration in which vital resistance and good recuperative powers are necessary to withstand the drain. The operations for cancer of the rectum and sigmoid comprise all of these contraindications, hence the high mortality among those over sixty years of age (twenty-eight per cent.). On the other hand, cancer removed from elderly people is not likely to return; in the fifteen patients above sixty years there are only two recurrences. chances of permanent cures are therefore better if the operation is survived. This is not borne out altogether by the table, for of the eight patients under thirty years who were operated upon there is not a single known recurrence. This must not be accepted too literally, however, for of these cases

five patients disappeared before the usual period of recurrence had arrived, they having been observed twenty-four, twelve, eighteen, twenty, and seven-

teen months respectively.

What appears to be established is the fact that thirty to forty years of age is the most unfavorable period for operation so far as mortality or recurrence is concerned. In this decade we find nineteen cases, with two deaths, eight recurrences, and five patients disappeared before two years had elapsed.

Total cases Deaths: Recurrences: Age period Age period 21 to 30 years 31 to 40 years 41 to 50 years 51 to 60 years 61 to 70 years 71 to 80 years

Our conclusions from these tables are that while the very old are more liable to die from the operation than the young people, the chance of perma-

nent recovery is better among them.

Sex.—The influence of sex upon cancer of the rectum is well known; the preponderance being in favor of males, and it is borne out by the present list of cases. There were sixty-four males and thirty-six females. No satisfactory explanation of this fact has ever been given, for the conditions which are supposed to produce cancer, such as produce traumatism of the bowels, are much more frequent in women than in men. The mortality in operations on the two sexes is not far apart, being 12.5 per cent. in men and 13.9 per cent. in women. The only distinction which can be made is that which has been observed—i. e., women bear the combined operation much better than men.

Period of existence of the tumor before operation.—The influence of this upon the results of operation, both immediate and remote, is most interesting; but, unfortunately, our records, or any other so far as I can find, give no satisfactory informa-tion concerning it. The periods during which the patient had suffered from rectal symptoms, so far as they knew, are summarized in the following table, which shows very little advantage of early over late discoveries. In fact, the table shows that the second highest mortality is among those whose symptoms had lasted the shortest time. In comparing these cases, however, we find that the majority of patients who have come under early observation had had either mild epithelioma at the margin of the anus, or very malignant rapidly progressing adenocarcinoma. In the first class the patients got well very quickly; in the second class the patients either died from the operation or had early recur-

21.4 per cent 6 6 per cent 14.3 per cent.

If we leave out those very early cases which bear a peculiar malignancy, it is clear that there is a gradual increase in mortality for every month's delay in the diagnosis; but rectal symptoms are not always cancer symptoms; and most of the patients who say that they have been suffering from rectal disease for one or two years have probably had malignant transformation a few months only; the gradual change from the benign to the malignant

has been imperceptible; the patient suddenly awakes to the fact that he is worse, and his old symptoms have changed into new and different ones. It is this insidiousness of attack, this imperceptible engrafting of the malignant upon the benign disease that makes internal cancer so dangerous. It is important, therefore, that the general practitioner and family physician should be on the alert for such developments, and should know and bear in mind all the symptoms which indicate a probability of the existence of this disease.

One asks what are the first symptoms of cancer of the rectum? There are no subjective symptoms peculiar to it. Is it a question of pain; there is none in the early stages unless the margin of the anus is involved. Does one look for blood and discharge? These are both late manifestations. Constipation, which is usually referred to as one of its first symptoms, is not evident until the growth has encroached upon the calibre of the gut to such an extent as to produce stricture. On the other hand, our records prove that constipation of various degrees of intensity is exhibited in over forty per cent. of the cases seen, for a greater or less number of years, before the active symptoms of cancer appeared. The question arises, therefore, may not constipation, the irritation of arrested hard fæcal matter, be the exciting cause of malignant invasion. This gives us one clue to early diagnosis; indicating the advisability of periodical examination of the rectum in constipated patients just as we do the urine in nephritic cases.

Diarrhœa, or, more properly speaking, a desire to go to stool more often than usual without passing anything, or only passing small shaped pieces of fæcal matter or mucus; the call to stool immediately on arising in the morning; the change from diarrhœa to constipation, and vice versa; the loss of weight; flatulence and indigestion associated with stool irregularity; each demands a rigorous local examination, and such an examination is the only

means of diagnosis.

Methods of diagnosticating cases without symptoms.—The means of diagnosis employed have been the finger, the specimen forceps, the pneumatic proctoscope, and the whole hand. Whenever the tumor can be touched by the finger no instrument is necessary to determine its malignancy if the examiner is experienced. When it is too high for this it may be reached by the proctoscope and specimen forceps, a piece being taken out for microscopical examination. One must not be too reliant upon the reports of such specimens, however. Three times in this series the author has received reports that the growths were benign, when examination of the entire tumor after removal showed unquestionable malignancy. All the cases of carcinoma of the sigmoid have been diagnosticated by the pneumatic sigmoidoscope; without the pneumatic attachment this is a dangerous instrument in such cases, but with it it is perfectly safe. It should always be used without an anæsthetic, and never pushed beyond the open calibre of the bowel.

The entire hand was introduced into the rectum for diagnosis in six of these cases, where acute flexures of the bowel rendered it impossible to introduce the sigmoidoscope. I have had no accidents or bad results from this procedure. But here the large handed surgeon, one who wears over a seven and three quarter glove, must desist from this procedure; happily the diagnosis can be made

in most cases without it.

The importance of high examination of the rectum in all cases where there are symptoms possibly indicating cancer is brought out by the fact that thirteen of my patients had been operated upon for hæmorrhoids and fistula within a short time before they were brought to me with cancer. The latter had been certainly present at the previous operation

in every case.

The pathological nature of the tumor for which the operation was done.-Adenocarcinoma comprises a very large percentage of the malignant tumors of the rectum. In our series we have epithelioma, four; sarcoma, six; malignant papilloma, two; scirrhus cancer, two; colloid cancer, two; adenocarcinoma, eighty-four. Of these various types there has not been a single immediate death except in those denominated adenocarcinoma; there were three recurrences in the six cases of sarcoma, death following in each instance; while there were twenty-one recurrences and thirteen deaths in the eighty-four cases of adenocarcinoma, making a mortality of 15.4 per cent., and a recurrence of thirty per cent. As to the mortality, I cannot say that the character of the tumor had a great deal to do with it; almost all our deaths have occurred from infection, or from intercurrent causes, over which the type of the tumor could have had no influence. As to recurrences, however, it has everything to do; the nearer the tumor approaches the epithelioma, in other words, the nearer it is to the margin of the anus, the more likely and sooner it is to recur after removal.

Our pathologist has, in a number of instances, described the tumors as malignant carcinoma, and in others as mild. By malignant he means the medullary type of growth, which is distinguished clinically by its soft, friable, easily puncturing characteristics; the harder and firmer the tumor is, the less malignant it is, and the less liable to return. A careful examination of the cases will show that those in which the tumors were dense and hard have usually resulted in permanent cures; while those in which they were soft and easily penetrable have more often resulted fatally or in early recur-

rences.

Colloid.—In our early studies we were taught to consider colloid degeneration as one of the marks of intense malignancy; in the two instances in our series in which the tumors had undergone this change both of the patients have not only recovered, but have lived well beyond the average period of life after operation.

Sarcoma.—In the six cases of sarcoma, as might be expected, there were three (fifty per cent.) recurrences and metastasis; at the same time there were three patients who have made permanent and most satisfactory recoveries.

Character of neoplasm, its influence on death and

| | recurrence. | | |
|----------------|-------------|---------|--------------|
| Type | Recoveries: | Deaths: | Recurrences: |
| Epithelioma | 4 | 0 | 1) |
| Sarcoma | 6 | 0 | 3 |
| Papulloma | 2 | 0 | 0 |
| Scirrhus | 2 | 0 | O |
| Colloid | 2 | 0 | 11 |
| Adenocaremonia | 81 | 1.3 | 21 |
| | | | |

One might say it would be well to know the type of these tumors before operating, that he might give a more positive prognosis. While this would be very interesting, I am of the opinion that it would be unfortunate, because it would not influence us in the operation, and would only add to the discouragement of the patients in those cases where extreme malignancy was known in advance.

The site and extent of the tumor.—This is perhaps one of the most important topics in connection with these studies. As the following table will indicate, the percentage of death increases the higher the tumor ascends into the bowel. The percentage of recurrence is exactly the reverse. Of the eighten growths within two inches from the anal margin, there were ten recurrences, but not a single death; whereas, in the thirty-two growths above five inches there were seven deaths and only six recurrences. The explanation of this is rather clear to my own mind; it consists in the preponderance of lymphatics around the lower end of the anus, compared with those in the upper region; this experience is in keeping with that of all great surgeons who have operated along those lines.

Location of the tumor and its influence on death and recurrence.

| Site: | Recoveries: | Deaths: | Recurrences: |
|-----------------------|-----------------|---------|--------------|
| Under 1 men | | 0 | 6 |
| I to 2 inches | | 0 | 4 |
| 2 to 3 inches | | I | 2 |
| 3 to 4 inches | | I | 4 |
| 4 to 5 inches | 12 | 4 | 2 |
| 5 to 6 inches | 9 | 0 | 1 |
| 6 to 7 inches | 10 | 3 | 1 |
| Above 7 inches | I4 | 4 | 2 |
| In thirteen coops the | cita was not no | tod | |

Extent of the tumor.—So far as the extent of the tumor is concerned, the actual amount of gut involved by the growth is not so important as the amount which is to be excised in order to eradicate the glands of the mesentery which are involved, and also to obtain a healthy circulation in the proximal end. In the list presented there are two cases in which we have excised as much as sixteen and eighteen inches of the gut respectively, and yet made end to end union with excellent results. As Byron Robinson has well shown, it is not impossible to remove almost the entire sigmoid and bring the gut down almost to the anus, with perfect circulation, provided one is careful not to cut the trunk vessels in his dissection.

In the thirteen deaths which we have observed there has not been an unusual amount of the intestine removed in any instance. The one death which occurred by sloughing from improper circulation was due to the fact that the inferior mesenteric artery was torn off by too great tension during the operation, and the gut was not brought down sufficiently far to find a segment in which the circulation was maintained; this patient stood the operation well, was free from shock, and would undoubtedly have recovered had this precaution been taken. Barring the difference in shock, it is a matter of little moment whether one removes four or fourteen inches of the gut. There are no more satisfactory results in the one hundred cases than those in which I removed eighteen, sixteen, twelve, and ten inches, respectively.

The extent of the gut involved by the tumor is important only from this point of view, the larger

and more extensive the tumor the longer it has existed, and consequently the more likely will there be constitutional invasion; this latter, however, should be carefully observed and considered before a radical operation is advised; if one cannot satisfy his mind that there is not constitutional or liver invasion by a local examination, he should always do an exploratory laporotomy to clear this question before subjecting the patient to the shock of an operation that will do him no good if the liver and prævertebral glands are affected. This is one great advantage of the combined operation in high cancer, viz., that it gives one the opportunity to explore the glandular and hepatic organs before excising the growth.

Organs involved.—Leaving the sigmoid out of account there were sixteen cases in which other organs than the rectum were involved. Of these there were eight cases in which the prostate was involved in the process, either from extension of the growth or from inflammatory adhesions. Of this number two patients died from the operation, three from recurrences within a year, and three were cured. There were three cases in which the vagina was markedly involved, and one in which the uterus was also involved in the growth; of these patients one lived and two died from the operation. There were a number of cases in which the rectum was adherent to the bladder, ileum, and prostate by an inflammatory process, but these have not been taken into account.

Judging from this list, it would seem that cases in which secondary involvement of other pelvic organs has taken place furnish very unpromising results from operations, by any method whatever; that whenever the growth has existed long enough to pass from one organ to another, either by extension or metastasis, it will already have invaded the tissues to such an extent that no operation, no mat-

ter how radical, will eradicate it.

Preparation of the patient.—The proper preparation of the patient is the same whatever operation is performed. In our earlier cases we did not take so much time or care in preparation for the operation as in the later cases of the series, and we believe that the lowered mortality in the latter is more largely due to this than to improved skill in operating. Formerly, as will be seen by the histories, we operated in three or four days after the patient was first seen. More recently, however, we take a full week or more in the preparation of our patients. This preparation depends upon whether the stricture is permeable by fæcal matter, or not. If the calibre is wide chough to permit a free passage of semisolid fæcal matter, then there should never be any question as to a preliminary artificial anus. If the calibre is so contracted, however, that it would not permit of a thorough cleansing of the intestinal canal above the growth, one of two things has to be done; either the growth has to be curetted and the calibre widened, or, as in three instances only, a preliminary colostomy has to be done. I shall not describe the technique of either of these procedures, as they are familiar to all, but proceed with the ordinary preparation for operation.

First the patient is put upon a diet of eggs, milk, beef juice, rice, hominy, and white meat once a day; he is fed often in small quantities, and is given every morning before breakfast a full dose of Epsom salts, with twenty grains of sodium bicarbonate, enough to give him two or three liquid passages daily. If he is used to alcohol beverages he is given eggnog two or three times a day, and plenty of water to make up for the drastic purges. Morning and evening he is washed out with an enema of one to two quarts of a ten per cent. solution of hydrogen peroxide.

On the night before the operation the patient is placed on large doses of deodorized tincture of opium and camphor, in order to entirely control the bowels, and this is continued for eight days after the operation. The patient is always shaved as for a perineal and abdominal operation combined, for one can never tell when he may have to abandon one and adopt the other. On the morning of the operation the patient's rectum and sigmoid are washed out with a fifty per cent. solution of hydrogen peroxide, the rectal tube being left in to allow the escape of gases; just before the operation, after the patient has been anæsthetized, four to six ounces of fifteen volume peroxide is injected above the tumor if possible.

As to medications, from a bacteriological point of view, I have found nothing that thoroughly sterilizes the rectum; but from experience, the patients in which I have given full doses of beta naphthol have had less sepsis than the others. This preparatory treatment has been given in the last sixty cases, in which there have been six deaths, a mortality of ten per cent.; and it undoubtedly has had something to do with the improved results.

Character and technique of the operation done.— Next to the results obtained in this series of cases one's interest will centre, no doubt, upon the methods employed. The following table will exhibit these and the results:

| Operative methods: | | Immediate deaths: | Recurrences: | Mortality: |
|-----------------------|-----|----------------------|--------------|-------------------|
| Kraske's (including - | | | | |
| Kocher's) | | 2 | 2 | 33 per cent. |
| Bone flap | 25 | 4 | 6 | 16 per cent. |
| Perineal | 40 | 2 | 10 | s per cent. |
| Vaginal | .3 | - () | 1 | o per cent. |
| Combined operation. | . 8 | 3 | 0 | 37.5 per cent. |
| Abdominal | 9 | 1 | 4 | 11 per cent. |
| Local excision | 5 | 0 | 1 | o per cent. |
| Intrarectal resection | | f) | | o per cent. |
| Curettage and electro | | | | |
| contony | , | | | to front old to I |

As to the Kraske operation, including two of Kocher's, the six cases, with two deaths, thirty-three per cent. mortality, presents rather a discouraging aspect. The high mortality here is accidental, and does not afford a fair estimate of the method. The deaths were from avoidable causes and not attributable to the operative technique; with our present experience I do not believe either of those patients would have died.

The bone flap method, twenty-five cases, with a mortality of sixteen per cent., is more encouraging, and yet this is not what it should be in view of our present greater dexterity in operating and better technique in asepsis. It will compare favorably, however, with other statistics derived from parasacral operations; notwithstanding this it is still far

behind the results of the perineal method, in which we have forty cases with two deaths, a mortality of

five per cent.

The abdominal method comes next to the perineal, showing nine cases, with one death, a mortality of eleven per cent. These cases were all high up in the rectum or sigmoid, surrounded by few lymphatics, and involving no other organs, thus affording an opportunity for clean, aseptic resection.

The vaginal method presents a record of three cases without a death; the number is too small,

however, to prove much with regard to it.

The one case marked intrarectal resection has given an excellent result; but the patient gave me great anxiety, and I have never had the temerity to repeat it, even if I had had a favorable case.

Finally, we come to the combined operation; which, theoretically, is the ideal operation, and often the only one justified in the cases presented. Our experience has been small, but unfortunate, in its use. In all we have had eight cases, five women and three men, with a mortality of 37.5 per cent. Of the women, one died out of five, and of the men two out of three. This is discouraging; but it is a little better than the reports of some of our European confrères. Before condemning it, one must consider that the operations for which it is done are always those of great magnitude, cases which are inapproachable from below, and which cannot be removed entirely by the abdominal method.

The cause of death in every case has been infection, and it is interesting to note that while our first three patients died, our last five have all lived, showing, I hope, an improvement in our operative

measures.

The trend of my practice has been toward less and less bone cutting, and I have found that there are few, if any, cases in which the growth can be removed by the parasacral methods that it could not be done by the modern perineal method. More experience and dexterity are necessary in the latter than in the former, but when once learned it is easier, quicker, and attended by less shock and hæmorrhage than the parasacral procedures. a man with large hands this may not be the case, as the working space in the pelvis is quite small, especially in men; for this reason the operation of choice will sometimes depend upon the physical characteristics of the surgeon himself, rather than upon the patient's condition; and a tumor that can be easily removed by a man with small hands by the perineal route will have to be removed by the sacral route by one with large hands. The sooner the surgeon recognizes his limitations in this regard the better will be his results.

The technique of all these operations is more or less known. I shall describe the three, however, which appeal to me most, and in which I differ somewhat from other operators; asserting no priority in any of them, but simply a variation in

technique.

The bone flap, or Rehn-Rydigier operation.—Contrary to the method of its originators, I place the patient upon the left side, with his hips flexed upon the body, and a sandbag underneath the pelvis, thus raising the body into a semikneechest posture. The first step in this operation consists in closing the

anus with a suture, after having injected the peroxide high into the rectum. This is done to prevent the escape of intestinal contents, also to avoid the temptation to introduce the finger into the rectum during the operation, and thus cause infection. This having been done, an incision is made from a level of the third sacral foramen parallel to the border of the sacrum and coccyx, to a point one half inch back of the anus. The incision is carried quickly through all of the tissues into the cellular area back of the rectum; the hand is introduced through this incision and the rectum loosened from its attachments to the anterior surface of the sacrum; this wound and the hollow of the sacrum is then tightly packed with gauze. An incision across the posterior wall of the sacrum from the upper limits of the first is now made, and the sacrum cut through with a chisel, between the third and fourth foramina; as soon as this is done the bone flap is pulled out and dropped downward, being held in this position by a heavy forceps. The right lateral and middle sacral arteries, having been cut in this procedure, are either clamped or tied, and usually these are the only vessels that need ligation in this part of the operation. A wide access is thus furnished to the rectum and its surrounding parts. The operator at once proceeds to dissect his way around the rectum and enters the peritoneal cavity as soon as possible. This being done the lateral supports of the rectum are severed: the mesorectum is loosened from the sacrum by a clean incision of the peritoneal attachments on either side. The cellular tissue between the folds is peeled off from the bone with the fingers, and thus the main vessels, or hæmorrhoidal arteries are not wounded; the tumor can now be drawn down as far as is necessary. Having completed the intraabdominal dissection one closes the peritoneal cavity before opening the rectum, by sutures attaching it to the circumference of the gut itself. The gut is then clamped off above the tumor by two strong clamps and cut between with a Paquelin cautery; the lower end is then pulled downward and loosed from its attachments to the prostate, urethra, and surrounding tissues, the dissection being made from above downward. The purse string suture at the anus is now cut loose, and the contents of the bowel evacuated, the upper wound having been packed off before this is done; the gut is now cut off well below the tumor, and if it is within one and one half inches of the anus, the latter is everted by forceps carried through the anus from above, the proximal end is invaginated through this and sutured to the everted edge of the distal end outside of the anus; if it is above one and one half inches end to end union is employed; the upper and lower ends are brought into apposition and sutured with through and through sutures, and afterward with a row of Lembert sutures; this being done, a large drainage tube is passed up through the sutured juncture. The sacral cavity is packed loosely with gauze. The boneflap is replaced, and the bone sutured with silver wire or catgut through the peri-

If the gut comes down easily and the circulation is good it is better to adopt the Hochenegg procedure, dissecting the mucous membrane from the anal canal and invaginating the sigmoid through this opening and suturing it to the margin of the skin. In one hundred cases there were twenty-two resections with end to end sutures; there were only four instances in which there was not fæcal leakage into the wound, ulceration, and obdurate fistula; it is true that these fistulas are of no great inconvenience, and they usually heal spontaneously, but are they necessary?

The perineal operation.—The patient having been prepared, is placed in the lithotomy position, with the hips elevated above the head. After injecting peroxide into the rectum, a small circle of mucocutaneous tissue is dissected up around the anus and tied with silk ligature, thus closing the rectum entirely, so that the fæces cannot escape, and the finger cannot be introduced. The end of this circle is burnt with pure carbolic acid or the actual cautery in order to completely disinfect it. The sphincter muscles are then dissected loose, and split anteriorily as far as the perineal body and posteriorly two or three inches back of the tip of the coccyx on the right. The posterior incision having opened the retrorectal cellular space, the finger is introduced and the rectum is loosened by blunt dissection above the levator ani muscles on either side; the gut is also separated from its attachment to the sacrum in the same manner, and these spaces filled in with gauze; the finger is now introduced above the levator ani muscle, and this is cut loose from the rectum from behind forward on either side. The gut is thus practically dissected out except for its attachments to the prostate and bladder or to the vagina in front. Before the dissection is begun in this area one should introduce a full sized sound into the male urethra and bladder, so that he may be guided in his approach to these vital organs; this having been done, the rectum is dissected loose and the peritoneal cavity entered. If the tumor is above the cul-de-sac as soon as this cavity is opened one incises the lateral rectal supports back to their attachments to the sacrum, and cuts the peritoneal portion of the mesorectum on either side, by a clean incision, as high up as is necessary to bring the gut down and ablate the tumor. When the lateral folds of the mesorectum have been cut and the gut is still held above, one should avoid exercising too much traction upon it lest he should tear the blood vessels, which are its chief support. It is better to find the retracting band, clamp it with two clamps, and cut between them than to exercise force in dragging down the rectum. By careful manipulation one can ordinarily bring down from eight to ten inches, or more, of the gut, which is usually sufficient to extirpate the tumor and bring healthy gut down to the anus.

Having loosened the gut sufficiently to eradicate the tumor, one should close up the peritoneum by sutures, attaching it to the circumference of the rectum; the musculature of the rectum and anus should then be sutured by layers to the peritoneal surface of the gut, entirely closing in all dead space in the perinæum anterior to the gut. The gut is then amputated outside of the wound, its walls being cut through little by little and its mucous membrane sutured to the margin of the skin. This being completed, the sphincter is brought together anteriorly and posteriorly; if there is considerable

oozing the retrorectal space is packed with sterile gauze, through which a drainage tube is run to keep it moist. If there is not much oozing, I have found it a good plan to carry two or three silkworm sutures through the mesentery and muscular wall of the gut, as high up as possible and embracing about one third of its circumference; the loose ends are then carried out on either side of the sacrum and tied over a roll of gauze. By this means we close up the dead space posterior to the rectum, thus hastening healing and also introduce guy ropes, which hold the gut down and prevent traction on the anal sutures. A Lynch tube is introduced to allow the escape of gases and hold the parts in apposition. The dressings are held by adhesive straps, rather than by a T bandage, which so often slips and disarranges the pads.

Combined operation.—The combined operation consists in loosening the gut from its attachments within the abdomen, closing the perineal floor, and removing the growth by either the sacral or perineal method after the abdomen is closed. technique which we have recently employed is to put the patient, having been prepared and shaved, in the Trendelenburg position at once; open the abdomen and pack off the small intestines from the pelvic cavity; the sigmoid is brought out of the abdominal wound, and the inferior mesenteric artery is found and ligated as low down and near the tumor as possible. The mesorectum or mesosigmoid is then cut through on either side; the peritoneal fold between the bladder and rectum is severed in front; and the gut and rectum are loosened up by blunt dissection down to the tip of the coccyx behind and the prostate in front. If the tumor is large and one can accomplish it, it is best to cut the gut off below the growth, between the two ligatures, and take it out through the abdominal wound, as it is sometimes difficult to get a large growth out through the perineal incision. If it is small one may do nothing further in the abdominal cavity than repair the peritoneal floor, close the abdominal wound, and remove the growth by the perineal or parasacral method. If the gut must be cut across it should be done by an electroangiotribe, which not only sterilizes the gut wall, but seals it up so as to prevent any escape of fæcal matter into the abdominal wound. The amount of gut that can be excised and yet the sigmoid brought down into the anus is remarkable. I have twice removed over sixteen and once twenty-two inches of the sigmoid and rectum, and yet restored the normal fæcal outlet.

Treatment of intestinal ends.—The question of how best to dispose of the intestinal ends in extirpation of the rectum has long been one of considerable discussion. In the abdominal and parasacral methods the operation usually resolves itself into a resection, with two open ends of the intestines to be dealt with. Various methods have been employed in the series of cases which I now present, with the following results: The end to end suture has been employed in twenty-two cases, with four primary unions, sixteen cases of leakage with fistula and two deaths. The fistulæ have all healed eventually, but some of them have required as much as six or even nine months to acomplish this re-

sult. The Hochenegg method has been employed seven times, with four unions, one fistula, and three deaths. The Maunsell method has been employed twice, with a slight stricture in both cases, no fistula or death. In five instances the Murphy button has been employed to unite the ends; in four of these cases there was a fistula, with eventual closure, and one death. Colorectostomy has been employed four times, with excellent results in every case, barring a stricture at the junction of the colon with the rectum in two instances, which was very easily relieved by cutting through with pressure forceps. In the forty cases in which the perineal method was employed and the upper end of the gut sutured into the anus we obtained primary union in only seven cases, there were two deaths, and healing by granulation in the other thirty-one cases; there were seven or eight instances in which there were suppuration and fistulous tracts around the end of the gut, requiring secondary operation.

The period of confinement in the hospital following the different methods is a matter of interest, but not of vital importance. The cases of end to end union were invariably detained from two to six weeks longer than those in which the gut was sutured to the anus. The ultimate condition of the patient, however, is of more consequence. In the cases of resection, with end to end union, including all colorectostomies, there were twenty-two patients with perfect continence, and seven patients with partial incontinence, none of which was very severe. Of the cases in which the gut was sutured to the margin of the anus there were sixteen patients with perfect continence, thirteen patients with mild incontinence, and thirteen patients with almost

complete incontinence.

It would appear from these figures, therefore, that although the resections were accompanied by a higher mortality and longer detention in the hospital than those of amputation, the final results of the former are more satisfactory in the majority of cases than those of the latter. The discrepancy between these figures and the entire number is accounted for by those in which sacral and artificial ani were made. All the patients in whom the sacral anus was employed suffered greatly from incontinence. In one instance the patient's discomfort was so great that I was induced to make an inguinal artificial anus, from which the patient was infected and died from peritonitis. In the cases in which the inguinal artificial anus was employed the modified Bailey operation was adopted, and the patients usually managed them with comparative comfort.

Conditions Which Justify or Condemn Our Procedures.

Ultimate results.—Our crucial question: "Do our results justify continuance of our present methods in the treatment of cancer of the lower bowel?" must finally be answered by our immediate mortality, and by the ultimate results in those who survive the operation. The question of recurrence is an important one; but we must consider the condition of the patients during the time they live after the operation, even though they eventually die from recurrence. When we consider the pathetic condi-

tion in which most of these patients consult us, and the sufferings which those undergo who are not operated upon, we must ask ourselves what is the result to those who are operated upon, not only with regard to the length of life afterward, but also with regard to their state of health and comfort, whether

they have recurrence or not.

Pain.—Relief of pain is the first thing to be considered; so far as the immediate relief is concerned, the operation has proved effectual in almost every instance up to the time of recurrence or death from intercurrent diseases. It is an unusual thing to have to administer opiates in any form, except to control the bowels after these operations. The patients are almost without exception immediately relieved of all their former pains. The suffering from the wounds themselves is very slight. In many instances the patients who are addicted to the use of morphine previous to the operation have entirely discontinued it immediately thereafter. In one instance the patient was using thirty-two grains of morphine a day when he entered the hospital, and in three weeks had discontinued its use entirely, and never resumed it up to the time of his death, seven years later.

Continence.—The question of control of the bowels contributes so much to the comfort or discomfort of the patient that it is well worth while considering. Continence is comparative, and I have made an arbitrary division, as follows, perfect, good, partial incontinence, complete incontinence. By perfect I mean the normal condition of control. By good, the condition in which the patient, under a state of excitement or strain, is unable to control gases or liquid fæces. By partial incontinence, the state in which the patient cannot control liquid fæces sufficiently long to reach a convenient place for defæcation. By complete incontinence, the state in which the patient's bowels move unconsciously and without any control whatever. The results of my operations, according to this division, are as follows: Perfect continence, thirty-one; good connence, twenty-eight; partial incontinence, fifteen; complete incontinence, thirteen.

State of general health.—When we come to consider the state of the patients' general health following these operations, we must recognize that many are in a debilitated condition before they come for operation, and recuperate very slowly; a few of them never recuperate at all, notwithstanding the growth is removed and there is no recurrence; they go on in an indifferent state of health for indefinite periods, and eventually die from intercurrent diseases. We have had two instances like this in

our one hundred cases.

Again we have made an arbitrary division of the cases into excellent, comfortable, temporary improvement, and not improved. Under the heading excellent are included those patients who have gained health, strength, and weight, are relieved from their pains and able to enjoy life in their ordinary ways. Among the comfortable are classed those whose pains are relieved, who never become robust, and yet are able to carry on their usual vocations. Under the temporarily improved are those who are relieved of their pain and gain for a short time, but who relapse and die from recur-

rence or general debility. The not improved class are those patients in whom the tumor was not en-

tirely eradicated.

Among the eighty-seven patients who survived the operation, we find noted in our histories fiftyeight in excellent health up to the time of our last observation, twenty comfortable, five temporarily relieved, and four unimproved. Among those put down in excellent health are several who had later recurrences, but enjoyed perfect health for one to ten years after operation. Between the time of the recurrence and the operation, however, they were well to all intents and purposes, and enjoyed life as much as if they had never had anything done. Most of those in the "comfortable" class, however, eventually had recurrences; those temporarily improved all had recurrences. It is satisfactory to note that of the one hundred cases at least fifty patients have regained health, and were perfectly well up to the time of our last observation.

Causes of death.—The causes of death seem to bear out the generally accepted opinion that sepsis is the one thing to be feared. In our list of cases, with thirteen deaths, we find five of these (Nos. 7, 19, 40, 82, and 86) due to infection; two to shock (Nos. 14 and 40); two to embolism (Nos. 1 and 100); one to proliferating ulcers of the stomach (No. 78); one to sloughing of the sigmoid, due to insufficient circulation (No. 26); one to pneumonia (No. 58), which might probably be classed among the infections; one to secondary hæmorrhage (No. 73), caused by too tight packing of the wound.

The question arises, how many of these deaths could have been avoided? The two from shock were in desperate, almost inoperable condition, when the procedure was undertaken; we operated upon the insistence of the patients that they should be given the one chance for life that operation af-Those from infection might have been forded. avoided if our technique were as faultless in practice as in theory. Those from the other causes, such as pneumonia and embolism, are beyond the

control of surgical measures.

From this analytical study one might say that five out of the thirteen deaths might possibly have been prevented; the other eight were beyond the control of the surgeon, and yet they may be looked upon more as coincidences than as a necessary sequence. In a condition like this, however, in which the system is so insidiously undermined one must recognize that he is likely to meet with an average number of accidental intercurrent affections, such as we find in this list; and the most that we can hope to do is to control to a greater and greater degree the deaths due from infection.

The treatment of recurrences. This is a topic worthy of much study, and yet one which is nowhere treated of in literature so far as I can find. Of the twenty-one recurrences, I have operated the second time upon six patients, and three or four times in two. In two of these cases the recurrence took place in ten and five years respectively; and the secondary operations have given six and five

years further exemption.

In the other four patients the recurrences all took place under eighteen months after extirpation, and I do not think my secondary operations did anything but hasten the end. In brief, my experience leads me to believe that recurrence in less than one year will not be benefited by further operation; but late recurrences may be successfully removed.

The length of life after extirpation.—Upon this one point many will base their estimate of the results of operation. To set any arbitrary period of exemption as proving a permanent cure is not justified by experience. There is no period at which cancer may not recur. I have seen one recur ten years after operation. Every year of exemption, however, is another year of life, and it is interesting to see what we have gained for our patients in this respect. The average patient with cancer of the rectum dies in about twelve months after its discovery, unless operated upon. In the twenty-six patients of our series, who have survived the operation three years or more, the average length of life is six and a third years, with many of them still living, a gain for them of five years or more. sides this there were nine who lived, or are still living, between two and three years after the operation; and twenty-one between one and two years after it.

As instances of long exemption there are still living: One, sixteen years and ten months; one, fifteen years and ten months; one, twelve years and ten months; one, eleven years and three months; one, eleven years and two months; one, ten years; one, nine years; three, eight years; four, seven years; seven, five years.

(To be continued.)

THE ESSENTIALS OF VOICE PRODUCTION.*

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Speech has been called articulated voice. Voice is the material of which speech is made. The first essential of speech production is adequate voice production.

I have ventured to define voice as a moving column of breath set in vibration by its own impact with the vocal bands and reinforced by its diffusion through the various resonance chambers into the surrounding atmosphere. The best methods, therefore, of setting the column of breath into vibratory motion and diffusing it through the resonance chambers into the surrounding atmosphere may be regarded as the essentials of voice production.

Two separate and distinct mechanisms are used in the production of voice, namely, the respiratory and phonatory mechanisms, and, not only must the different parts of each work in harmony but there must be also a complete coordination of the mechanisms themselves

The voice production for speech differs somewhat from the voice production for song. In the first place it differs subjectively. To the speaker the vocal effort is secondary to the articulatory effort, while to the singer the idea of vocality is paramount. The speaker is inclined to minimize the importance of voice production and the singer the

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importance of articulation. The former often uses too little voice and the latter too little articulation. This tendency of the speaker to neglect his voice production leads to serious difficulties. In fact the great developmental defect of speech, which we call stammering or stuttering, has been shown to be due in the majority of cases to inadequate voice production, so that stammering may be called hypophonia rather than hyperphonia a term that Prof. Scripture

has given to it in a recent article.

Moreover, the voice production for speech differs somewhat from that for song in still another respect. The voice for speech varies more frequently than the voice for song, and it requires for its production more numerous and more rapid adjustments of the mechanisms. The sustained voice of song is rarely used in speech although it may be approximated in the strongly oratorical and dramatic roles. A greater volume of voice may be required for song but more numerous changes are used in speech. In song the voice is sustained and voluminous, while in speech it is inflected and more irregularly accented and emphasized.

The difference is more marked perhaps in the use of the larger muscles of the respiratory mechanism. The diaphragm, for instance, in singing is held in strong contraction during a greater period of time and the respirations are more prolonged, while in speaking the diaphragm and other respiratory muscles are constantly changing with the varying degrees of inflection, accentuation and emphasis.

But speech is something more than voice production. It is the product of the combined coordinate action of the two vocal mechanisms with a third, namely, the articulatory mechanism. In the production of speech we have combinations and complexities of finely coordinated movements such as are required in the exercise of no other bodily function. Each of the mechanisms employed has its own delicately coordinated action, and for the finished product, the three mechanisms themselves must be so accurately coordinated that there shall be complete harmony of action. To add to the complexity, and perplexity oftentimes, of the act of speech production we have the fact that the coordinate action of each mechanism, as well as their combined action is largely involuntary and automatic.

This brings us to a consideration of the so called central mechanisms of speech as distinguished from the peripheral mechanisms. The central mechanisms are those situated in the brain and spinal cord, and their function is, to set in motion and to control the peripheral machinery of speech and to coordin-

ate its various parts.

The cerebral speech mechanisms are situated in the left hemisphere and they are designated as follows: the auditory centre, in which are stored the memories for spoken words; the visual centre, in which are stored memories for written and printed words; Broca's centre, in which are stored memories for motor speech impulses; and the graphic centre, in which are stored memories for the movements of the hand in writing. Of these four centres the first two have been called sensory and receptive, and the last two motor centres, although as we shall see later on there are good reasons for supposing that they are all sensory centres and that the motor

centres are situated in the bulb and spinal cord. The chief receptive avenue for speech is through

the hearing. It is through this sense that the child gets his first impressions of speech, and it follows that when the organs of hearing are defective, the development of speech will be correspondingly impaired, and when there is absolute deafness, there will be absolute dumbness, until the child learns through special training to substitute for the sense of hearing the sense of sight, and to some extent also the sense of touch.

But a child who is not absolutely deaf may be mute, because the auditory speech centre constitutes only a part of the general zone of hearing in the left hemisphere of the brain, and if only the speech centre is defective or undeveloped there will be deafness only for speech sounds, or word deafness as it is called, while other sounds are distinctly heard.

Moreover, no two individuals hear speech sounds exactly alike because no two brains are exactly alike, and for the same reason no two individuals develop exactly the same kind of word images or speech

labits.

Next in importance to the auditory speech centre and closely related to it, is the visual centre, the region of the brain in which are stored memories for written and printed words. This centre is situated in the angular and supramarginal convolutions, and it is connected by commissural fibres with the auditory centre and also with the two so called motor centres which I am about to describe.

The chief motor, or Broca's centre as it is called, is situated in the posterior portion of the third frontal convolution, and in it are stored memories for the various movements used in the production of speech. The graphic centre is supposed to be situated in the posterior extremity of the second left frontal convolution and in it are stored memories

for the movements used in writing.

The fact that Broca's centre shares with the auditory and visual centres the function of serving as a store house for sensory impressions, has led Bastian and others to conclude that it is not a motor centre at all but a sensory centre, and that the motor centres for spoken words are represented in the medulla oblongata. Similarly it is asserted that the graphic centre, being a storehouse for the memories of movements of the hand and arm in writing,

is also a sensory centre.

This disposition of the cerebral mechanisms of speech, placing the sensory centres in the cerebral cortex and the motor centres in the bulb and spinal cord, seems to be the more scientific one because it accords more fully with both the physiological and pathological phenomena of speech production. Moreover, it has long been known that the centres for the coordination of the muscles and mechanisms employed in speaking and writing are situated in the bulb and spinal cord and it is only reasonable to suppose that the motor centres of these mechanisms should be in the same region of the nervous system. Bastian also gives to these hitherto called motor centres names that are suggestive of their functions. To Broca's centre, he gives the name glossokinæsthetic centre, and to the graphic, cheirokinæsthetic centre.

As I have said, it is through the ear that one

receives his first impressions of speech, and it is in the auditory centre that memories for spoken words are stored. The first step in the production of speech is a revival of these word memories in the auditory centre. This is effected either from without, by afferent impulses coming through the auditory and other nerves of special sense, or from within, by a process of silent thinking. These revived memories are immediately transmitted through commissural fibres to the glossokinæsthetic centre, where they in turn arouse previously stored memories for movements employed in the production of speech. Simultaneously there may be revived also in the visual centre memories for the movements of the vocal and articulatory muscles as seen by the eye, and this centre is also connected by means of commissural fibres with the glossokinæsthetic as well as with the auditory centre.

Although it is in the auditory centre that the revival of word images primarily takes place in most people, it occasionally happens that visual images are the first to come into the consciousness, and less often perhaps the glossokinæsthetic images. To the three classes of individuals thus characterized, Charcot gives the names, auditifs, visuels, and moteurs.

In the revival of word images, an important mental faculty is required, namely, that of attention, and in their externalization by means of articulate speech, the faculty of volition is employed. The exact anatomical connection between the willing to do a certain act and the act itself has never been satisfactorily explained. We only know that when one wills to speak, for instance, the act follows as a natural consequence, unless it is inhibited by other more powerful nerve impulses.

The order of cerebral activities in the production of speech, therefore, is, first, the revival of word images in the auditory centre (and in some cases in the visual centre) by means of afferent impulses from without through the special senses, or by means of impulses from the higher intellectual centres from within the brain; second, a transmission of impulses from these revived images in the auditory and visual centres through commissural fibres to the glossokinæsthetic centre; and third, a revival of the kinæsthetic word images, which in turn incites to action the motor centres in the bulb.

A word as to the development of speech in young children may throw some light upon this interesting subject. The first cry of the infant is the beginning of speech development. It is entirely automatic and reflex in its action, and its immediate purpose seems to be to expand the lungs and aerate the blood. It is not expressive of pain, because there is as yet no susceptibility to pain, and there is no psychic element in it, because the brain is wholly undeveloped. The young infant does not even hear himself cry, but as he grows older the nerve tracts leading to the brain gradually develop myelin sheathes which give to them the power of conveying sensations to their respective end stations in the cortex, and the child begins to feel, to see, and to hear. The crying now gives place in a measure to other sounds such as babbling, crowing, mimic reading, and echolalia, all of which are largely automatic and reflex, but more or less expressive of states of feeling. When the auditory nerve has become

medullated the child begins to hear. He hears, for instance, the word Mama, and he may repeat it in a mimic way, but it means no more to him than any other sound until he has learned to associate it with the individual for whom it stands, at which time it becomes registered in a portion of the general auditory centre as a word image, and this forms the beginning of distinguishing of the auditory speech centre.

When the nerve tracts leading from the motor centres in the bulb to the Rolandic area of the brain become medullated, the sensations produced by the musculature of the peripheral organs employed in crying, babbling, prattling, etc., begin to make their impressions in a definite portion of the general, kinæsthetic area, which portion is destined soon to become the glossokinæsthetic centre. In a similar manner the visual word centre and the cheirokinæs-

thetic centre are developed.

Just prior to, and synchronously with, the development of these special speech centres, however, we have the development of the higher intellectual centres of the brain. The child begins to understand speech before he begins to make use of it in a voluntary manner, but it is only after he begins to make use of it that its full import dawns upon him, and his intellectual faculties become thoroughly aroused.

An important period in the child's development is that of the transition from the involuntary babbling and prattling of meaningless words to the voluntary use of intelligent speech. The child now begins to assume a conscious control of the mechanisms of speech, and this involves certain mental faculties hitherto almost wholly unused. It is true the child begins to think before he begins to speak, but his thoughts are very superficial and rudimentary. Thinking and speaking are so closely related and so interdependent that the one can scarcely be carried on without the other. "To think" says Max Müller "is to speak low, and to speak is to think aloud." However, the higher intellectual centres now take command, as it were, of the lower speech centres, and through them also of the peripheral mechanisms of speech, and actually train them into more or less healthful physiological activity. This task of training the speech centres is conducive also to the healthful activities in the intellectual centres, and thus they react beneficially the one upon the other, and the highest development of either is impossible without a corresponding development of the other. Defective speech, therefore, is naturally suggestive of defective mentality, and defective mentality is always accompanied by defective speech.

My purpose in presenting this paper has been not to herald any new or original theory but rather to give a brief résumé of the anatomy, physiology, and psychology of the mechanisms employed in the production of speech, and in summing up the essentials of speech production, therefore, I would say, first, that the mechanisms must be structurally normal and free from pathological encumbrances, such as dental, alveolar, and palatal irregularities, enlarged tonsils, nasal obstructions, and cerebral tumors; second, the various parts of the individual mechanisms must be accurately coordinated, and there must be a similar accurate coordination of the mechanisms themselves; and, third, this accuracy of vocal

and articulatory musculature must be largely automatic, and this in turn is brought about mainly through psychophysical development and training.

1627 WALNUT STREET.

TUBERCULIN AS AN ADJUNCT TO THE HOME TREATMENT OF PULMONARY TUBERCULOSIS.*

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The use of tuberculin in its various forms for the treatment of tuberculosis has been receiving so much attention in the last few years that it would almost seem that a definite opinion of its value should have been reached. The very great majority of the reports published upon this subject, however, have come from sanatoria and health resorts, where the patients reported have received also the usual hygienic dietetic treatment combined with the influence of a favorable climate. Moreover, the larger number of these patients have been in the early and more favorable stages. The fact that patients under such conditions usually do well without the use of tuberculin has led to considerable skepticism upon the part of many as to the real value of the higher percentage of good results reported from the use of tuberculin.

Although all of these reports agree in a very striking manner in showing a considerable advantage for the tuberculin treated patients in the results of the immediate treatment and in the stability of these results, it is nevertheless evident, that a much more severe and unimpeachable test of the value of this treatment would be the results obtained with cases treated at home under more or less unfavor-

able surroundings.

A few such reports have been published, but they are not entirely conclusive, and this present contribution is made in the hope of adding something to our knowledge of this aspect of the tuberculin question.

About four years ago, the writer, through the influence and under the supervision of Dr. E. L. Trudeau, became interested in the therapeutic use of tuberculin, and ever since that time has had constantly a certain number of cases under this treatment in New York.

Number of Cases.

During this time ninety-four such patients have been observed. Of these forty-eight were under treatment less than three months. As this is too short a time upon which to base any reliable conclusions, these cases are excluded, leaving forty-six patients who have been treated three months or more as a basis for this report. The average duration of treatment of these forty-six patients was six months.

The large number of patients treated less than three months is chiefly interesting to demonstrate the difficulty of keeping dispensary and hospital patients under continued observation for the length of time necessary for this form of treatment.

Of the forty-eight patients, thirty-six simply dis-

*Read before the American Climatological Association, in Boston, June 9 and 10, 1908.

appeared from observation; of the remaining twelve, five refused to continue, four became acutely ill, and three showed marked intolerance to tuberculin.

Conditions under which the Patients were Treated.

These forty-six patients were treated under the

following conditions:

I. At the Bellevue Tuberculosis Clinic, where the patients have been of the poorer classes, living in tenements, with no better care than the efforts of the visiting nurses, or the assistance that some chartable society could provide; twenty-one patients were treated here (45.7 per cent.).

2. In a tent pavilion on the Bellevue Hospital grounds, where the patients were under constant supervision, were well fed, their habits carefully regulated, and were practically in the open air all of the time. Only two patients were treated here (4.3)

per cent.).

3. At the Seton Hospital, which is situated at Spuyten Duyvil, in the borough of the Bronx, New York. There the patients are under the usual hospital régime, with no special diet, and were out of doors, but not under the strictest supervision, for a good share of the time. Nine patients were treated

at Seton (19.6 per cent.).

4. As private patients some were treated at my office. These patients consisted for the most part of cases which had been under observation for some time with no improvement, very often having returned uncured from health resorts, having been compelled for various reasons to come back to live either in or near the city. Such patients have usually had good home conditions, good food, and a very fair amount of the open air treatment, this depending, of course, upon the various individual circumstances. There are fourteen such patients in this series (30.4 per cent.).

A summary of the living conditions of all patients shows twenty-seven to have been living under conditions which might be called good, sixteen under fair,

and three under distinctly poor conditions.

Of all patients, fourteen (30.4 per cent.) were working and earning a livelihood during the course of treatment, and seven (15.2 per cent.) others were women who were performing their usual housewife duties, making a total of 45.6 per cent. of patients who were living an active life at that time, and leaving 54.6 per cent. of patients who were resting as a part of their treatment.

It will be noted, therefore, that the living conditions represented in the cases here reported are fairly typical of those under which tuberculosis is en-

countered in any large city.

Selection of Cases.

Three main principles have guided our selection of cases: I. No early or favorable cases for whom sanatorium or other climatic treatment was available were kept in New York. 2. No cases with fever were treated, with two exceptions. 3. Tuberculin treatment was urged only for patients who were not progressing favorably without it.

Class of Cases Treated.

As a result of these three principles the patients treated have been largely long standing advanced cases, who were gradually drifting into more or less chronic invalidism.

Only six cases were incipient (13 per cent.);

twenty-seven (58.7 per cent.) were moderately advanced, and thirteen (28.3 per cent.) were far advanced cases. The average duration of the disease before beginning treatment was 19.8 months.

Seventeen patients (36.9 per cent.) had had previous climatic treatment, and of these five had begun their tuberculin treatment before returning to New York. Thirty-four patients had no complicating conditions, eight had complications of a tuberculous nature, and four had nontuberculous complications. All but three had bacilli in their sputum.

It can hardly be said that this material, under the living conditions which have been described, is overfavorable for any kind of treatment, but it would seem that it should offer an excellent opportunity to judge of the actual value of the tuberculin treatment through the exclusion of many other factors.

Varieties of Tuberculin Used.

Three preparations of tuberculin have been used in this series of cases: I, Koch's original tuberculin (O. T.); 2, bacillus emulsion (B. E.); 3, Denys's bouillion filtré (B. F.).

The old tuberculin was used during the earlier part of the work, six patients in all, but has, in the last two or three years, been used very little.

Bacillus emulsion was used considerably at first, and was then largely discarded in favor of the bouillion filtré; but more recently, during the last few months, it has been used again considerably. Seven patients were treated by B. E., and four were treated partly by B. E. and partly by B. F.

The bouillion filtré has been used continuously during the last two years, and for one year was used almost exclusively, with a total of twenty-nine pa-

tients or sixty-three per cent. of all.

Experience with these preparations has led to the conclusion that there is really very little difference between them, either in their effects or in their method of action. This is particularly true of the bouillion filtré and the old tuberculin. The difference in the method of preparation of these two varieties of tuberculin would lead to the assumption that the old tuberculin was stronger. This, however, is not warranted by experience, and it would seem that these two preparations can be considered to be about equal in strength.

The bacillus emulsion acts somewhat differently from the other two in its liability to produce unexpected reactions. This, however, is probably often due to faulty emulsification and can easily be

obviated.

It has seemed, however, that in strength it can be compared, dose for dose, with the other two preparations, only when the dose is computed by volume, i. e., I c.c. of O. T. or B. F.=I c.c. of B. E., thus climinating the method of computation upon the basis of the solid substance contained in the emulsion.

I believe that bouillion filtré is better in patients who show an oversusceptibility to tuberculin, and it is therefore now used in all such patients and also in the few patients who have had chronic fever during the administration of tuberculin.

Dosage.

During the first two years the dosage employed was according to the plan recommended by Moeller and others, beginning with 0.00001 gramme or 0.0001 gramme, and increasing by doubling the dose at each injection at intervals of three days.

In the patients who stand this treatment well, the effects are apparently very beneficial, but there is a considerable number of patients who quickly become intolerant, and in whom reactions of greater or less severity occur. I feel sure that in some of these patients harm was done rather than good.

During the past two years the decimal system of solution advocated by Denys and Trudeau has been employed, beginning with a dose of 0.0000001 gramme, and progressing by two injections a week up to a maximum dose of 1.0 gramme. This plan has been found very satisfactory, excepting that it has been found necessary to diminish the first few doses of each higher dilution in order to avoid reactions.

One gramme has been looked upon as the maximum dose to be attained in any given case. This amount, however, is purely arbitrary, and in many cases it has seemed both undesirable and unnecessary to try to push the dosage up to that point.

Often it is better to make 0.1 gramme the maximum dose and to go higher only in those patients who tolerate these large doses well and in whom it seems desirable to obtain greater degree of immunity. In some patients 0.001 gramme is the maximum dose that can be attained without producing intolerance.

I have therefore come to believe that each patient is a law unto himself in this respect, and to consider each patient separately in deciding as to the maximum dose desirable. In a general way, however, I would put the limits of maximum dosage

from 0.01 gramme to 1.0 gramme.

In our patients twenty-two received a maximum dose of more than 0.001 gramme and twenty-four a maximum dose of less than that amount.

The time required to reach this dosage is at least six months, and is often a year or more. The time element in the treatment is probably just as important, if not more so, than the absolute dose of tuberculin administered. The average duration of treatment in our cases was six months.

Guides to Dosage.

We have adhered strictly to the general principle of avoiding as far as possible all constitutional reactions to the tuberculin.

The clinical method.— The so called clinical method of determining the proper progression of dosage has been the usual one employed, and with sufficient experience this method is very satisfactory.

Too great emphasis, however, cannot be placed upon the importance of watching closely for slight evidences of intolerance to tuberculin, as shown by slight malaise, loss of appetite, headache, moderate loss of weight, etc., even when no febrile reaction has been produced.

Increased cough and expectoration, pains in the chest, and even slight hæmoptyses are evidences of a focal reaction in the lungs, and must necessarily

be considered carefully. I do not feel, however, that such reactions if slight show the same tendency to intolerance as do the slight constitutional reactions, and it has often seemed as though a very slight focal reaction was beneficial. We are here treading, however, on very delicate ground, and the exercise of additional care is necessary in these cases, for, of course, any considerable focal reaction is not only undesirable, but may be even dangerous.

The local reaction at the point of injection should be considered, there usually being no disturbance beyond a slight sensitiveness for a few hours. Appearance of local pain, redness, or swelling of any considerable duration is, in our experience, an indication of an approach to the limit of tolerance, and should be so considered in estimating the proper

progression of dosage.

Patients with any tendency to constitutional reaction were given a rest from the treatment for several days or more, and then either the same dose repeated, or some fraction even as far down as o.I of the preceding dose given, depending entirely upon the severity and the duration of the reaction that had been produced.

In a general way a mild constitutional reaction protracted over several days is probably more serious than a sharper reaction, which quickly disappears. A new injection was never given until all signs of reaction have been absent for several days.

In over 2,200 injections given in this series of cases we produced fifty-one constitutional reactions in twenty-eight patients. Eighteen patients had no reaction at any time. Of the fifty-one reactions only eight were severe, twenty-nine were moderate, and

fourteen slight.

The opsonic index.—For several months Dr. Park and Dr. Bolduan, of the Health Department Research Laboratory, made systematic determination of the opsonic index in many of our cases under treatment with tuberculin. The results obtained were so absolutely contradictory and unreliable that it seemed to us all that it was impossible to rely in any way upon the opsonic index as a guide in the tuberculin treatment of pulmonary tuberculosis.

Arneth's neutrophile blood picture.—For more than a year a systematic study of the neutrophile leucocytes in the blood has been made at the Bellevue Clinic by Miss Margaret Reed, Instructor in Biology in Columbia University. This study has included patients suffering from all forms of pulmonary tuberculosis and especially those who have been under treatment with tuberculin. We have come to the conclusion that the distinctive determination of the nuclear forms found in the neutrophiles of the blood is a very valuable guide to the resistance of a patient to tuberculin and of the approach to a condition of oversusceptibility to this agent, and that it is therefore very helpful in conjunction with the clinical manifestations of the case. It is also very valuable in prognosis.

Results.

In the forty-six patients under consideration, the following results have been obtained: Four patients (8.7 per cent.) were apparently cured; eleven patients (23.9 per cent.) were arrested; nine patients (19.6 per cent.) were improved: eleven patients

(23.9 per cent.) were stationary; eleven patients (23.9 per cent.) were progressive.

It will thus be seen that twenty-four patients (52.2 per cent.) showed an improvement and twenty-two patients (47.8 per cent.) were unimproved.

A further analysis of these results shows that 83.3 per cent. of the incipient cases, 44.4 per cent. of the moderately advanced cases, and 53.8 per cent. of the far advanced cases improved. The higher percentage in incipient cases is to be expected, but the number of cases is so small that the results are suggestive rather than conclusive. That a larger percentage of the far advanced cases should be improved than of the moderately advanced, is not explained, but in any event that is not as noteworthy as is the fact that 47.5 per cent. of combined advanced and far advanced cases show improvement. 57.1 per cent. of the office patients improved, 42.8 per cent. of the clinic cases, 100 per cent. of the tent cases, and 55.5 per cent. of the Seton cases. As there were only two tent cases, the results there are of little value. That the dispensary cases should show the lowest percentage of improvement is undoubtedly due to the poorer living conditions of these patients.

The average duration of disease of the improved cases was 12.3 months, and of the unimproved cases was 29.7 months. This was undoubtedly a very appreciable factor in influencing the results of treatment.

The average duration of treatment was 6.4 months in the improved cases, and 5.1 months in the unimproved. This difference also probably exerted considerable influence upon the results.

Of the different varieties of tuberculin used, the O. T. shows the highest percentage of improvement, 83.3 per cent., but this was only in six cases; B. F. shows 51.7 per cent. of improved cases; B. E. 42.7 per cent., and combined B. E. and B. F. 25 per cent. This last method of combined treatment was only used when a patient was not doing well, so that the low percentage is not surprising. There seems to be little difference in results between B. F. and B. E., whatever there is being in favor of the former, and it would certainly appear that O. T. was at least as effective as either.

Of the patients who had had previous climatic treatment 52.9 per cent. improved, and 47.1 per cent. did not. This fact is interesting, but probably means little as almost all of these patients were very chronic cases.

Of the patients who worked during the tuberculin treatment, 42.8 per cent, were improved, and 57.2

per cent. were unimproved.

Of the patients who rested during the treatment 60 per cent. improved, and 40 per cent. did not. It is worthy of note, that so many of these patients were able to work, and still did well, although the advantages of rest are manifest from our figures, as might be anticipated.

The Present Condition of Treated Cases.

We have been able to ascertain the present condition of all of the patients in the series excepting three. Of the four apparently cured patients all are now well and working. Of the eleven arrested cases, nine patients are well, and of these, five are work-

ing, one is dead, and one is untraced. Of the nine improved cases, two patients are well and working, three are fairly well, two are dead, and two are untraced. Of the eleven stationary cases, one patient is now well, nine are fairly well, and of these five are working, one patient is doing badly. Of the eleven progressive cases, one patient is now fairly well and working, three are doing badly, and seven are dead.

It will thus be seen that of all the patients, sixteen (34.8 per cent.) are now known to be well, thirteen (28.4 per cent.) are fairly well, four (8.7 per cent.) are doing badly, ten (21.7 per cent.) are dead, and three (6.5 per cent.) are untraced. Seventeen per cent. of these patients are now working. Of the twenty-four patients which-showed improvement at the end of the tuberculin treatment, fifteen are well, three are fairly well, three are dead, and three are untraced.

Of the twenty-two patients who did not improve under treatment, one is now well, ten are fairly well, four are doing badly, and seven are dead.

Conclusions

We do not feel that even four years' experience is sufficient to warrant any absolute conclusions as to the therapeutic value of tuberculin. The results of any method of treatment in tuberculosis are influenced by innumerable factors which may very easily mislead the most conscientious observer. Statistics are probably of little real value under such circumstances, less so perhaps than the gradual accumulation of clinical impressions from continued study.

As far as statistics go it would seem that any form of treatment must have considerable efficacy which is able to show the improvement in condition, with such a degree of permanency in such a class of cases, and under such conditions as are here reported.

As to clinical impressions, our experience has included several patients in whom the results of the tuberculin appeared truly remarkable, in some others, there has been distinct disappointment especially in a few which seemed at first to do exceedingly well, and then relapsed later, just as is customary in tuberculosis, but which we would hope not to find when any degree of immunity had been established.

It cannot be too strongly emphasized that if good results are to be obtained by therapeutic use of tuberculin, the greatest patience and care must be exercised in every particular. The dilutions should be made only by some one who is skilled in such work. Any evidence of intolerance must be carefully noticed, and the progression of dosage correspondingly regulated; and lastly and perhaps most important the duration of treatment must be extended over a very considerable time, preferably from six months to a year.

The sum of our impressions and results lead us to the opinion that we have in tuberculin an active and useful aid in the treatment of pulmonary tuberculosis, which, while not truly specific, is probably a distinct step in that direction. We are, therefore, encouraged to continue its use in suitable cases, and shall do so until some better specific agent is available.

I wish to acknowledge my deep indebtedness to Dr. E. L. Trudeau for his continued and invaluable advice and encouragement in every step of this work, and through him to the Saranac Laboratory for the supply of tuberculin which has been generously placed at my disposal.

18 West Fifty-first Street.

TABULATED RESULTS OF FORTY-SIX CASES TREATED WITH TUBERCULIN.

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| ", parent'y ured 4 %7 | ~ | , | 0 | 2.7 mos. | 4 | 7. | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 3 | 1 | 0 |
| Arrested 1 23.9 Improved 9 19.6 | 1 | 4 | 5 | 25 Hors 12 2 9705 | | - | 2 | 6 | 0 | 4 | 5 | 4 | 1 | 1 A | 7 | 3 | I 0 |
| Stationary 11 23.9 | 1 0 | 8 | 2 | 37 mos. 22.4 mos. | 6 | 3 | 2 | 5 | 0 | 6 | 4 | 5 5 7 | 0 | 2 | 6 | 5 | 0 |
| | | | - | | - | - | | | | | _ | _ | | | | - | - |
| Totals 46 100 | 13 | 27 | 28.3 | (average) 19.8 mos. | 34 | 8 | 8.7 | 26.1 | 10.8 | 63.1 | 30 4 | 45.7 | 4 3 | 9 | 58.7 | 34.8 | 3 6. 5 |

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THE CONJUNCTIVAL TUBERCULIN TEST.*

By George Mannheimer, M. D., New York.

This test and this reaction ought to be called conjunctival test and conjunctival reaction. The term ophthalmoreaction is a misnomer, half Greek, half Latin, and besides it is not to the point. The reaction takes place on the conjunctiva, and not in the eye. The test should not be called Calmette test. Calmette is not the originator of it. Wolff-Eisner, of Berlin, first employed and described it. To him belongs the credit of having first used the conjunctiva for the diagnostic application of tuberculin. That was the new departure. Wolff-Eisner was led to it by his studies on hay fever, in which disease the conjunctiva is peculiarly sensitive to the toxines of certain pollen.

Tuberculin has been and is being applied in various ways for diagnostic purposes. The hypodermic method is Koch's original one, and is most widely used. But it has also been administered per os in solution or in keratin coated pills, per rectum as enema or suppository, by intracheal injection, by

inhalation, and by inunction into the unbroken skin. Lately the methods of applying it to small skin scarifications (von Pirquet) and to the conjunctival sac (Wolff-Eisner, Calmette) have come into extensive use. The literature on the subject is already very large. This testifies to the great interest these new reactions have aroused in medical circles. Physicians are becoming more and more impressed with the enormous frequency of tuberculosis and with the great importance of recognizing it early. They also know the shortcomings of physical diagnosis and the difficulties of arriving at a positive diagnosis in many cases, and therefore welcome any new method that bids fair to help along these lines.

Diagnostic injections of tuberculin have not become popular, although they are used now much more frequently than ten and fifteen years ago. The principal objections to them, from a purely practical standpoint, are: First, patients are made ill, or at least very uncomfortable, by the general fever reaction; second, the temperature has to be taken every two or three hours for several days before and after the injection; third, the test cannot be applied when

there is fever.

The conjunctival test obviates all these objections. It is simple, easy of application and observation: there is usually no general reaction; patients usually do not suffer from it; and the presence of fever is no hindrance.

A few words as to the technique. The lower lid is drawn down, while the patient is directed to look up; or it is pulled forward away from the bulb, and a drop of the tuberculin solution is dropped into the groove thus formed. Or the patient is directed to look downward, and the solution is dropped on the bulb; from there it flows down into the lower sac. The drop should not fall from a great height, but the dropper should not come in contact with the lid. In cold weather the dropper should be slightly warmed. The lid must be held for at least half a minute, to allow the drop to be distributed along the conjunctival sac. If these precautions are observed, the drop is not likely to be squeezed out at once by reflex contractions of the orbicularis muscle. patient should be warned not to wipe the eye, and not to touch the other eye. He should avoid exposure to wind, dust, and smoke as much as possible.

The symptoms of a reaction appear in from three to twelve hours in most cases, but may be delayed twenty-four to forty-eight hours. They are a scratchy feeling, lachrymation, redness, and swelling of the inner canthus, then of the conjunctiva of the lower lid, which may increase and include the entire conjunctiva, with œdema of the lids.

The reaction usually disappears within two, three, or four days, but may last a week. I have seen it last eighteen days. Patients are usually not inconvenienced, some not even with third degree reactions. Others complain of pain in the eye and head.

There are occasionally nasal symptoms, clogging up or increased secretion of the side of the nose corresponding to the instilled eye.

Very rarely general symptoms are observed, e. g., slight rise of temperature and malaise.

A physician, thirty-eight years of age, was treated for tuberculosis of the right apex when seventeen; he remained tuberculosis of the right apex when seventeen; he remained well up to three years ago; then he had a hæmoptysis and a left pleuritic effusion. He made a good recovery, and has continued in active practice until the present time. In November, 1907, he received a drop of tuberculin in his right eye, which did not react. Ten days later he received a second instillation in the left eye, and reacted markedly. While the conjunctivitis subsided, his left nostril closed up and later began to discharge, he felt grippy. coughed and expectorated a little, had pain in the left lower chest, the site of his former pleurisy, a morning temperature of 100° F., evening temperature of 100.6° F. This condition lasted for nine days. He states that after this incident he felt as if he had recovered from a severe illness, and altogether much better than for a long time previous. He thinks the inoculation benefited him.

Of course, in this case some of the tuberculin was absorbed into the general circulation, which is exceptional. This absorption takes place also in those rare cases in which a slight reaction occurs simultaneously in the uninstilled eye, provided, of course, that transmission by the patient's fingers can be ex-

A young girl in the Bedford Sanatorium received a drop A young girl in the Bettort Saintorium received a dioperate reaction on January 14th, at 7 p. m. She showed moderate reaction the next morning. On the 16th, while the conjunctivitis was on the wane, she complained of pains in the left side, shoulder, and back, and had an evening rise of 101.4° F. But menstruation had come on the previous night. She had had similar short rises before.

The case is therefore not unequivocal. Tuberculous women often have præmenstrual, menstrual, or postmenstrual fever. It is perhaps worth while investigating whether tuberculous women or suspects, who are known not to have these rises, get them when tuberculin is instilled just prior to menstrua-

Contraindications are any existing disease of the eyes, except errors of refraction, or any tendency thereto; or traces of previous disease; scrofulous children; hay fever; ordinary colds; perhaps also the administration of iodides. If we follow these rules, we probably will have no untoward effects.

A patient in the Bedford Sanatorium received a drop and had a very severe reaction. He had headache the whole second night after instillation. It was found later that he had had a conjunctivitis ten days previously. If this had been known the test would not have been made so shortly afterward.

^{*}Read before the Medical Society of the County of New York, May 25, 1908.

A few patients who were taking potassium iodide showed a reaction, although they presented no clinical evidences of tuberculosis. Since iodides produce conjunctival hyperæmia in some individuals, it is better to omit the test during their administration.

A number of cases have been reported in which more or less serious effects resulted from the installation. Phlyctamulæ are the most frequent, but generally the least serious, complications. They occur chiefly in children. But corneal infiltrations and ulcerations, and affections of the uveal tract, have been observed. A few bad cases occurred in this city. One is reported in the Archives of Ophthalmology, March, 1908:

A girl, nine years of age, had scrofulous superficial keratitis of the right eye. She received a drop of tuberculin into the left, apparently sound, eye. A severe local reaction followed, accompanied by a mild general one. Ten days later marginal corneal infiltrations appeared in the eye instilled, which slowly ulcerated and spread, but which are now healing after five months' duration. In this case the tuberculin should not have been used. I suppose the author would not try the experiment again in a similar

A man, fifty-two years of age, in one of our large hospitals, suffering from pulmonary tuberculosis, and a cervical Potts' disease, in poor general condition, received 2 mm. of a one per cent. precipitated tuberculin. With a severe local reaction, there developed corneal infiltration and a phlyctenula; no pain, no fever. Recovery was complete. No bacteriological examination of the conjunctival secretion was made. This ought to be done in all such cases, and would probably reveal the fact that most of these corneal complications are due to secondary infections with pneumococci or pus cocci.

These accidents may be prevented by treatment. We should treat all pronounced reactions the same way we treat any other severe conjunctivitis.

Sometimes the tuberculin is held responsible for effects which are post hoc, not propter hoc:

A trained nurse, twenty-four years of age, in apparently perfect health, submitted to the test on a Monday afternoon. The eye became red the same evening. Next day she did not feel well, but attended to her duties. The reaction was moderate. On Wednesday evening she took to her bed with a temperature of 102° F. She developed a typical coryza, sore throat, hoarseness, cough, and expectoration She was sick for a week.

This was to my mind a simple case of catarrhal grippe which had nothing to do with the tuberculin instillation. The latter was simply made during the incubation of this infection.

I dwell on the unpleasant sequelæ of the test to show that it is not harmless, but also that some of these sequelæ are preventable. In my experience of about 350 instillations, no harm resulted. I have seen no involvement of the eye proper. The few severe reactions which I have observed all passed off without mishap. They all occurred from the use of a one per cent. solution of precipitated tuberculin

Now, a few remarks as to the preparation: Theoretically it makes no difference what preparation of tuberculin we use, if it only contains soluble toxine. Wolff-Eisner and his followers use the old Koch's tuberculin in one, two, four, or five per cent dilusions, with normal salt or boric acid solution. Calmette thought the glycerin and beef salts contained in the T. O. could alone give rise to conjunctival irritation and inflammation. He therefore precipitated the T. O. with 95 per cent. alcohol, and washed the filtered sedment with 70 per cent. al

cohol, dried, and pulverized. He dissolved the powder in sterile normal salt solution to make one per cent. This whole procedure, which, by the way Koch had already employed to purify his tuberculin, is unnecessary for the purposes of the test. Besides, it makes it more expensive. The infinitesimally small amount of glycerin and salts contained in one drop of a one per cent., or even five per cent., solution of T. O. does not irritate the conjunctiva. Control tests with much stronger glycerin and salt solutions amply verify this. The T. P. (precipated tuberculin) is not a uniform preparation. It varies much, according to the method of manufacture. The relative strength of a one per cent. T. O. and a one per cent. T. P. is variously given as a 1 to 2, I to 3, or I to 7. The T. P. is probably too strong in one per cent. solutions. The two cases of corneal complications, and all my severe reactions, resulted from its use. There is a movement on foot in this country to have one uniform standard preparation of T. O. for all the tests, a one per cent. or two per cent. solution for the conjunctiva, a ten per cent. or twenty-five per cent. solution for the skin. Results can then be compared much better than heretofore.

It may be possible that some nontuberculous individuals react to these strong dilutions, whereas they would not react to the ordinary dosage to which a tuberculous person usually reacts. Still there is nothing to prove this, except the analogy of the hypodermatic test. Almost every one is supposed to react to the hypodermatic injection of 10 milligrammes or more of T. O.

Calmette used bovine tuberculin. This complicates matters slightly. I think it best, for the present, to use human tuberculin only for the conjunctival test. Detré's investigations on differential cutaneous reactions are highly suggestive and ought to be followed up.

Now, as to the theoretical explanation of the reaction: It is a reaction of immunity, and more especially of sensitization, of oversusceptibility. The tuberculin, which is a specific proteid of the tubercle bacillus, or at least which contains this specific proteid, when dropped into the eye, penetrates the epithelial layer, and is slowly broken up into its constituent parts by the connective tissue cells. In a person who is free from tuberculosis these cells have not been sensitized and the process of breaking up the tuberculin proteid is slow, and consequently there is no reaction. The specific proteid is broken up by the elaboration in the connective cells of a specific ferment. This makes the cells acted upon sensitive. When the second instillation is made into the same eye in an individual free from tuberculosis this ferment which is already formed as the result of the first instillation, acts rapidly, and the result is an inflammatory process. On the other hand, when one has tuberculosis, the tubercle bacilli have broken down in the body, the connective tissue cells of the eye, and possibly of every other part of the body, have already been sensitized, the ferment is present, and the first instillation gives the inflammatory process.

Again, in advanced tuberculosis there is no reac-

[&]quot;It is, perhaps, accessful to experiment with both kinds of tuber culm on the same orderedual some cases may react to boxine and my indimum, tubes often now by thereby by a cognized as boxin

tion, because the cells are continually kept in an exhausted condition from the tuberculin, which is constantly present in the blood of such an individual.

This explanation, which comes from no less an authority than V. C. Vaughan, of Ann Arbor, seems to explain most, if not all, of the phenomena, as we observe them in practice. The majority of tuberculous individuals, e. g., incipient and moderately advanced cases, react promptly. The majority of far advanced cases do not react. Miliary tuberculosis, tuberculous meningitis, which is a part of a generalized tuberculosis, and cachectic cases, do not usually react.

A child, two years old, with tuberculous meningitis, in the wards of Lebanon Hospital, presented a marked œdema of the upper lid, three days after instillation, but no conjunctival hyperæmia.

Eyes instilled for a second time react in about

seventy-five per cent. of all cases.

A second instillation into the same eye has, therefore, no diagnostic value. It may, perhaps, indicate whether the first instillation has been efficient as to dosage, preparation, and technique. This sensitization is known to last fifty-one days. It requires a few days to make its appearance.

A number of apparently nontuberculous persons

react.

Thus a positive result does not necessarily mean tuberculosis, and a negative result does not exclude it. We should explain to our patients that a positive result need not frighten them, nor a negative result

lull them into a sense of false security.

Some physicians have abandoned the test, on these grounds, as unreliable. It certainly is not a sure thing; but then we have no absolutely pathognomonic symptoms in medicine. None of these biological tests are absolute; they cannot be expected to be so. Every organism has a relative amount of immunity to all kinds of infections and intoxications. Normal serum has the power of neutralizing, to a certain extent, many different poisons.

Positive results have been obtained in convalescents from typhoid fever. These patients seem susceptible to all kinds of bacterial proteids. Cases of leprosy and syphilis have reacted. These individuals may have substances in their system which have the power to react in a manner similar to that exhibited

by a tuberculous individual.

But then, again, the subject of latent tuberculosis has to be considered. How many of those, clinically not tuberculous, but reacting, have latent tubercu-

losis?

Autopsies on persons dying from other diseases and not suspected of tuberculosis, but giving a positive conjunctival reaction during life, have not been as thorough as would be desirable in order to clear up these points. Nägeli found healed or active tuberculous foci in ninety-six per cent. of adults in a large city, dying from other causes, and not suspected of tuberculosis. His methods at the autopsy ought to serve as an example.

We have to distinguish between active and inactive latent lesions. Wolff-Eisner asserts that the cutaneous test reveals the latter, the conjunctival test the former. The two tests should therefore be

used together.

The results of the conjunctival test are usually

corroborated by a subsequent hypodermatic test. With each injection of tuberculin a former conjunctival reaction which may have long subsided is often rekindled. The eye may become red before the appearance of the general reaction, and even without it. A number of my patients have shown this phenomenon.

The nurse, whose history I have reported, had a cold state weeks after the first one, and with it her former conjunctival reaction reappeared, without her having again come in contact with tuberculin. She is apparently not tuberculous, but her mother died from phthisis, and she herself, through her work in a large dispensary, is constantly exposed to infection.

It might be worth while to test systematically the employees of tuberculosis dispensaries.

A number of my doubtful or suspicious cases, which reacted, have since been proved by other signs to be tuberculous:

A young, healthy looking woman, twenty-four years of age, of good family history, complained last December of pain in various joints, but principally in the right thigh and knee. The region of the hipjoint was tender. Pain and tenderness rapidly increased; no fever, no other signs. Antirheumatic treatment was without effect. The diagnosis lay between a tuberculous or gonorrheal coxitis, a neoplasm, or a neurosis. The conjunctival test was positive, even severe. Fixation of the hipjoint in plaster afforded immediate relief. On March 1st, 0.001 mg. T. O. was injected for therapeutic purposes, followed by a rise of temperature to 100.6° F. A slight cough, which had previously been present, increased. After three days the same small dose was injected. The temperature rose to 100.6° F. Since then patient had slight elevation of evening temperature, and her cough slightly increased. Physical examination, April 14th, showed changes of breathing and scanty râles in the right apex. Bacilli were found on May 16th for the first time. The patient had nursed a consumptive relative six months before.

This case shows the extreme sensitiveness of fresh infections to tuberculin.

A man, thirty-three years of age, was sent to me by a laryngologist, who found an ulceration in the interarytenoid space and on suspicion had the sputum examined, with positive findings. The patient had slight cough for eight weeks, his voice was husky and tired easily. My physical examination was entirely negative. The conjunctival test was negative. A second sputum examination by the same laboratory proved negative. The ulcer has healed in a remarkably short time. The laryngologist now thinks that it was probably catarrhal, and the first sputum examination possibly erroneous.

I have a few cases of diabetes and of pleuritic effusions where a positive conjunctival test was later corroborated by distinct clinical signs of tuberculosis.

I have obtained the greatest help from the reaction in doubtful or suspicious cases. Here a positive result serves as a valuable pointer. Wolff-Eisner and Stadelmann point out the great prognostic value of the test. They distinguish a normal, a faint and fleeting, and a prolonged or delayed reaction, and ascribe to each of these types prognostic significance.

If an incipient or moderately advanced case of pulmonary tuberculosis shows a faint, fleeting reaction, the chances are that the case is progressive. The disappearance of a previously marked reaction on a subsequent instillation into the other eye is probably a bad omen. The organism has lost one of its defensive agents—the power to react. My observations have not been sufficiently extensive or prolonged to prove this prognostic value.

A word as to the repetition of the test in the same

case. The same eye should not be used a second time, as mentioned before, but an instillation may be made into the other eye with the same or a stronger solution, after the lapse of a few days, if the first reaction was negative or doubtful. This second test has not quite the same diagnostic value as the first. As a matter of precaution, patients should be questioned before an instillation whether they ever had the test applied before.

Solutions of T. O. or T. P. should not be kept longer than a week. They even deteriorate in sealed capillary tubes in the course of a few months.

A positive reaction does not locate the disease.

Several children in a family had the grippe. They all recovered promptly except one, who continued to run down, have fever and cough. A consultant found diminished breathing over one lower lobe and in view of this history suggested the possibility of an acute tuberculosis. He advised a conjunctival test. A marked positive reaction occurred He then made a positive diagnosis of acute pulmonary tuberculosis. The child recovered within ten days. The child might have had a tuberculous focus somewhere, but the lung condition which prompted the test was apparently not tuberculous.

I know of this case from hearsay only.

All tuberculin tests are deficient in this respect, they can only give corroborative evidence; they form only one link in the diagnostic chain.

Now as to my observations. I have records of

350 tests in 260 people.

They were observed at the Mt. Sinai Hospital Dispensary; at the Bedford Sanatorium; at the Virginia Sanatorium for Consumptives; Ironville, Va., by Dr. Junger; at the Lebanon Hospital, and in private practice. I am indebted to my associates in these institutions for their assistance in recording these tests.

I experimented with different preparations: One third and one per cent. T. P. from the Saranac laboratory; one per cent. T. P. from the New York Health Board Laboratory; one quarter, one half, and one per cent. solutions of Parke, Davis Co. compressed tablets of T. P.; one per cent. and five per cent. dilutions of T. O. from the Alexander laboratories, Marietta, Pa. My observations are therefore not uniform and do not permit of statistical tabulation.

The results of most observers are favorable to the method. The application of the test in cattle has been very satisfactory and confirmed by the hypormic test.

My general impressions are: The conjunctival test has fulfilled all reasonable expectations. It is best with apparent discrepancies which we are yet unable to explain. It opens up many new and interesting questions. It will, of course, never take the place of a careful physical examination. It requires caution in its application and interpretation. It should be used judiciously so as not to bring it into discredit. It is important that we try to follow up our cases so that we ultimately get an insight into the causes of the failures of the method.

In conclusion, I shall unote the method of procedure, suggested by Dr. Baldwin, of Saranac Lake Sanatorium, for the diagnostic application of tuberculin: We should agree to use, say, simultaneous scarifications of ten per cent. and twenty-five per

cent, old tuberculin as the first test. If a reaction occurs to the ten per cent, use 0.5 per cent, in the eye for confirmation, except in children, within fortyeight hours, repeating in the other eye with two per cent, if desired in case of no reaction. Should a reaction occur only to the twenty-five per cent. skin test, confirm by one per cent. or two per cent. in the eye on the basis of Wolff-Eisner's findings that only sixteen per cent, of clinically nontuberculous persons react to the conjunctival test. If no reaction occurs to the skin test, omit the conjunctival test and proceed to the subcutaneous test if thought desirable. This scheme contemplates the abandonment of the subcutaneous test when reactions occur in the skin or eye, and both the conjunctival and subcutaneous test for children, because practically all the positive reactions in the skin and eye have been confirmed when controlled by the subcutaneous test. This procedure commends itself by its conservatism and

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THE CALMETTE REACTION AS A DIAGNOSTIC

AID.

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Since the introduction of the Calmette ophthalmic reaction about a year ago, opinion as to its value has been so varied that its use has been limited largely to those collecting cases for statistical purposes. Recently it has been flatly condemned by many leaders of medicine and abandoned after a fleeting trial. Inasmuch as it is not used at all in many large hospitals, the results of its employment, as a diagnostic aid purely, may prove of interest.

All the cases, eighty-three in number, were in the general medical service of Dr. W. Gilman Thompson, of Bellevue Hospital. Among the class of patients treated at Bellevue, or in any similar rapidly changing, cosmopolitan, charity service, definite and speedy diagnosis for purposes of segregation of the tuberculous is essential. Moreover, in such a service, history taking is extremely difficult. The value of reliable histories in suspected tuberculosis cannot be overestimated, but among the ignorant English speaking patients the yea or nay is dependent upon the internes' attitude and inclination. Among the foreign born of naturally inferior intellect, an attempt at intelligent consideration of answers translated by an untrustworthy interpreter is almost impossible. Here every additional aid to diagnosis is welcome.

Method of instillation.—The method of administration of the eye tuberculin is, I think, original. Instead of dropping the solution into the eye with a pipette or minim dropper, a platinum loop, about two millimetres in diameter, is used. The loop is sterilized in a flame, a loopful of the tuberculin solution taken from the bottle and gently touched to the inner canthus of the eye. The advantages of this procedure are the facility of sterilizing the loop over the minim dropper, the certainty that the tuberculin reached the canthus, and the small amount necessary to be used. The quantity, less than one

¹ c. . I takerour wash countrat be offered for all in

To Dr. Thompson I am indebted for the privilege of reporting

quarter of a minim of the three per cent. crude tuberculin solution supplied by the New York Board of Health, seems to be all that is necessary

for a distinctive reaction.

To this method we attribute the absence of violent reactions which have been so often recorded. There were but three cases of conjunctivitis sufficiently severe to require treatment. Curiously enough, all of these occurred in cases in which there was considerable doubt as to the tuberculous diagnosis. They all subsided promptly under ordinary cold boric acid compresses.

. The test was not employed in every or any case with the object of running up statistical evidence. It was tried probably in less than six per cent. of the total admissions to the service. But where tuberculosis appeared to be a factor in the disease picture, a test was ordered as routinely as a Widal might be tried in suspected typhoid or a needle inserted on sufficient signs of pleural effusion. However, where there was evidence of conjunctivitis, panus, or only one sound eye, the test was omitted, even though, in many instances, it might have proved of value.

The tuberculin used was a three per cent. solution of crude tuberculin supplied by the New York Board of Health. It keeps excellently without diminution in its potency for at least two months if stored in an ice box. Should the question of the potency of tuberculin arise, as occurred on two occasions after a series of consecutive negative reactions, it may be tested in hospital practice by instilling into the other eye of a patient who has previously given a positive result. The size of a loop and its corresponding content, within a millimetre, is immaterial, provided that the quantity is less than half a minim.

In this series of cases the judgment, where there was any question of reaction, was recorded as decided by the five members who constitute the house staff. In those few instances where there was a difference of opinion, the reaction was repeated in the other eye. It might also be added that the tests were all recorded immediately after instillation, as was other evidence for or against tuberculosis which appeared subsequently. In this manner the judgment of the reaction was not influenced by other tests. Almost all of the installations were made in the evening, inasmuch as experience soon showed that where the reaction was so slight as to disappear entirely in twelve hours it might be disregarded.

SUMMARY.

* indicates that case does not quite correspond with the reaction.

I. Suspected apical tuberculosis, 19. Negative, 8. Temperature negative in all cases. Signs considered indefinite in all cases. Positive, 11. Temperature corroboratory. Signs definite, 10 cases. *Considered clinically doubtful, I case.

II. Pulmonary tuberculosis advanced, 4. *Negative, 2. Signs and temperature typical tuberculous, I; signs good, temperature flat, I; no bacilli in fæces or sputum, 2. Positive, 2. Signs and temperature tuberculous, 2; bacilli found, 1.

III. Distinctive between tuberculosis and pneumonia, 12. Negative, 9. Crisis or lysis in all cases. Signs cleared up in all cases. Positive, 3. Temperature tuberculous, no leucocytosis, all cases. Signs persisted, all cases.

IV. Bronchitis, 3. Negative, 1. Attacks asthmatic. Positive, 2. Temperature tuberculous, signs

persisted, 2.

V. Distinctive between unresolved pneumonia and tuberculosis, 1. Negative, 1. Signs disap-

peared, temperature corroboratory.

VI. Pleurisy with effusion, 11. Negative, 8. No bacilli in chest fluid, 5; temperature flat, 5; temperature septic, pus found, 2; *tubercle bacilli in chest fluid, 1. Positive, 3. Bacilli in chest fluid, 1; long continued tuberculous temperature, 3.

VII. Pleurisy, fibrinous, 3. Negative, 1. Temperature flat, chest emphysematous. Positive, 2. Temperature and history corroboratory, 2.

VIII. Bronchiectasis,* 1. Negative, 1. sputum examinations negative, temperature flat.

IX. Hydropneumothorax, 2. Positive, 2. Bacilli in sputum and chest fluid, 2.

X. Pyopneumothorax, 1. Positive, 1. Temperature and history tuberculous. Pus sterile.

XI. Hæmatemesis, 1. Positive, 1. Temperature flat, no signs. Bacilli found in sputum. Von Pirquet's test positive.

XII. Hamoptysis, 1. Positive, 1. No signs,

temperature flat, bacilli found.

XIII. Enterorrhagia, 1. Negative, 1. Temperature flat, attributed to cirrhosis.

XIV. Chronic diarrhaa, 1. Negative, 1.

tubercle bacilli in fæces.

XV. Cystitis, 2. Negative, 1. No bacilli found in urine. History gonorrhœal. Positive, 1. Bacilli found in urine.

XVI. Irregular, unexplained fever, 6. Negative, 4. Sepsis unexplained, 2; typhoid, 1; salpingitis, I; septic cases ran high leucocyte count. Positive, 2. *Staphylococcus pyogenes aureus septicæmia, I, focus not found. *Temperature typically tuberculous, I; focus not found.

XVII. Adenitis, unexplained, 5. Negative, 2. Temperature flat, 1. Disappeared under mercury, 1. Positive, 3. Lymphatic leuchæmia bacilli in sputum, 1. Glands almost suppurating, 1. *Possible doubt as to nature of glands, I. Chest fluid showed high lymphocyte count.

XVIII. Arthritis, 2. Positive, 1. Tuberculous hip at autopsy. Negative, 1. Gonorrhœal history

XIX. Controls, 5. Negative, 5. Chronic cardiac valvular disease, 1; morphinism, 1; subacute rheumatic fever, 1; myelitis, 1; exophthalmic goître, 1.

It will be seen that of the eighty-three reactions recorded, thirty-seven were positive and forty-six negative, and that, in the main, the reaction seems to correspond very favorably with the clinical inter-pretation of the case. There was one flagrant contradictory example among the negative results-the only instance in which the bacilli were found, thus affording definite proof in opposition to the eye test. This was in a boy of nineteen, where pleurisy with effusion developed in conjunction with an acute rheumatic fever and a chronic endocarditis, complicated by an acute pericarditis. The Bellevue Hospital pathological laboratory reported tubercle bacilli in the pleural effusion. The boy left the hos-

POSITIVE REACTIONS.

†Test considered at variance with clinical manifestations. *Test important factor in determining diagnosis. ‡Eyes required treatment after test.

| | | Principal disease | First disease. | |
|-------------|--|--|---|--|
| Name | Cause of trial. | Principal disease. Acute rheumatic fever. | Final diagnosis. | Remarks. |
| *1. H. P | Pulmonary tuberculosis, right apex? | | Rheumatic fever. | Reaction slight. Signs definite. |
| 2. G. M | Pulmonary tuberculosis, right apex? | Chronic cardiac valvular disease. | Septicæmia streptococ- | Signs persisted. History typical. Signs definite. History |
| 3. L. O'B | Pulmonary tuberculosis, right apex? | Intestinal adhesions. | Intestinal adhesions. Tu- berculosis of lungs. Typhoid fever. | good. |
| 4. S. Z | Pulmonary tuberculosis. | Typhoid fever. | Typhoid fever. | After patient had passed through his typhoid, signs persisted. |
| *5. G. S | Pleurisy with effusion. | Pleurisy with effusion. | Pleurisy with effusion. | Tubercle bacilli in pleu- ral fluid. |
| 6. J. A | Pulmonary tuberculosis, advanced. | Chronic rheumatic arthritis. | Chronic pulmonary tu- berculosis. | No tubercle bacilli in sputum. Repeated exami- nations. Temperature tu- |
| *7. B. R | Distinguishing between pneumonia and tuberculosis. | Pulmonary consolidation. | Chronic advanced pulmo- nary tuberculosis. | Long tuberculous temperature. |
| 78. N S | Pulmonary tuberculosis, right apex? | Acute nephritis. | Acute parenchymatous nephritis. | Case doubtful. Temper- ature dropped. Signs in- definite. No tubercle ba- cilli in suptum or urine. |
| 9. P. R | Tuberculosis of kidneys and bladder. Fibrinous pleurisy. | Tuberculos)s of kidneys and bladder. | Tuberculosis of kidneys and bladder. Fibrinous pleurisy. | Tuberculous tempera- |
| 11. E. M | Pulmonary tuberculosis, | | Pulmonary tuberculosis. | ture. Spinal scoliosis. Temperature tuberculous. |
| 12. K. S | right apex? Pulmonary tuberculosis, | Anæmia, secondary. | Pulmonary tuberculosis. | Signs persisted. Slight raise of temperature. |
| *13 L. N | right apex? Pulmonary tuberculosis. | Rheumatism, Slight neu- | Pulmonary tuberculosis. | History typical of tuber- culosis. |
| 14. R. H | right apex? Pulmonary tuberculosis, | 1100 | Pulmonary tuberculosis. | Signs definite. |
| ‡*15. A. G | Arthritis, right hip, | Exophthalmic goitre. | Tuberculous arthritis. | Proved by autopsy. |
| *16. P. H | knee, ankle. Pleurisy with effusion. | | Pleurisy with effusion. | Long tuberculous tem- perature. No tubercle bacilli in sputum or pleural fluid. |
| *17. O N | Pleurisy with effusion. | | Plenrisy with effusion, | Temperature tuberculous, No bacilli in sputum. |
| 18. J. S | Pulmonary tuberculosis. | Hydropneumothorax. | Hydropneumothorax. | Tubercle bacilli in spu- tum and chest fluid. |
| 19. J. D | Irregular temperature. | Staphylococcus aureus septicæmia. | Staphylococcus aureus septicæmia. | Temperature septic. Tu- berculous focus not found. Hypodermic tuberculin |
| 20. P. K | · Pulmonary tuberculosis. | | Hydropneumothorax. | reaction positive. Tubercle bacilli in spu- tum and chest fluid. |
| 21. A. T | Bronchitis and elevation | | Bronchitis? | No tubercle bacilli in sputum. Signs persisted. |
| *22. A. McB | of temperature. Pyopneumothorax. | | Pyopneumothorax. | Pus culture sterile. Temperature mildly tuber- |
| *.3. A I | Distinguishing between meumonia and tuberculo- | Pilmorary consolidation. | Pulmonary tuberculosis. | Signs persisted. Temperature tuberculous. |
| t*24 M H | Hamatemesis. | | Pulmenary tube reulesis- | Signs very indefinite. Tubercle bacilli in sputum. |
| 25 F K | bibrinous pleurisy. | | Fibrinous pleurisy. | Slight rise of tempera- ture. Sputum negative. |
| *26 R D | Hæmoptysis. | | Pulmonary tuberculosis | No signs. Tubercle bacilli in sputum. |
| 27. A. M | Cervical adenitis. | Mitral regurgitation, pleurisy with effusion. | Chronic cardiac valvular | Chest fluid cystological count showed great lympo- cytosis. Temperature ir- |
| 28. E. C | General adenitis. | Acute 'variatio le | Pulmonar : interculosis. Leuchanna | Tubercle bacilli in spu- |
| t29. M. V | Irregular temperature. | Tare 181. | Atrophic cirrhosis of liver. Ascites. | Temperature tuberculous. Focus not found. |
| * 1 G | In tinguishing between | | Pleurisy with effusion. | Temperature tuberculous. |
| , R E | Pulmonia and pleurisy Pulmonary tuberculosis, | | Pulmonary tuberculosis. | Signs typical. Sputum |
| *132. A. S | Bronchitis. | | Pulmonary tuberculosis. | Signs typical. Tempera- ture tuberculous. |
| 33. R. K | Pulmonary tuberculosis, | Not its in legs. | Pulmonary tuberculosis. | Signs definite. Tempera- ture tuberculous. Spu- tum negative. |
| : М. Н | and the state of | Alcoholic : dyneum | Pulmonary tuberculosis. | Hypodermic tuberculin test positive (1 mg.) |
| · · I Z | Pulmonary tuberculosis, left anex? | Syphilis. | Pulmonary tuberculosis. | Hypodermic tuberculin |
| * (M F | Abstraced pulmonary to bereplosis | | Pulmonary tuberculosis. | definite. |
| · M I | Cervical adenitis. | Suphilitie paraph gia | Syphale Tuberculous | Glands supported \ perivertebral abscess to veloped. |
| | | | | |

pital cured after an illness of two months, and remained in good health, when seen two months after his discharge. Unfortunately, no second test in the other eye was made, as it frequently happens that the first test, owing to the fact that the tuberculin

does not reach the canthus, is negative, while a second test proves positive.

The negative reactions in cases of advanced tuberculosis seem to coincide with the general consensus, that very advanced patients often fail to react.

NEGATIVE REACTIONS.

| | | NEGATIVE REACTIO | NS. | |
|-------------------------|--|--------------------------|--|---|
| Name. | Cause or trial. | Principal disease. | Final diagnosis. | Remarks. |
| *1. W. L | Paimonary tuberculosis, ght apex? | | Lobar pneumonia. | Double pneumonia, crisis on twelfth day. |
| °2. M. R | Pleurisy with effusion. | Mitral regurgitation. | Chronic cardiac valvular | No tubercle bacilli in pleu- ral fluid. |
| ~3. M. S | Pulmonary tuberculosis, | | Influenza. | Temperature dropped after |
| 4. J. B | Pleurisy with effusion? | | Thickened pleura. | No fluid on repeated as- |
| 5. J. R | Cervical adenitis. | Chronic intersticial ne- | Hodgkin's disease, ne- | Temperature flat. Patient |
| 6. L. D | Pulmonary tuberculosis, | Gastroenteritis. | phritis. Meno- | robust. Signs indefinite. |
| *7. M. C | right apex? Pleurisy with effusion. | | Pleurisy with effusion. | No tubercle bacilli in |
| '8. M. S | Pulmonary tuberculosis, | Pneumonia. | Influenzal pneumonia. | chest fluid. Crisis on sixth day. |
| 9. G. S | Pulmonary tuberculosis, | | Lohai pneumonia. | Crisis and disappearance |
| 10. A. M | right apex? Pulmonary tuberculosis, | Syphilis. | Syphilis. | of signs. Signs considered doubtful. |
| ₹11. S. T | Pulmonary tuberculosis, | | Pulmonary tuberculosis. | Case for advanced av- |
| *12. A. O'C . | both lungs? Distinguishing between | | Influenzal pneumonia. | bacilli in sputum. Crisis on seventh day. |
| | pneumonia and pulmonary tuberculosis. | | | |
| *13. D. S | Irregular fever. | | Fever subsided without a diagnosis. | Fever septic in type. Many chills. |
| 14. J. W | Pulmonary tuberculosis, both bases? | Arthritis deformans. | Bronchiectasis. | Four negative sputum ex- aminations. History nega- tive. |
| 15. J. O'B | Chronic diarrhœa. | | Chronic enteritis. | No tubercle bacilli in fæces. No reaction to tuber- culin hypodermatically. |
| 16. E. T | Pulmonary tuberculosis, | | Anæmia, secondary. | No bacilli in sputum, three examinations. Anæmia due to sexual excess. |
| 17. J. K | Hæmorrhage from the | | Atrophic cirrhosis. | No bacilli in sputum. |
| 18. W. P | Cystitis. | | Cystitis. | Probably old gonorrheal infection. |
| *19. S. B | Pulmonary tuberculosis, both apices? | Bronchitis. | Branchial asthma. | Three sputum examinations negative. Tuberculin hypodermically negative (4 mg.). |
| 20. W. B | Distinguishing pneumonia | | Lobar pneumonia. | Definite lysis. |
| 21. A | and tuberculosis. Control. | Rheumatic fever. | Rheumatism, thrombophle-bitis. | |
| 22. C. D | Control. Distinguished between | | Morphinism. Pneumonia. | Crisis on fifth day. Signs |
| 24. W. B | pneumonia and tuberculosis. | | | disappeared. |
| 25. G. G | Control. | | Transverse myelitis. Chronic cardiac valvular disease. | |
| 26. W. W | Pulmonary tuberculosis, | Syphilis. | Syphilis. Bronchitis. | Signs indefinite. |
| 27. L. P | right apex? Distinguishing between tu- | | Unresolved pneumonia, | Temperature flat. Signs cleared up. |
| 28. J. H | Distinguishing between tu- | Lobar pneumonia. | Pneumonia, slow resolu- | Temperature finally flat. |
| 29. V. V | berculosis and pneumonia. Pleurisy with effusion. | | Pleurisy with effusion. | No tubercle bacilli in pleu- ral fluid. |
| *30. W. C | Distinguishing between tu- | Lobar pneumonia. | Lobar penumonia. | Crisis on fifth day. |
| 31. H. S | berculosis and pneumonia. Control. Pleurisy with effusion. | Lobar pneumonia. | Exophthalmic goitre. Pneumonia and empyema. | Gram positive diplococcus in pleural fluid. |
| *33. J. C | Pleurisy with effusion. | | Pleurisy with effusion. | No tubercle bacilli in pleu- ral fluid. |
| 34. A. G | Irregular fever. | | Typhoid fever. | Typical typhoid course. |
| 35. J. B | Pulmonary tuberculosis, | Splenic anæmia. | Splenic anæmia. | Signs indefinite. |
| 36. W. Z | left apex? Pulmonary tuberculosis, | Stricture of trachea. | Metastatic carcinoma. | Signs attributed to pres- |
| °37. C. H | Pleurisy with effusion. | Pneumonia. | Empyema. | Temperature septic. Spu- tum negative. |
| 38. S. B | Pulmonary tuberculosis, | Anæmia. | Mitral stenosis. | Sputum negative. Two cx- |
| 39. C. O'N. | Bronchitis, chronic | | Bronchial asthma. | Paroxysms asthmatic. Pa- |
| 40. J. B | Distinguishing between tu- | | Influenzal pneumonia. | Temperature dropped by |
| -41. N. M | berculosis and pneumonia. Cervical adenitis. | Syphilis. | Syphilis. | Temperature dropped by lysis. Signs cleared up. Glands diminished in size |
| 42. L. W | Irregular fever. | | Fever. | under mercury, Not diagnosticated, Prob- ably a mild typhoid. |
| †43. W. M | Pleurisy with effusion. | Chronic cardiac valvular | Pericarditis. Pleurisy with | Tubercle bacilli in pleural |
| 14. E. O'E. 15. L. E | Pierrisy fibrinous Arthritis. | disease. | effusion. Fibrinous pleurisy. Gonorrheal arthritis. | exudate. Temperature flat. Ohi gonorrheal history |
| °46. J. V | Imagalar fever. | Acute salpingitis. | Acute salpingitis. | obtained. No pulmonary signs. |
| | | | | |

However, in neither of these patients did examination of the sputum or fæces reveal tubercle bacilli.

Among the positive reactions, one case, an anæmic effeminate youth with vague signs at the right apex, gave a positive result. He entered the

hospital with marked hæmaturia, a high temperature, and complaining of general weakness. No bacilli were found in the sputum or urine. His temperature dropped after four days, and he left the hospital.

Two patients with fever, one with a Staphylococcus pyogenes aureus septicæmia and the other, an atropic cirrhosis of the liver with ascites, running a temperature with an evening rise and morning drop for over a month, reacted positively, when no tuber-culous focus was discovered. In both cases the sputum was negative, and in the Pyogenes aureus case examination of the prostatic fluid—the prostate being large and tender-revealed no bacilli. In neither of these patients could we discover any affirmative symptom or distinct sign of tuberculosis. The patient with septicæmia, however, recovered under the vaccine treatment, and later reacted to two milligrammes of tuberculin injected hypoder-The reaction was accompanied by the matically. return of the ocular inflammation, although the Calmette test had been tried one month previously.

On the other hand, in many cases where the evidence of tuberculosis seemed disparagingly slight, the positive eye reaction called prompt attention to an important factor in the case-in some instances to the only demonstrable cause of the patient's malady. In one instance, a patient with marked signs of exophthalmic goitre entered the hospital with symptoms which pointed to an old fracture of the hip. Her history varied from day to day, so that it was more confusing than valuable. She was first admitted to a medical ward as a case of chronic rheumatism, then transferred to the surgical side as an old fracture of the hip. A fracture of the hip was ruled out by the surgeons, who thought the case a neuropathic joint. Gonococci being found in the vaginal smear, she was presented to students at a clinic as a possible gonorrheal hip. The eye test finally clinched the diagnosis of tuberculosis of the hip, which had been considered from the start, and which autopsy proved to be correct.

On the negative side, cases might be cited equally convincing—e. g., a man who had been treated for pulmonary tuberculosis in a hospital for tuberculosis for three months without definite signs in his chest, gave a negative eye reaction, repeated negative sputum examinations, failed to react to three milligrammes of tuberculin injected hypodermically,

and ran a flat temperature.

In conclusion the negative reaction may, as a rule, be considered very strong proof that the patient has not tuberculosis, unless there be most important evidence clinically to the contrary. I might mention here, that by accident a twenty-five per cent glycerin emulsion of Koch's old tuberculin, intended only for the skin reaction, was instilled into the eye of a girl of fourteen without the slightest effect. The case eventually turned out to be one of typhoid.

Positive reactions warrant a lengthy and most minute search for some tuberculous focus. It may be impossible to discover it, and therefore it may be necessary to neglect the reaction, but in very many cases the positive reaction, even in the least expected instances, will be later affirmed by indisputa-

ble evidence of tuberculosis.

While the Calmette test is not infallible, we have found it, instilled in the manner described, entirely harmless and fully on a par so far as reliability is concerned with throat cultures in suspected diphtheria, Widal's in suspected typhoid, or the frequently disconcerting leucocyte counts in obscure

febrile cases. More accurate usually than the fallible ear and percussion finger, simpler by far than hypodermatic tuberculin reaction, negatively far more satisfactory than a negative sputum, fæces or urine report, the ophthalmic tuberculin reaction, sanely employed, may, within broad limits in hospital routine, exclude a diagnosis, confirm a diagnosis, or furnish a clue which cannot be allowed to pass unconsidered and unchecked.

THE TUBERCULOOPHTHALMIC REACTION. Report of Five Hundred Observations.*

By Frank L. Christian, M. D., Elmira, N. Y.

In May, 1907, Wolff-Eisner and Chalmette announced a new diagnostic test for tuberculosis Since then other investigators have conducted many thousand tests. Considerable doubt has been cast upon the accuracy of the procedure, and the results do not, in all respects, seem to bear out the contentions of the discoverers.

It is not my intention to review the mass of recent literature, but simply to report the result of my observations in making this test upon five hundred

individuals.

The test is made by instilling a one per cent. sterile solution of tuberculin into the eye. Care should be taken to insure cleanliness, as a traumatic

conjunctivitis is easily produced.

The tuberculin is furnished by the laboratories in tablets, powder, or in suspension in sterile glass tubes. In conducting these tests the tablets were used. One tablet is dissolved in five minims of sterile salt solution, and one drop is carefully instilled into the eye. The lids should be held apart for a minute or more to allow equal distribution of the fluid and to prevent the patient from rubbing the eye. It is well to note the exact condition of

the conjunctiva before making the test.

It is asserted that if tuberculosis exists an inflammation of the conjunctiva will occur. This reaction usually is noticeable in from four to forty-eight hours. In the majority of the patients the conjunctivitis was apparent in from eight to fifteen hours. In but two instances was it delayed longer than twenty-four hours. Usually there was some slight itching, lachrymation, redness, and swelling of the caruncle; in others some very evident conjunctivitis. A very few had a severe conjunctivitis, that yielded readily to simple treatment in a day or two. In many the reaction was very slight and fleeting, and most careful observation was necessary to determine the result. This mild form may to some extent account for the discrepancies found in the reports of various observers.

No permanent damage was done in any case. There was no febrile reaction or systemic disturb-

ance of any character.

A thorough examination of the eye is essential in every instance, for a severe and perhaps dangerous reaction would undoubtedly occur if tuberculous lesions were present in the eye.

There is apparently no relation between the intensity of the reaction and the severity of the lesion.

^{*}Read at the annual meeting of the Keuka Lake Medical and Surgical Association.

This is well illustrated by the absence of the reaction in moribund cases. Some of the most severe reactions encountered were in beginning tuberculous cervical adenitis. The reaction is present regardless of the location of the tuberculous process.

One hundred normal individuals were selected, and in no instance was a positive result found upon the first installation. These cases were all very carefully chosen, and only those individuals known to be and to have been in excellent health were tested. It was observed, however, that if any healthy individual was subjected to frequent tests a positive reaction could be obtained. This is no doubt due to an increasing hypersensitiveness of the conjunctiva. In this connection it is well to remember that the preparation used is not a true solution, but a watery suspension containing free particles. Unless care is taken to secure complete separation of the tablet, traumatic conjunctivitis may result.

In testing the reaction in tuberculosis, two hundred and ten cases were available, and the follow-

ing results were obtained:

Pulmonary tuberculosis (moderately advanced), positive, 52; pulmonary tuberculosis (advanced and moribund cases), negative, II; incipient tuberculosis, positive, 116; incipient tuberculosis (T. B. present in sputum), negative, 2; old tuberculous synovitis of knee (ankylosis healed and well for six years), negative, 1; tuberculous peritonitis (operation six years ago, well since), negative, 1; tuberculous testicle, positive, 3; tuberculous testicle (post operative), positive, 1; tuberculous hip (old, but recently had exacerbation), positive, 1; subacute tuberculous synovitis (knee), positive, 1; tuberculous asthma, positive, 1; Pott's disease (old, healed many years), negative, I; active tuberculous osteomyletis (humerus), positive, 2; tuberculous cervical adenitis, positive, 12; tuberculous meningitis, positive, 3: chronic rheumatism, arthritis, and pulmonary tuberculosis, positive, 2.

Results: Positive, 194; negative, 16; total, 210. In all of the advanced and moribund patients the reaction was invariably negative. Excluding these as a recognized phenomena, the reaction was present in all but 2½ per cent. of the tuberculous

In the various forms of rheumatism the reaction is frequently positive. Pheln found it so in six out of twelve cases of acute articular rheumatism.

In this series in sixty cases of rheumatism (including one case of gonorrheal rheumatism), the reaction was present in thirty-six and absent in twenty-four, the cases being classified as follows:

Acute articular rheumatism and endocarditis, positive, 9; acute articular rheumatism and endocarditis, negative, 4; subacute articular rheumatism, positive, 26; subacute articular rheumatism, negative, 20; gonorrheal rheumatism, positive, 1. Total, 60.

Owing to the result obtained in these reactions, a further test was made in six cases of subacute articular rheumatism. The ophthalmic test was repeated after a period of from six to ten days, and at the same time 0.001 milligramme of T. R. was administered subcutaneously. In two patients the ophthalmic test was positive, and there was also a

well marked febrile reaction to the injected tuberculin. The other four patients were absolutely negative to both reactions. Owing to the absence at this time of available cases of rheumatism, extended observation was impossible.

No satisfactory conclusions can be based upon these few cases, but the result affords thought upon the ætiology of rheumatism. It is quite probable that tuberculosis may complicate rheumatism or vice versa more often than we have been led to suspect.

In one hundred and ninety individuals ill from disease other than tuberculosis, the reaction was present forty-four times, thirty-six of these positive results being previously mentioned in rheumatic patients.

Out of seventeen cases of influenza five gave a positive reaction. There was no clinical or microscopical evidence of tuberculosis in any of these five and has not been up to the present time. In three instances in which the pleura alone was involved a positive reaction occurred. These patients could no doubt be well included among the tuberculous subjects, many authorities maintaining that most pleurisies are of tuberculous origin.

The following is a list of the medical cases which were subjected to this test and the result obtained, the tuberculous and rheumatic cases being excluded:

| | Number test -1 |
|--|----------------|
| Asthma | Negative 4 |
| Morphinism | Negative 1 |
| Epilepsy | .Negative 6 |
| Enteritis | . Negative : |
| Influenza | . Negative 12 |
| Influenza | .Positive 5 |
| Anæmia, (simple) | .Negative 6 |
| Mitral regurgitation | . Negative 5 |
| Mitral stenosis | Negative I |
| Lobar pneumonia Parotitis Acute bronchitis | . Negative / |
| Parotitis | . Negative 4 |
| Acute bronchitis | . Negative T |
| rieurisy with effusion | . Positive > |
| Old plastic pleurisy | .Positive 1 |
| | |
| Total | 5% |
| | |

Forty-six nontuberculous surgical cases were observed, and in no instance was there a positive reaction. The following is the result:

| Number to | |
|--|-----|
| and resu | lt. |
| Cervical abscess | E |
| Puritus ani Vegetive | |
| Puritus ani Negrtive Gunshot wound of leg. Negative | ī |
| Damorrhoids Vegative | |
| Suppurating testicle (traumatic)Negative | T |
| Erysipelas | |
| Tonsillar abscess | 3 |
| Rectal prolapse | I |
| Ubstructive icterus Vegative | |
| Filtillosis (Dostoperative) | 4 |
| Cantillas (streptogrecie) | - |
| incised and lacerated wounds Negative | 3 |
| varicocele (postoperative) | T |
| Phlebitis Negative Angeiosarcoma Negative Mastoicitis Negative | |
| Angeiosarcoma | |
| Mastoiditis Negative | |
| I faumatic confunctivitis Negative | I |
| Dating of feet and feet the feet free feet free | 1 |
| Various fractures Negative | 4 |
| Acute office media Nagativa | ī |
| Acute gonorrhœal epididymitisNegative | 3 |
| | |
| Total | |

It is interesting to observe that while one patient with gonorrhoeal rheumatism gave a positive result, three patients with acute gonorrhoeal epididymitis were all negative. Other observers have reported positive results in gonorrhoeal rheumatism.

The usual infections accompanying erysipelas, cellulitis, and mastoiditis might well have been expected to give a positive reaction, as did the systemic infection in so many cases of rheumatism;

this, however, did not occur.

Some investigators have reported positive results in syphilis, but in this series all were negative, as shown by the following data concerning twentyeight dermatological patients:

| | and Result. |
|--------------------|-------------|
| Primary syphilis | Negative 8 |
| Secondary syphilis | Negative 11 |
| Tertiary syphilis | Negative 7 |
| Scabies | Negative 1 |
| Psoriasis | Negative I |
| 77 | -0 |
| . Total | 28 |

Conclusion.—The test is rapid, simple, and convenient. If necessary to repeat it should not be applied to the same eye. A positive reaction may follow frequent installations in a normal individual. The test should not be applied to any but a normal eye; serious results may follow instillations into a diseased eye. The reaction is of value in the diagnosis of early tuberculous lesions. The reaction is negative in the advanced lesions of tuberculosis. The reaction alone cannot be held to be conclusive, still in the presence of other signs it furnishes confirmatory evidence of much importance. The reaction occurs in conditions other than tuberculosis, and must still remain secondary to a careful physical examination.

NEW YORK STATE REFORMATORY.

PRELIMINARY REPORT ON THE EFFECT OF REPEATED INJECTIONS OF TUBERCULIN ON LYMPHATIC ORGANS.

By Samuel G. Dixon, M. D., Allen J. Smith, M. D., and Herbert Fox, M. D.,

Department of Health of the Commonwealth of Pennsylvania (Medical Laboratories, University of Pennsylvania).

The condition of the spleen in guinea pigs after treatment with tuberculin on some product of the tubercle bacillus like it, suggested that this organ might be the seat of some pathological change after injections of these solutions. The question naturally arose whether the inexplicable deaths among cattle after testing might not in some way be connected with this substance. In the course of our work in this laboratory, we have repeatedly encountered focal necroses in the spleen, and occasionally in the liver of guinea pigs and rabbits dying of the injections of the various tuberculins. These necroses were suggested by the naked eye appearance. The lymph nodes were not attacked by these areas, even those in close proximity to the point of inoculation. The foci of necroses were not sharply outlined but usually were surrounded by large lymph cells or endothelium. Around the older ones was sometimes a zone of polynuclear, and round cells, rather indicating a throwing off of the necrotic remains. The endothelium is almost always slightly hyperplastic. In order to see if severe treatment of a healthy cow with tuberculin would produce anything similar to this an animal was injected six times, two weeks apart, with 400 milligrammes of old tuberculin under the skin. She did not react at any time. She was killed two weeks after the last dose and at autopsy appeared to the naked eye to be a healthy animal. The pathological histology of spleen, lymph glands, and liver is as follows:

Lymph nodes: In none of a number of sections were there noted any areas of necrosis of focal development, suggesting tubercles. The glands are in some instances more or less hyperæmic. In all, the follicles and chords seem large. Many of the follicles show large endothelial germinal centres; and in the sinuses there is considerable endothelial swelling and hyperplasia. In other words, the notable features are a combined lymphoid and endothelial hyperplasia. To this may be added in some of the sections, in the medullary parts of the nodes a slight cedema of the connective tissue and a slight scattered polynuclear leucocytic and eosinophilic infiltration, and a minor grade of hæmic pigmentation. Compared with the normal glands, there is perhaps a slight increase in the amount of endothelial cell proliferation; this is not very marked.

Spleen: There is not so much fibrosis in this organ as in that of the healthy control animal; and there is a decidedly larger size of the Malpighian bodies, which generally show central endothelial proliferation of marked grade. Some of the centres of endothelial hyperplasia show moderate necroses with swelling, vacuolization, and loss of nuclei. The endothelium in the spaces may also be seen to be necrotic, occasionally phagocyting or pigmented. There is a slight excess of polynuclear leucocytes in the pulp; and the endothelium of the pulp is quite prominent. Here and there small multinucleated cells of endotheliod type occur, not, however, suggestive of the type of tuberculous giant cells.

Liver: Shows practically no changes beyond a fine vacuolation of the cells, which is, however, unaccompanied by any staining fault of the nuclei or cytoplasm. There is a slight excess of small mononuclear cells in a few small areas, not in definite nodes but scattered along some parts of the interlobular connective tissue and along some of the intralobular capillaries. The capsules of Glisson are not increased for bovine livers, although the tissue

about the bile ducts is quite marked.

As a control, tissues were taken from an apparently normal healthy cow killed at the abattoir; they include material from the compound lymph glands and spleen. From the history which could be obtained of this cow, she had not received tuberculin lately. Neither is, however, normal. There is excess of fibrous tissues, notably in the splenic trabeculæ and pulp, but also involving the lymph nodes; and in both there is both follicular and more or less diffuse endothelial hyperplasia; in both more or less well marked congestion and in the spleen a slight grade of hæmic pigmentation. None of the centres of endothelial hyperplasia show any necrosis nor is there any phagocytosis.

This demonstrated that the prescribed treatment

of this cow did not produce any distinct focal necroses. There was, however, a tendency for hyperplasia of the endothelium which went on to vacuolization and necrosis. This was more diffuse than usually seen in guinea pigs' spleen and affected frequently the sinus and endothelium.

Although the endothelium has suffered in both the guinea pigs and the cow, no hæmorrhages were present either great or small, thus speaking against any lytic change. The phagocytosis and pigmentation rather lead us to attribute the degeneration to

great proliferation incident to the toxemia.

Our Renders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVII.—How do you treat varicose ulcer? Closed

August 15, 1908.)

LXXVIII.—How do you treat acute coryca? (Answers due not later than September 15, 1908.)

LXXIX.-How do you treat sick headache? (Answers

LXXIX.—How ao you treat sice neaduche: (Answers due not later than October 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$82. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUINED) that the answers be short; if practicable, no one answer to contain more than six hundred records. words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Jounnal. The prize of \$25 for the best essay submitted in answer to question LXXVI has been awarded to Dr. Beverley Robinson, of New York, whose article appeared on page 407.

PRIZE QUESTION LXXVI.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

(Continued from page 411.)

Dr. Ottice N. Eisaman, of Pittsburgh, Pa., says:

Acute articular rheumatism, has to be distinguished from a few conditions which it resembles. But when we have heat, redness, pain, and swelling in two or more joints that occur, in order of frequency, in knee, ankle, shoulder, wrist, elbow, and hand, although any joint may be involved. In external cases the muscles near the joints become tender and rigid. There is sudden rise in temperature from 102° to 104° F., the temperature becoming irregular, possibly due to the profuse acid sweat. The patient complains of thirst and constipation; urine is scanty and loaded with urates, and often contains albumin. The pulse is rapid, usually above 100, and soft. Anamia is common, and we find a marked leuco The duration of an attack varies from a cytosis. few days to six or more weeks.

I order my patient to bed between woolen blankets, with woolen night shirt open in front, sleeves slit so that the infected joints can be locally treated. The room should be well ventilated, temperature 75° F. A saline cathartic should be given in the

beginning, and the movements of the bowels carefully noticed throughout the course of attack. Fixation of the joints involved is essential, and can be done by plaster of Paris splint, or by light boards well padded with cotton. The joints must be wrapped with woolen bandages, and over this should be placed a piece of oiled silk before applying the splints. Solution of sodium bicarbonate, 20 grains to the ounce, is used to keep the bandages around joints moistened, applied warm every two hours, by separating the oiled silk, or by using Fuller's solution, whose formula is sodium bicarbonate, 6 drachms; laudanum, 1 ounce; glycerin, 2 ounces; and water, 9 ounces. Larger amounts of laudanum can be used in Fuller's lotion. The best of the internal treatment is probably salicylates in form of sodium salicylate, 20 grains, every two hours, in simple elixir. The simple elixir prevents irritation of the stomach. When the pains are extreme, and the patient cannot get rest, morphine sulphate, hypodermically, must be resorted to, which tends to also prevent cardiac complications. Careful attention must be paid to the heart, and if no pathological conditions are found at first examination, note it, as soon as they appear. Cardiac complications are most dangerous, which occur in order of their frequency, endocarditis, pericarditis, and myocar-When treatment for these conditions is called for, the ice cap applied over the cardiac region, or a series of small blisters in the same region over intercostal spaces from third to sixth rib, proves beneficial. As pain disappears and the temperature becomes normal, the salicylates should be gradually withdrawn.

As to diet, milk is the ideal food, given diluted with mineral waters. If milk cannot be borne, soups and broths flavored with vegetable extracts, or chicken, tea, milk toast, and oat meal can be substituted. Lemonade is allowed. As long as there is elevation of temperature, liquid or semiliquid foods are used in order to carry on proper elimination. Alcohol is allowed only where anæmia is marked, in tonic doses. Diluted whiskey is probably the best form. The patient must be kept in bed some time after temperature has become normal and pain has disappeared, the time left to the judgment of the physician. During convalescence iron is given in form of elixir of iron, quinine, and strychnine, one drachm every four hours. As the appetite returns the diet must be carefully watched. Farinaceous and not saccharine foods must be selected. oat meal, milk toast, unsweetened puddings, wine jelly, and malted foods are suitable. Eggs and white meats are gradually added to the list, before ordinary meats. Meats given too early may induce relapse. Careful instruction should be given to the patient in order to avoid recurring attacks.

Dr. C. W. Gillette, of Schuylkill Haven, Pa., states:

The treatment of a case of acute articular rheumatism resolves itself into making the patient comfortable, to relieve him of the annoying symptoms, to protect the heart, and to cure the disease.

The patient should be kept in bed, upon a soft, firm mattress, with springs that do not sag. room should be well lighted and well ventilated, with care that no draughts come in contact with the patient. In cold weather a woolen or canton flannel night dress should be worn. In hot weather light coverings are sufficient. A tepid sponge bath should be given every morning under covers.

The swollen and painful joints should be wrapped with cotton, saturated with lead water and laudanum, or with Fuller's lotion, and kept applied for forty-eight or seventy-two hours, if the skin is unbroken. In addition, fixation of the joint with moderate flexion, if at knee or elbow, should be made upon a well padded splint. All manipulation of the affected joints should be guarded against during the acuteness of disease.

For the restlessness, pain, and insomnia morphine is usually indicated in severe cases. It quiets the restlessness, relieves the pain, promotes sleep, and does not depress the heart. The sulphate, ½ to ¼ grain, should be given subcutaneously, combined with atropine sulphate, 1/150 grain, when sweating is excessive. Usually, with proper treatment, an evening dose continued for three days to a week is sufficient. Care should be exercised in

continuing its longer use.

Protection of the heart is best accomplished by absolute rest in bed. The urinal and bed pan should be used in severe cases. The diet should consist of milk, 4 to 6 ounces every three hours. If milk is not well borne, it should be peptonized, or buttermilk, broths, and light soups may be substituted.

The internal medication should be started with small doses of calomel. In sthenic cases, with high fever and rapid bounding pulse, give of the following a teaspoonful in wine glass of water ev-

ery hour:

| \mathbf{R} | Tinct. of aconite, | , |
|--------------|---------------------------|---|
| | Sweet spirit of nitre, | |
| | Potass. citrate, | |
| | Water,enough to make 3iv. | |
| M. | | |

If hyperpyrexia is present, cold sponge baths are indicated.

After the bowels have been freely moved and the system impregnated with the cardiac sedatives, usually within twelve to twenty-four hours, discontinue this prescription and give 10 grains sodium salicylate every hour for five or six doses, repeating doses again on second and third day if no untoward symptoms arise. The dose should then be reduced to 5 grains, three times daily, for it is useless to further push the drug if no good has re-In conjunction with the salicylate, give potassium citrate. 15 grains, in a wine glass of water every three hours. During the administration of the salicylate the heart should be carefully watched, as the drug in large doses tends to weaken the heart muscle. The urine should be examined daily for albumin and casts, and upon any untoward effects on either of these organs or the stomach their administration should be discontinued. If the stomach is irritable the salicylates may be tried by rectum, or an ointment of salicylic acid, 11/2 drachms; oil of turpentine, 30 minims; lanolin, 1 ounce; one drachm to be rubbed into the affected joints daily.

For the anorexia and coated tongue keep the bowels acting daily and give the following in wa-

ter after nourishment:

| Γ_k | Finet, of nux yomica, | |
|------------|-----------------------|----------|
| | Extr. of gentian, | . m is : |
| 3.4 | Essence of pepsin, | 51. |

Anæmic patients give cod liver oil and syrup of iodide and iron after acute symptoms subside.

In cardiac complications place an ice bag over the præcordial region, followed by small blisters, keep patient on back, and administer morphine if pain is severe. In cases that hang on, give potassium iodide, 5 to 10 grains in a drachm of comp. syrup of sarsaparilla, three times daily after meals. Stiffness of joints are to be treated with massage and steam baths.

In conclusion, if the salicylates or other drugs disorder the stomach, stop their administration for a time, at least, and give the stomach a rest and Nature a chance. With careful nursing, milk diet. plenty of water to drink, and the external treatment described, many patients will improve.

Dr. Joseph Di Rocco, of New York, observes:

In treating this disease there are certain factors which we must bear in mind, namely: I, We have to deal with an acute infectious disease, causing arthritic manifestations. 2. That in salicylic acid or any derivatives of such we have a so called specific drug to combat the rheumatic poison. And with the latter point in view we must get the patient as quickly as possible under the influence of the drug; and then to increase the interval of administration and not the dose, and finally to continue in decreasing doses for a long time.

In the prophylaxis several points are noted, especially for those who have inherited certain tendencies towards the disease, and for those who have had the disease: 1, Sufferers should avoid exposure: cold, and wet, and overfatigue; 2, should, wear flannels all year, light ones in the summer: 3, should take exercise, fresh air, and keep the skin in good condition by frequent bathing; and, 4, should avoid indiscretions in diet and drinking.

During an attack put the patient to bed, in a well ventilated room, and keep him absolutely quiet, for it is very hard to say whether he shall be there for one week or for six weeks. Diet is exclusively milk at the start, to which may be added vichy; but later on, when the rheumatic symptoms have disappeared, we can give soups, plain broths, crackers, toast, farinaceous foods. Medicinally, after giving our initial dose of 5 grains of calomel, with 15 grains of sodium bicarbonate, to be followed in four to five hours by 2 ounces of Rochelle salt, we fall back upon our specific drug. Perhaps the best way in administering this drug is thus:

| $\mathbf{P}_{\!\scriptscriptstyle{F}}$ | Acid. salicylici, | | | | | | | | | | | | | .3v | iiss | |
|--|-------------------|----|--|-------|--|------|--|--|------|-------|------|---|---|------|------|---|
| | Sod. bicarb, | | | | | | | | | | | | | | | |
| 3.5 | Aquæ gaultheri | æ, | | ٠ | | | | | | ٠ | | ٠ | - | | . 51 | L |

Sig.: One teaspoonful every three hours in plenty of water.

Once in a while we have to deal with patients who cannot stand the salicylates; persons who have idiosyncrasies towards the drug, as shown by severe vertigo, nausea and vomiting, ringing in ears, heart palpitation, and perhaps nose bleed, then we may give any one of the following: Oleum gaultheriæ,

 $M \cdot x$, in capsules, every three hours; or aspirin, grain v, every four hours; or salicin, grain x, ev-

ery three hours.

For the relief of special symptoms such as pain and fever, we note that in most cases the treatment will help very materially in stopping the pain, and we should never be tempted to give coal tar products for the relief of pain. The fever in the majority of cases is not an element, but we may have a condition of hyperpyrexia in the rheumatic state, the temperature reaching perhaps 104° to 106° F. Then again do not be tempted to give any coal tar products to reduce such, but combat the condition with cold sponging.

with cold sponging.

The local treatment of the joints involved is not of so much importance, but if we keep in mind these three facts: I, To keep the joints immovable; 2, to protect them from injury; and, 3, to keep them warm, we have done all we can for them, whether we apply any local medication or not. The local drug medications are, I think, purely psychic in their effect; but the great importance is to give to the part involved absolute rest and keep it warm. We may use a fifty per cent. ichthyol salve, or oil of wintergreen and olive oil, or an alkaline solution,

 Tr. opii,
 .5i

 Glycerin,
 .5ii

 Aquæ,
 .q. s. ad. 3x.

 M

Sig.: Apply hot to the joints.

In this disease the treatment of the convalescent state is exceedingly important. It is much safer to keep the patient in bed about ten days after the subsidence of fever and joint symptoms; change the diet only after such subsidence, when we can add eggs, broths, vegetables, fish; game and meat only when the temperature has been normal for one week.

And, finally, to counteract the anæmia we give cod liver oil or some form of iron.

(To be concluded.)

Correspondence.

LETTER FROM TORONTO.

The American Public Health Association.—A New Section.

TORONTO, August 31, 1908.

The thirty-sixth annual meeting of the American Public Health Association was held in Winnipeg, Canada, on the 24th, 25th, 26th, and 27th of August, under the presidency of Dr. Richard H. Lewis, of Raleigh, N. C. The committee in charge of the arrangements of the meeting consisted of Dr. R. M. Simpson, of Winnipeg (chairman), who is also chairman of the Manitoba Board of Health; Dr. Gordon Bell, of Winnipeg; Dr. J. M. Eaton, of Carberry, Man.; Dr. F. L. Schaffner, M. P., of Biossevain, Man.; Dr. H. H. Chown, of Winnipeg; Dr. R. S. Thornton, M. P. P., of Deloraine, Man.; Dr. B. J. McConnell, of Morden, Man.; Dr. A. J. Douglas, M. H. O., of Winnipeg; Dr. J. A. Macdonald, of Brandon, Man.; Dr. James Patterson, of Milroy; Dr. Bodn, of Winnipeg; and Mr. E. M.

Wood, secretary of the Board of Health of Manitoba. Seventy-three new members were added tothe roll. Ten registered from Mexico. The official welcome on behalf of the province of Manitoba was delivered by the Hon. R. P. Roblin, Premier of Manitoba, and Mayor Ashdown offered greetings on behalf of the city. In his annual address the president referred to the recent call of the President of the United States for a conference at the White House on the vital question of the conservation of the country's natural resources, and stated that he had attended that important conference as the representative of the association. He recommended that the American Public Health Association take similar action to that of other national bodies in appointing a special committee to act with the President's commission in that respect. Referring to the matter of a national bureau of public health and the kind of bureau wanted, he said that the kind most desired was one which would include within its scope and management all the specific health agencies of the government now in existence. He considered that the most efficient teacher of hygiene to the people was the family physician, but he was generally found very indifferent. He illustrated the line which education of the people in sanitary matters should take by referring to a supposed outbreak of diphtheria. As soon as the secretary of the State Board of Health was notified he could telegraph to the head of the national bureau. From that source the people could then be immediately supplied with the authoritative information on the subject. The people should also be instructed by a corps of lecturers sent through the country. The president considered that the wisest way to pursue in obtaining the national bureau of health medical men desired to see in the United States, as well as in Canada, was to positively endorse the Public Health and Marine Hospital Service, advocating its further enlargement and the transfer of such health agencies from other departments as would legitimately come within the jurisdiction of such a

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The afternoon session of the opening day was distinctly a Spanish one, two papers being delivered by Dr. Chico on smallpox. Dr. Elgin followed up these papers and gave his own experience in the matter of the effect of heat on vaccine lymph, and showed that in a range of temperatures from 65° to 15° C. the lymph's usefulness and reliability lasted from five minutes only at the higher temperature to four years at the lower. Dr. Evans, of Chicago, suggested this fact as a reason for the comparative failure of the vaccination of the troops in the Philippines, the lymph having twice crossed the ocean and having been subjected to an unusual degree of heat.

Dr. P. H. Bryce, chief medical officer of the Department of the Interior, Canada, contributed a paper on the Sociology of the Middle West. The paper opened with a reference to the farm acreage and value of the north central States from 1850 to 1900. Reference was made to the nationalities peopling these States; then the comparison was drawn with what Canada had done in the West in the past few years. The prophecy was made that the West in its progress would equal the States.

quoted. Dr. C. F. Fagan, of Victoria, B. C., medical health officer of the province of British Colum-

bia, read a paper on the same subject.

The report of the Committee on Ophthalmia Neonatorum was presented by Dr. F. Park Lewis, of Buffalo. It stated that a test made in ten schools, representing eight States and Ontario, showed that twenty-five per cent. of those first admitted to the schools were needlessly blind. The committee recommended that the public health officials should do everything possible to spread knowledge on the subject in general and its prophylactic and curative treatment; that all midwives should be examined and registered; and that proper records be kept in the maternity hospitals of the numbers of cases of ophthalmia.

The paper of Dr. Francisco De P. Bernaldez, of Mexico, on the Methods of Practising Vaccination with Human Lymph, was read in English by his colleague Dr. Chico. The paper recited the approved method in Mexico as adopted by the Vaccination Department of the Board of Health as follows: The region in which the vaccine is to be inserted is washed with sterilized water, soap, and a brush, the skin being rubbed until it becomes red, and then dried with sterilized cotton. The lancets are dipped in boiling water or passed through the flame of an alcohol lamp. The pustules are cleansed entirely with sterilized water and cotton. They are very superficially scarified and not used if they bleed. A small quantity of lymph is taken up on the lancet and the inoculation made in the person to be vaccinated by means of small punctures, almost joining each other and six to eight in number. The lancet leaves the lymph spread over the place where the punctures have been made. The punctures do not reach below the dermic layer of the skin. The object is to produce pustules in a series, making only one scar, numerous pustules, and painless vaccination. They can be easily examined to find whether they present the characteristics of true vaccination. Any other method leaves the operator in doubt as to whether the individual has obtained immunity or not.

The next interesting paper on the best method to practise vaccination was read by Dr. Miguel Merquez, of Chihuahua, Mexico. Like his colleagues he regarded puncture as a better method than scraping, and experiences gained in 30,000 vaccinations confirmed that. He considered that animal vaccine was safer than human, although in countries where there were no properly organized institutes for the culture of animal vaccine, the latter

could be used to good advantage,

Smallpox in Ontario was dealt with by Dr. James Roberts, M. H. O., of Hamilton, Ont. He spoke of an outbreak in Hamilton of eighty cases which had cost that city \$10,000. In nearly every case there had not been any vaccination at all, or at least none of recent character. Although in Ontario there were stringent laws compelling vaccination of all persons over three months old, the people were neglecting vaccination now as the ravages of small-pox were becoming less. He also considered that too many physicians were careless in establishing quarantine in mild cases. In discussing this, Dr. Evans, of Chicago, stated a committee should be

appointed to prepare a case against the arguments of the antivaccinationists and to secure the proper dissemination of such arguments.

A paper which attracted a good deal of attention and discussion was that by Dr. C. A. Hodgetts, secretary of the Ontario Board of Health. The title was Mortality Statistics of Canada during the Decade. That Canada was not a country for suicides was an interesting point brought out in the paper. He stated that the suicides of Canada for 5,000,000 of people only amounted to 147. One delegate considered this most remarkable, as he came from a city of 200,000 where the mortality from suicide was 112. The statement had considerable doubt thrown upon it, as in some provinces the collection of vital statistics is not proceeded with at

all, and in others only perfunctorily.

A new section in the work of the association was opened this year. It is constituted by municipal health officers. It had a programme of eight papers, as follows: The Rural Health Officer, by Dr. Charles A. Hodgetts, of Toronto; Protection of Public Milk Supplies, from Specimens Contaminated with Pus Organisms, by Professor J. O. Jordan, of Boston, Mass.; Problems of Quarantine in Contagious Diseases Work, by Dr. Francis George Curtis, of Newton, Mass.; Management of Infectious Diseases in Rural Municipalities, by Dr. L. M. Cleghorn, of Baldur, Man.; Approved Methods, the Chicago Health Department, by Dr. W. A. Evans, of Chicago; The Advantages of Publicity in Public Health Work, by Dr. Ernest C. Levy, of Richmond, Va.; Some of the Hopes and Pleasures of the Health Officer, by Dr. Charles V. Chapin, of Providence, R. J.; Disinfection of Rooms, by Mr. Bert R. Rickards, of Boston, Mass.

Dr. J. A. Amyot, bacteriologist of the Provincial Board of Health of Ontario, read a paper entitled Pollution of the Great Lakes and Rivers. These included an area of 98,640 square miles, and over 4,000,000 people were now using this source of water supply. The turbidity was generally not more than two parts to the gallon, except in Lake Erie, where it was from twenty to twenty-five parts. He made reference to the fact that Toronto had recently voted \$3,700,000 for the disposal of its sewage and the filtration of its Lake Ontario water, and was hoping for a big reduction in its typhoid and intestinal mortality. The conclusions drawn by most of the speakers was that this water supply of

the great lakes was perfect.

Dr. C. O. Probst, secretary of the association and also secretary of the State Board of Health of Ohio, advocated in a paper the control of the water supply by the State. Dr. Cressy L. Wilbur, chief statistician of the Bureau of the United States Census, Washington, read a paper in which he said that vital statistics were the Cinderella of modern public hygiene. She sat in the chimney corner and sifted the ashes of dusty figures while her proud sisters, Bacteriology and Medicine, went to the ball and talked about the wonderful things they had done. But the glass slipper fitted no other foot, and when we descended to facts and not mere empty bombast about the results of administrative work, we looked to vital statistics. What did we know about infant mortality, which all were so anxious to prevent,

when not a single State or city in the United States had the data for a correct statement? It depended upon the accurate registration of all births. What did we know about the facts of tuberculosis, while health officials acting as local registrars allowed deaths to be reported as "probably tuberculosis" and "possibly tuberculosis?"

Dr. J. N. Hurty, of Indianapolis, chairman of this section, deplored the fact that no State or province in North America at the present time col-

lected accurate statistics.

In his paper entitled The Purpose and Object of Morbidity Statistics and the Methods of Collecting Them, Dr. J. M. Eager, of Washington, pointed out that one method for improving the gathering of complete statistics was the payment of a fee. In those States where a fee was paid the returns were more complete.

Dr. Charles A. Hodgetts, of Toronto, secretary of the Ontario Board of Health, was elected presi-

dent of the association.

Therapentical Hotes.

Hyperæsthetic Rhinitis.--In the treatment of so called hay fever, a disease which, according to Sajous (Monthly Cyclopædia and Medical Bulletin for August, 1908) involves the internal secretions and to which he applies the more correct term, hyperæsthetic rhinitis, in view of the fact that the disease may be evoked by many irritants other than new hay, it is advised that attention should be paid to the pseudoform of the disease which is provoked in the presence in the nose or nasopharynx of polypi, exostoses, turbinal hypertrophies, etc. These projecting morbid tissues, mainly by irritating the sensory terminals of the surface opposed to them, render hyperæsthetic, not only this surface, but also the centre to which the sensory impulses are transmitted, that of the fifth nerve pair. Such cases are often not only sensitive to many pollens, but also to many commonplace irritants. They are readily cured, he asserts, by properly executed removal of the morbid growths, but in such a way that no adhesion or synechiæ are left between the opposed surfaces. Cauterization of the hyperæsthetic areas caused by them, by the local application of glacial acetic acid, chromic acid, or galvanocautery, tends further to insure recovery. In the number of the Monthly Cyclopædia and Medical Bulletin cited he instances cases of cures effected by caustic applications to the hyperæsthetic areas and describes the modus operandi of remedies administered internally, first showing how the morbid symptoms are awakened by the atmospheric irritants. When these specific irritants appear in the air, as interpreted from his standpoint, the violent sensory impulses transmitted to the trigeminal centre provoke reflex dilation of the arterioles which supply blood to the mucosa of the nose, sinuses, conjunctivæ, etc., and all these structures become intensely congested the exciting cause of the distressing symptoms. He therefore argues that beneficial effects can be obtained by remedies which either locally, or by acting on the sympathetic centre, provoke constriction of the dilated arterioles. He condemns the use of cocaine solutions, which, while effective, are dangerous owing to their liability to produce a cocaine habit in the patient. Far safer and just as efficient, according to him, is a weak-1 to 10,000-solution of adrenalin chloride, prepared with normal salt solution. This solution by depleting the engorged mucosa affords the patient considerable comfort, and this effect may be sustained by spraying over the constricted mucosa a solution of menthol in any light petrolatum oil, of the strength of five grains to the ounce. A saturated solution of quinine used as a spray, followed by the application of an oint ment composed of thirty grains of quinine and one ounce of petrolatum, are recommended by Fulton. These measures, however, should only be regarded as palliative, serving to relieve stenosis, allay irritability, and control excessive secretion.

As internal treatment belladonna has given Dr. Sajous the best results when used in conjunction with local treatment. To adults he gives 1/120 grain of atropine three times daily until slight dryness of the throat occurs, when the effect may be sustained by one or two doses daily. When asthma complicates the case he employs instead the follow-

ing preparation:

paroxysm is arrested.

Earlier in the article Sajous speaks of the gouty diathesis as being an underlying cause of hay fever, this diathesis being attributed to an inadequate breaking down of wastes. The only remedy which has served him faithfully in counteracting the gouty diathesis is desiccated thyreoid, which acts by enhancing, as do the iodides, the catabolism to toxic wastes. It may be given in two grain doses twice daily for three days, then once daily only. Strychnine in 1/50 grain doses after meals enhances the action of the thyreoid extract by stimulating the vasomotor centre and increasing the oxygen intake.

Medicinal Treatment of Acute Ecthyma.--In the belief that acute ecthyma is due to syphilis. Shoemaker (Monthly Cyclopædia and Medical Bulletin for August, 1908) gives the following com-bination of mercury and iodine to combat and arrest the disease:

Corrosive sublimate,gr. ii; hours after each meal.

He advises the following treatment of the ulcers: After the parts involved have been thoroughly cleansed with soap and water, the ulcers should be dressed with a I to 2,000 solution of corrosive sublimate, after which they may be dusted freely with a powder containing equal parts of calomel and boric acid. If they are resistant to this treatment it is recommended to cauterize them lightly with either pure carbolic acid or stick silver nitrate. These caustics are said to stimulate the ulcers to healthy granulation and bring about a rapid cure.

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NEW YORK, SATURDAY, SEPTEMBER 5, 1908.

TUBERCULOUS DISEASE AND THE RED CROSS.

On June 29th the first tuberculosis day camp of the American National Red Cross was opened in Schenectady, under the auspices of the Schenectady County Subdivision of the New York State Branch of the Red Cross. It is the first of five Red Cross day camps established or to be established this summer in America. It is announced that a camp will be opened in Albany within a short time and another in New York on October 1st. Other Red Cross day camps have been established in Washington, D. C., and Wilmington, Del.

The Schenectady camp is situated in a pine grove on high flats in the southeastern part of the city. It has two permanent wooden buildings, an office and a kitchen, and on platforms a large dining tent, two hospital tents, one for men and the other for women, and two conical tents for night campers. A medical visiting committee, whose members visit the camp in turn for an hour or two a day, is composed of Dr. C. F. Clowe, Dr. H. L. Towne, Dr. Peter McPartlon, and Dr. J. H. Collins. The camp is in charge of a superintendent, Miss Sarah B. Palmer. who was in charge of the floating hospital in New York city for three years. The nurse is Miss Rose Hofmeister, formerly of Utica; a temporary nurse has served at night part of the time; the camp has also a cook to prepare the noon meal and the milk, eggs, etc., served at other hours of the day.

The camp opened with six patients and now has fifteen, the probable limit this year. The camp will be open until November 1st and perhaps longer. The design was to take only incipient and moderately advanced cases, but it has been difficult to draw the line in the new undertaking, and the camp has four patients with fairly advanced cases. One of them is confined to bed. Several patients sleep at the camp. The camp has received its patients from the municipal dispensary. Home supervision will be given by local organized charities.

The Albany camp, which it is expected will open soon under the supervision of the Albany Subdivision, will be situated on Kenwood Heights, on land generously furnished by the Albany Hospital for Incurables. The camp arrangements are in charge of a committee of which the medical members are Dr. Howard Van Rensselaer, Dr. Henry Hun, and Dr. Charles K. Winne. The camp's limit this first year, for the day camp alone, will be about fifteen patients. Incipient and moderately advanced cases only will be handled. The committee is, for purposes of cooperation, a subcommittee of the local Tuberculosis Committee of the State Charities Aid Association.

The New York city camp is to be conducted by the New York County Subdivision of the Red Cross, and will be established on the roof of the Vanderbilt Clinic. The clinic will fit up the roof and will supply medical supervision to the camp. The New York County Red Cross will supply nurses, attendants, and nourishment to the forty or more patients to be received. Inasmuch as the clinic is a member of the Association of the Tuberculosis Clinics of the city, the Red Cross will thus be brought into the organization. The camp will open on October 1st and will continue during the day all the year around. After the first few months. it is probable that it will be open day and night. The superintendent of the camp will be Mr. Charles B. Grimshaw, superintendent of the clinic, and supervision will be given by members of the regular staff of the clinic. The capacity of the camp will be at least forty and probably more patients. Patients with incipient and moderately advanced disease will be received, and when the camp is in operation for the whole twenty-four hours it is expected that more advanced cases can be handled.

The day camp idea is said to be really a contribution of the German Red Cross. It was adopted only after thorough investigation and after recommendation to the Red Cross by the National Association for the Study and Prevention of Tuberculosis. The day camp has been found to be of proved value in this country as well as abroad. The first day camp

in the United States was opened in Boston some three years ago, and has given such a good account of itself that it has been taken over by the new Consumptives' Hospital in Mattapan. Other camps have also been conducted in Boston, Salem, Mass., Washington, D. C., and New York (on the disused ferry boat Southfield, conducted last year by the Charity Organization Society and this year by Bellevue Hospitai). The camp has, in fact, come to be recognized as a valuable part of every progressive plan for the relief and control of tuberculous disease, and therefore offers a wide field for useful work on the part of an organization so large and influential as the Red Cross, while at the same time its relative inexpensiveness and simplicity of conduct will not require the raising of large sums or the maintenance of a large force of workers.

We learn that the Red Cross, national and local, has practically no funds with which to carry on this work, since it retains for its own use no part of the millions of dollars which pass through its hands, for they are given for the specific purpose of mitigating suffering in given localities, and since its membership dues are merely nominal and hardly meet the expense of organization. The relatively small emergency fund at national headquarters is available only for war and disaster, and the endowment fund only for national calamities of the greatest magnitude. The national charter does not permit of the deflection of the funds to such a use as that of the camps, and, moreover, it would not generally be deemed wise to do so. The Red Cross is therefore appealing for voluntary contributions, and we are confident that these contributions will be received in amounts sufficient to conduct a large number of day camps similar to those already instituted.

THE DANGERS OF CARBOLIC ACID DRESSINGS.

M. Salva Mercadé contributes to the July number of the Archives générales de médecine a useful summary of our present knowledge of the occasional untoward effects of certain antiseptics as they are employed in surgery and of the means of reducing them to a minimum. He begins with the consideration of carbolic acid, or phenol. This agent, now no longer the invariable accompaniment of surgical operations, has still, he thinks, all its pristine usefulness for spraying carbuncles and as a lotion after the incision of phlegmonous inflammations. In most cases it is from the use of solutions as a dressing that bad effects are observed, and their intensity seems to have no direct relation

to the strength of the solution. Gangrene, the most important of them, is clinically of the dry variety, coming on without pain, but changing the color of the integument to yellow, brown, or black. The tissues become dry and horny, and in two or three weeks the mortified parts separate. According to Levai, weak solutions are more dangerous than strong ones, for the reason that they do not cause such a degree of superficial induration as to interfere materially with the penetration of the agent. Most of the cases of gangrene have resulted from the use of solutions weaker than five per cent. The modus operandi is still uncertain; some observers think it is by the production of venous thrombosis, others interpret it as a toxic action on the trophic nerves, and yet others explain it as a chemical action producing coagulation of the albumin. The use of alkaline solutions at the outset has been advised to combat the tendency to gangrene, but usually the trouble has already progressed so far when medical aid is sought that only surgical measures are available.

General poisoning with carbolic acid may come on suddenly, even during the operation, or it may be slow in making its appearance, especially when phenol lotions have been employed to excess. It gives rise to violent headache, and convulsions have been observed. Loss of appetite is rapidly followed by nausea and vomiting. The respiration is modified, and the pulse becomes small. The urine is blackish. Pallor of the face is associated with sweats, coldness of the extremities, and reduction of the general temperature to 97°, 95°, or even 93° F. These phenomena are manifested within a few hours, and death takes place very rapidly. If recovery occurs, it is slow, occupying from eight to ten days. Besides these manifestations of grave poisoning, Prat has observed two instances of paralysis of accommodation in children who had been operated upon for hydatid cysts of the liver. In the first case recovery occupied three weeks after the use of phenol lotions had been stopped; in the other case it occurred immediately on the cessation of their employment.

The treatment is, above all, preventive; on no account must a phenol solution be allowed to stagnate on the surface of a wound. When signs of poisoning have been noted, the use of phenol must be stopped at once. In the acute form of poisoning the collapse may be combated by subcutaneous injections of ether, by caffeine, by frictions, and by hot water bags. The activity of the kidneys may be promoted by the free ingestion of liquids and by injections of serum. The internal employment of a five per cent, solution of sodium sulphate has been

recommended. Magnesium sulphate also may be used. By such treatment one may hope to engage the phenol in the formation of harmless phenolsulphates.

THE ÆTIOLOGY OF TYPHUS FEVER

It is seldom to-day that one has an opportunity to see a case of typhus fever, that serious disease which in former times was the cause of so many deaths in crowded institutions and camps. It has been said that the disappearance of typhus fever is a triumph for modern medicine, but it appears that nineteenth century sanitation is rather to be credited with it. Yersin and Vassal (Philippine Journal of Science, April) have had an opportunity to study a few cases. Among about a thousand coolies who had been imported into Nhatrang, Annam, from Tonquin there were five cases of a disease characterized by the sudden onset of fever with prostration and delirium, which continued for from ten to twelve days and then ended by crisis. In all the cases there was marked conjunctival injection. Although there was no rash, the authors diagnosticated these cases as typhus fever.

They tried in vain to reproduce the disease in laboratory animals, such as the rat, the guinea pig, and the rabbit. They then injected half a cubic centimetre of blood from one of the patients under observation into a healthy person of the same nationality; the donor was in the second day of the disease. In fourteen days the recipient had an attack of fever exactly like that from which the donor was suffering. The febrile paroxysm lasted for eleven days, giving a curve which was exactly like that shown in the naturally acquired disease, and ended by crisis in eleven days. There were no spots in this case, but the conjunctival injection was marked. This experiment was repeated in another person, the blood being obtained from the same donor as in the first experiment, on the fifth day of the disease. Half a cubic centimetre was injected into the recipient. In this instance the incubation period was twenty-one days. The clinical phenomena repeated themselves exactly, and the attack ended by crisis on the twelfth day. In diagnosticating these cases Yersin and Vassal have been careful to exclude spirillar fever, malarial fever, typhoid fever, kala-azar, and dengue.

The cause of the disease was not discovered, all investigations of the blood resulting in failure to find formed elements that could be considered in an ætiological relation. They suggest that the disease is probably transmitted by insects. Such an hypothesis would explain the extreme contagious-

ness in the old epidemics, and also the disappearance of the disease with improved sanitary conditions in the jails, asylums, and barracks in Europe and the United States.

KERATIN.

Dr. P. G. Unna and Dr. L. Golodetz, of Hamburg, have continued their researches and experiments with the horny substances (Monatshefte für praktische Dermatologie, July 15th). The first results of their studies we spoke of in our issue for September 28, 1907. Our authors used for their studies human horny material and cows' horn, and modify somewhat their former conclusion. They state that these substances are made up of keratin a, keratin 3, and soluble albuminous substances the composition of which has not yet been determined. Keratin a corresponds to the membrane of the horny cell, and forms the most resistant part of the cell. Chemically, it is generally composed of 53 per cent. of carbon, 7 per cent. of hydrogen, 14 per cent. of nitrogen, 1.75 per cent. of sulphur, and 0.6 per cent, of ash. Keratin 3 and the soluble albuminous substances form the contents of the horny cell, and are approximately composed of 48 per cent. of carbon, 6.5 per cent. of hydrogen, 15.6 per cent. of nitrogen, 2.2 per cent. of sulphur, and 0.5 per cent. of ash. An important distinction in the constitution of keratin α and keratin β is to be found in the high proportion of carbon in keratin a, about five per cent, higher than in keratin β . The horny layer of the human skin contains thirteen per cent. of keratin α and ten per cent. of keratin β , while the rest is formed by the soluble albuminous substances. Cows' horn contains about six per cent. of keratin α and thirty-six per cent. of keratin β , and the rest is soluble albuminous substances.

The authors sum up the results of their studies thus: While it has been so far the generally accepted opinion that the horny substances are especially distinguished in their chemical composition from other albuminous substances by a much higher proportion of sulphur (three to five per cent.), and the cornification been thought to proceed because of an increase of sulphur, it has now been proved that keratin a, which represents the last, the purest, and the most uniform product of cornification, is relatively poor in sulphur (containing about 1.75 per cent.). Even the proportion of sulphur in keratin β , which has less power of resistance and is not such a pure product, is relatively low. A high proportional amount of sulphur is, therefore, not a characteristic sign of horny products in distinction from other albuminous substances.

A CORRECTION.

In our last issue, in an article entitled The International Congress on Tuberculosis, we said: "The sessions are to open on September 21st and to continue until October 12th, but the section meetings will all be held during the week beginning on September 28th." Instead of "sessions are" we should have said exhibition is.

Rems Stems.

Changes of Address.—Dr. Carl A. Williams, from New London, Conn., to 14 Oreard Street, Worcester, Mass. The New Nurses' Home in Claremont, N. H., in connection with the General Hospital, was dedicated with suit-

able exercises on August 21st.

The Alvarenga Prize of the College of Physicians, Philadelphia, has been awarded to Dr. William T. Shoemaker, of Philadelphia, for an essay on Retinitis Pig-

International Congress for School Hygiene.—The third International Congress for School Hygiene will be opened at Paris, France, March 29, 1910. For all information in regard to the congress apply to Dr. R. Dinet, rue

Cermuschi, Paris, France. Charitable Bequests .- By the will of Mrs. Randolph

Townsend, who died recently in Rugby, England, the Samaritan Hospital, Troy, N. Y., will receive \$50,000.

By the will of Mrs. Mary A. Baird, the Litchfield County Hospital, Winsted, Conn., will receive \$10,000.

Cholera in Russia.-According to press despatches, cholera is spreading in Russia, and has reached the city of Lodz, in Russian Poland. The German health authorities have increased their vigilance, and hundreds of medical inspectors have been stationed along the eastern frontier.

The Elmira, N. Y., Academy of Medicine.—The regular meeting of this academy was held on Wednesday evening, September 2d. The programme included a paper by Dr. J. A. Westlake entitled The X Ray in the Treatment of Cancer, and a paper by Dr. W. S. Cain on Typhoid Fever.

Examination for Medical Superintendent of Craig Colony.—The New York State Civil Service Commission announces that an examination will be held on September 26th from which to make certification to fill the position of medical superintendent of the Craig Colony for Epileptics. Sonyea. N. Y., made vacant by the recent resignation of Dr. William P. Spratling.

The New Corps of Nurses for the Navy.- It is reported that one of the first drafts of female nurses, from the new corps that is soon to be formed from graduates of schools of nursing, after passing the required examinations, will be made for the Naval Hospital at Canacao, Cavite As soon as practicable also a number of nurses will be sent to the Naval Hospital at Yokohama, Japan.

The Uniform of the Army Medical Reserve Corps. It has been prescribed by the War Department that the uniform for the officers of the Army Medical Reserve Corps will be the same as that of officers of the Medical Corps, except the insignia, which will be the caduceus of gold or gilt, superimposed in the centre by a monogram of dull finish bronze, bearing the letters R. C., for the full dress, dress, and white coats. For the service coats the caduceus will be of dull finish bronze metal, superimposed in the centre by the monogram in gold or gilt

The China Medical Missionary Association.-Plans are being made for the next meeting of this association, which is to be held in Hankow in the spring of 1910. members of the Central China Medical Missionary Assomembers of the Central China Medical Missionary Asso-ciation will constitute a Committee on Arrangements and Entertainment, with power to appoint a local Executive Committee. A Committee on Programme has been ap-pointed, the members of which are required to secure papers to be read at the meeting of the association. An important question to be discussed at this meeting is the advisability of accepting Chinese graduates as members of the association

Contagious Diseases in Chicago .- During the week ending August 22, 1908, there were reported to the Department of Health the following cases of transmissible diseases: Diphtheria, 60 cases; scarlet fever, 38 cases; measles, 16 cases; chickenpox, 2 cases; typhoid fever, 20 cases; whooping cough, 8 cases; tuberculosis, 41 cases; minor diseases, 2 cases; total, 187 cases.

The Health of Michigan .- During the month of July, 1908, the following cases of communicable diseases were reported to the State Department of Health: Pneumonia, 52 cases; tuberculosis, 47 cases; typhoid fever, 110 cases; diphtheria, 69 cases; meningitis, 32 cases; whooping cough, 75 cases; scarlet fever, 96 cases; measles, 151 cases. There were 70 deaths from pneumonia and 207 deaths from tuber-

culosis during the month. Phonographic Lectures on Tuberculosis.-The phonograph is to appear in a new rôle. The New York State Charities Aid Association has prepared six traveling tuberculosis exhibitions, which are to be shown at all the county fairs held in the State, and in connection with the exhibition a large talking machine will be used to tell the people something about the prevalence of tuberculosis in the State, the cause of its spread, the means whereby it may be prevented, and how it may be cured. Selections from comic operas and popular airs will be interspersed with these talks on tuberculosis.

Scientific Society Meetings in Philadelphia for the

Week Ending September 12, 1908: Monday, September 7th.—Philadelphia Academy of Sur-gery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Asso-

ciation; Northwestern Medical Society.
Tuesday, September 8th.—Philadelphia County Medical

Society.

Wednesday, September 9th.—Pathological Society.
Thursday, September 10th.—Northern Medical Association; West Branch, Philadelphia County Medical Society.

Officers of the American Public Health Association.-At the annual meeting of this organization, which was held in Winnipeg, Canada, during the week of August 24th, the in Winnipeg, Canada, during the week of August 24th, the following officers were elected for the ensuing year: Presi dent, Dr. Gardner T. Swarts, of Providence, R. I.; first vice president, Dr. R. M. Simpson, of Winnipeg; second vice president, Dr. Jesus Chico, of Mexico; third vice president, Major Charles F. Mason, of the Medical Corps of the United States Army; secretary, Dr. Charles O. Probst, of Columbus, Ohio; and treasurer, Dr. Frank W. Wright, of New Hayen, Coun. The association will meet next year in New Haven, Conn. The association will meet next year in Richmond, Va.

The Fourth International Electrotherapeutic Congress was held in Amsterdam during the past week, under the presidency of Dr. J. K. A. Salomonson, professor of neuro-pathology in the University of Amsterdam. The first congress was held in Paris in 1900, the second in Berne in 1903, and the third in Milan in 1905. The congress was divided into four sections, namely: Electrophysiology and pathology, diagnosis and therapeutics by electrical methods. diagnosis and therapeutics by x rays, and the study of various radiations and the technic of electrotherapeutics. The formal title of the association is Congrès International de Radiologie et d'Electrologie Médicales.

A New Nurses' Home for the Kings County Hospital. —Plans are being prepared for a new nurses' home and training school for nurses, to be erected on the grounds of the Kings County Hospital, Brooklyn. The site, which is at the westerly end of the grounds and fronts on Clarkson street, near New York avenue, is 105 feet long and 110 feet deep. The building will be five stories high, and will be constructed of red brick, with limestone and terracotta trimmings. On the first floor will be the quarters of the superintendent, a library, demonstration classrooms, study rooms, a lecture hall, two reception rooms, the nurses' dining room. and several bedrooms. The second, third and fourth floors will be occupied by bedrooms, and on the fifth floor will be a gymnasium and a sun parlor. The work of construction will be begun this fall, and it is expected that the building will be ready for occupancy in about a year from now. The building of the Nurses' Home is only one of the many improvements planned for the Kings County Hospital, the facilities of which are entirely inadequate to meet the demands made upon it

The Health of Pittsburgh .- During the week ending August 22, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Pittsburgh: Chickenpox, 5 cases, o deaths; typhoid fever, 31 cases, 3 deaths; scarlet fever, 13 cases, 1 death; diphtheria, 7 cases, 2 deaths; measles, 9 cases, I death; whooping cough, 3 cases, I death; pulmonary tuberculosis, 17 cases, Io deaths. The total deaths for the week numbered 145, in an estimated population of 565,000, corresponding to an annual death rate of 13.34 in 1,000 of population.

Personal.-Dr. William W. Keen, of Philadelphia, who has been abroad for more than a year, has returned home. Sir William Macewen, F. R. S., M. D., regius professor of surgery in the University of Glasgow, has been appointed

by King Edward to be one of the honorary surgeons in Scotland, in the place of Sir Patrick Heron Watson, M. D.,

Dr. Samuel S. Bernheim, of Paris, president of the French Society for the Study of Human Tuberculosis, arrived in New York on August 31st. He was deputed by the French Government to attend the International Tuberculosis Congress, but, before going to Washington, Dr. Bernheim will visit the principal cities of the United States and investigate the sanitary measures employed in American factories to prevent the spread of tuberculosis.

Society Meetings for the Coming Week:
Monday, September 7th.—Utica, N. Y., Medical Library
Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford,

cine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, September 8th.—Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay, N. Y., Medical Society in Medical Society of the Borough of the Bronx, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond N. Y.

County of Richmond, N. Y. THURSDAY, September 10th .- Blackwell Medical Society of

Rochester, N. Y

The Mortality of Chicago .- According to the report of the Department of Health of the City of Chicago for week ending August 22, 1908, the deaths from all causes reported to the department during the week was 575, which was 45 less than for the previous week and 109 less than for the corresponding period in 1907. The annual death rate in 1,000 of population, in an estimated population of 2,166,055, was 13.84, as compared with a death rate of 16.92 for the corresponding week in 1907. The principal causes of death were: Apoplexy, 12 deaths; The principal causes of death were: Apoplexy, 12 deaths; Bright's disease, 34 deaths; bronchitis, 4 deaths; consumption, 53 deaths; cancer, 32 deaths; convulsions, 5 deaths; diphtheria, 3 deaths; heart diseases, 34 deaths; intestinal diseases, acute, 196 deaths; nervous diseases, 10 deaths; pneumonia, 27 deaths; searlet fever, 5 deaths; suicide, 7 deaths; sunstroke, 3 deaths; typhoid fever, 5 deaths; violence, other than suicide, 28 deaths; whooping cough, 4 deaths; all other causes, 112 deaths. deaths; all other causes, 113 deaths

The Health of Philadelphia.-During the week ending August 22, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 65 cases, 6 deaths; malarial fever, 1 case, 1 death; scarlet fever, 13 cases, o deaths; chickenpox, I case, I death; diphtheria, 42 cases, 2 deaths; measles, 15 cases, 3 deaths; whooping cough, II cases, 5 deaths; pulmonary tuberculosis, 97 cases, 41 deaths; pneumonia, 23 cases, 12 deaths; erysipelas, 2 cases, 0 deaths; puerperal fever, 2 cases, 2 deaths; cancer, 21 cases, 28 deaths; mumps, 2 cases, 0 deaths; mumps, 2 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, to deaths; diarrhox and enteritis, under two years of age, 81 deaths. The total number of deaths from all causes was 490, in an estimated population of 1,532,738, come pending to an annual death rate of 16,62 in 1,000 of The total infant mortality was 166; 138 under one year of age, and 28 between one and two years of age.
There were 46 still births, 25 males and 21 females.
Vital Statistics of New York.—During the week end-

ing August 22, 1908, there were reported to the Department of Health of the City of New York 1,385 deaths from all causes, as compared with 1,334 for the previous week, and 1,600 for the corresponding period in 1907. The number of deaths in each of the five boroughs was as follows: Manhattan, 726; the Bronx, 104; Brooklyn, 437; Queens, 73; and Richmond, 45. The annual death rate in 1,000 of population was 16.34, in an estimated population of 4,104,304, as against a death rate of 19.48 for the corresponding period in 1907. The death rate of Brooklyn was the lowest of the five boroughs, being 15.27; while that of Richmond was the highest, being 30.61. The death rate of Manhattan was 16.52; of the Bronx, 16.56; and of Queens, 16.37. the total number of deaths 600 were of children under five years of age, and of these 328 were due to diarrheal diseases. There were 153 deaths from pulmonary tuberculosis, as against 149 for the corresponding week in 1907. were IIO violent deaths: 4 from sunstroke, 4 from homicide, 16 from suicide, and 86 from accidents. Four hundred and twenty-eight marriages, 2,486 births, and 132 still

births were reported during the week.

The Mississippi Valley Medical Association.—The thirty-fourth annual meeting of this association will be held at the Seelbach Hotel, Louisville, Ky., on October 13, 14, and 15, 1908. The preliminary programme, which has just been issued, includes a long list of papers on subjects of interest to the general practitioner, and judging from the titles of the papers and the high standing of their authors, the meeting promises to be one of unusual interest and value. Ample entertainment has also been provided for the visiting physicians and their friends. The address of welcome on behalf of the State will be delivered by the Hon. A. E. Willson, governor of the State of Kentucky; the address of welcome on behalf of the city of Louisville will be delivered by the Hon. James F. Grinstead, mayor of the city; and the address on behalf of the local profession will be delivand the address on behalf of the local profession will be delivered by Dr. Lewis S. McMurtry. The address in medicine will be delivered by Dr. George Dock, of Ann Arbor, Mich., on Tropical Disease in the Mississippi Valley, and the address in surgery will be delivered by Dr. Arthur Dean Bevan, of Chicago, on the Surgery of the Kidney. The officers of the association are: President, Dr. Arthur R. Elliott, of Chicago; first vice president, Dr. F. F. Law-rence, of Columbus, Ohio; second vice president, Dr. R. C. McChord, of Lebanon, Ky.; secretary, Dr. Henry Enos Tuley, of Louisville, Ky.; and treasurer, Dr. S. C. Stanton, of Chicago.

An International Congress for the Suppression of Food and Drug Adulteration.—The first international congress for the suppression of adulteration of food stuffs and pharmaceutical preparations will be held in the University of Geneva, Geneva, Switzerland, on September 8th, and last four days. The objects of this congress, the first of its kind. are to promote the establishment of uniform, international standards of purity for food stuffs and pharmaceutical products, and to formulate the measures which should be taken to suppress the various forms of adulteration and sophistication which are so prevalent. The programme is very comprehensive. Food stuffs, for example, will be considered under three groupings, as follows: (1) Wines, alcoholic beverages, beer and cider; (2) milk, butter, cheese. meats, tinned goods, etc.; (3) cocoa, coffee, tea, flour, sugar, spices, pastries, etc. Another group will include natural and artificial mineral waters, soda beverages, crude drugs pharmaceutical and galenical preparations. The aim of the pharmaceutical and galenical preparations. The aim of the congress has received the active support of the various governments, the following list of adherents being from the United States: Dr. H. W. Wiley, chief of the Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.; Dr. S. T. Armstrong, general medical superintendent of Bellevue and Allied Hospitals, New York; Dr. W. D. Bigelow, Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.; Dr. L. F. Kebler, U. S. Department of Agriculture, Washington, D. C.; Dr. H. H. Rusby, College of Pharmacy Columbia University. New York: Dr. College of Pharmacy, Columbia University, New York; Dr. Henry M. Whelply, of St. Louis; Dr. L. E. Sayre, of Lawrence, Kansas; Dr. E. H. Jenkins, of New Haven, Conn.; and Mr. B. T. Fairchild, of New York. The congress owes its existence to the activity of the Universal Society of the White Cross of Geneva, which was founded some time ago for the purpose of accomplishing in time of peace what the Red Cross Society is organized to do in time of war. The general aim is to unite all the efforts made in different countries to combat infectious diseases, tuberculosis, social ills caused by drink and adulteration of food stuffs, and diseases due to poverty, squalor, etc. The fee for titular membership is \$4 and ordinary membership \$1.20. Dr. H. W. Wiley, of Washington, D. C., chairman of the American committee, will undertake to forward names of members and their subscriptions.

Bith of Current Titerature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

August 27, 1908.

The Psychopathic Hospital and Psychiatrical and Neurological Wards, By Philip Coombs Knapp. Remarks upon the Present Status of Sanatorium Treatment for Tuberculosis,

By VINCENT Y. BOWDITCH.

By Julius Friedenwald. Gastromyxorrhœa, Renal Insufficiency; The Importance of its Early Recognition, By S. M. RANDALL. Recognition.

Gastromyxorrhœa.-Friedenwald describes this disease and its treatment. It designates the presence of small quantities of mucus appearing occasionally in the fasting stomach, and it may be intermittent or continuous. The ætiology is doubtful. In intermittent cases the mucus may come from the nose, mouth, pharynx, in continuous it may be a mixture of the secretion of the superficial epithelium and of the mucous glands. The attack of intermittent gastromyxorrhœa may begin with headache, loss of appetite, nausea, etc., but more usually begins in the midst of perfect health, often early in the morning soon after awakening. The most striking symptom of this paroxysmal attack is severe vomiting, which is intractable in the true sense of the word, inasmuch as it cannot be successfully combated by any remedy. The vomited matter consists of large quantities of tough, slimy liquid. finally of bile and intestinal juices, but contains no food remains. Pain in the region of the stomach is not present, or if it is, it is of no moment. During the attack the stomach refuses to retain food, drink, or medicine. The patient feels wretched, the abdomen is retracted, the pulse small, the tongue dry, and the quantity of urine much diminished. The attack may extend over a period of one day, or may continue from three to five or even twelve days. The attack usually ceases quite suddenly, and after the cessation of the vomiting, the patient can again take food without any annoyance. The patient enjoys good health during the interval of the attacks and often has none or very slight dyspeptic symptoms. The examination of the gastric contents after a test breakfast in the interval generally reveals a normal percentage of hydrochloric acid and only a slight amount of mucus. It has been stated that lavage of the stomach may, when given at the beginning, terminates the attack. Friedenwald has had no success with lavage. Morphine given hypodermically often gives temporary relief, and in cases of extreme exhaustion and weakness, normal salt solution enemata or infusions may be indicated. Between attacks attention should be directed to the underlying condition; that is, to the neurotic tendency, and for this purpose change of climate, hydrotherapy, massage, and electricity, as well as iron and arsenic, have been recommended. Inasmuch as this disorder may be secondary to diseases of other organs, a careful investigation should be made as to the primary disorder, which, if possible, should be relieved.—There are no characteristic symptoms of continuous gastromyxorrhœa, and the condition may be discovered in some cases even in which

there are no subjective symptoms whatever. The diagnosis is established by the discovery of large quantities of mucus in the fasting stomach, shown to be the product of the gastric mucous membrane, and not originating from other sources, such as the nose, mouth, or pharynx. It is of no importance whether subjective symptoms are present or not. Lavage should be practised for the removal of the mucus providing there is no contraindication to this procedure; instead of this method of treatment administration of mineral waters is advised by some, these being chosen with reference to the nature of the associated disease, the general condition of the patient, and of the various gastric functions.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION August 29, 1908.

- Chronic Peritonitis with Complete Obstruction, Caused by Numerous Constrictions, of a Previously Unde-scribed Character, throughout the Intestine, By Miles F. Porter.
- Röntgenology in Neurology,
 By Mihran K. Kassabian.
 Experiments on an Ash Free Diet and Salt Metabolism,
 By Elliott P. Joslin and Harry W. Goodall.
 Abdominal Cervical Cæsarean Section,
- By F. PFANNENSTIEL.
 Abdominal Cæsarean Section, as Performed at the Society of the Lying-in Hospital of the City of New York, with an Analysis of 186 Cases,
- By Ross McPherson.
- The Preparatory and After Treatment of Abdominal Section,

 Obstetric, Septic, and Anæsthetic Toxæmias,

 By Henry T. Byford.

 By H. G. Wetherill.

 A Summer Camp for the Treatment of Sick Babies,

 By Walter Graham Murphy.

 A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities,

 By C. F. House
- By C. F. HOOVER.
- 10. Venesection and Cardiovascular Affections, By JUDSON DALAND.
- 11. Infection of Operative Wounds by Malignant Disease,
- By I. S. Stone.

 12. Nasal Analgesia as a Prognostic Symptom in Dry
 Catarrhal Deafness,
 By Dunbar Roy.

 13. Experiments toward a Physiologically Isotonic Solution of Salts,
 By Herman M. Adler.
- Röntgenology in Neurology. Kassabian
- states that the Röntgen rays have been invaluable in detecting the ætiology of nervous manifestations, the result of disease of the osseous system. The rays are not a substitute for, but only an adjunct to, the neurologist's investigations. Changes occurring in the osseous system (resulting in neurological symptoms) are readily detected by the rays. The distinctive diagnosis between epiphysitis and neuritis is readily accomplished. Osteitis and periostitis are readily distinguished and diagnosticated by this agent. Neurological conditions dependent on old and unreduced fractures and dislocations, and pressure symptoms from excessive callus formation, are now readily diagnosticated. Supernumerary ribs and vertebræ formerly so rarely diagnosticated during life are easy of detection by the x rays, as is their distinction from aneurysm. Osseous tumors and exostoses are easily discernible. Troublesome pressure symptoms are thus readily accounted for. Osseous atrophy and hypertrophy are recognizable by the x rays, and their study is important because of the diseases with which these conditions are associated. The osseous changes occurring in acromegaly and

cretinism are well brought out skiagraphically and are easy of distinction. The value of the Röntgen rays is of paramount importance in determining changes occurring in the articular system, whether due to pathological states in, near, or around a joint, as in the study of arthropathies, spinal joint affections, etc. The arthropathies of the tabes and dementia paralytica form an interesting study from a Röntgen ray viewpoint. The early, mild, advanced, and severe types of arthropathies present varying Röntgenograms. The distinctive diagnosis between tabes dorsalis and arthritis deformans presents a widely contrasting picture by the use of the rays. Brain tumors, clots, and cysts are more difficult of interpretation. Soft tissues do not cast shadows so dense as do the harder tissues, the growth is within a bony cage and may be far from the plate. Similarity of symptoms arising from aneurysms and mediastinal tumors are frequently distinguished by a skiagram. The skiagraphic detection, localization, and extraction of foreign bodies will frequently explain existing neurological manifestations. Dental studies have greatly progressed since the introduc-tion of the x rays. The headaches, neuralgias, etc., so often dependent on unerupted teeth, malpositions, etc., are now readily detected and remedied. The therapeutic action of the Röntgen rays is evidenced in their analgesic action, in their palliative and often curative effects in neuralgia, and in their causing an absorption or decrease in size of various growths and neoplasms. Painful pressure symptoms are thus mitigated.

3. Experiments on an Ash Free Diet and Salt Metabolism.—Joslin and Goodall have made studies on ash free diet and salt metabolism. They find that the withdrawal of salt from the body does not lead to the production of acid intoxication of the diabetic type nor does it increase an acidosis already existing. Œdema in cases of diabetes mellitus presenting marked acidosis frequently occurs coincident with restriction of the carbohydrates in the diet. This cedema is not due to the simultaneous administration of sodium bicarbonate, but it is probably caused by the increased production of acids causing injury to the kidneys during excretion, thereby leading to retention of salt. Patients in diabetic coma almost without exception present no signs of ædema, and show diminished chlorine in the urine if alkalies are given. The careful administration of salt along with sodium bicarbonate is recommended in the prophylactic and actual treat-

ment of diabetic coma.

7. Obstetric, Septic, and Anæsthetic Toxæmias.—Wetherill's reading, observation, and clinical experience lead him to believe that toxæmias of pregnancy, sepsis, sapræmia, late chloroform poisoning, etc., have many common characteristics, and from the standpoint of the clinician they may be grouped for study, prevention, and treatment. Chloroform may cause such toxæmias and liver lesion de novo; it aggravates existing toxæmias of the hepatic type. Pregnancy, retained blood, and clots of concealed hæmorrhage, the sapræmia from decomposing placental and fætal débris, sepsis, and the autointoxication of overfeeding and drinking and objectives and contraction of overfeeding and drinking and objectives are contracted to such liver lesions.

sions. Urinary insufficiency with acidosis and a high ammonia coefficient, retinal hæmorrhages and neuroretinitis, regurgitant vomiting of the mucous, bilious, grumous type, with or without slight jaundice, and with or without albuminuria, constitute the syndrome characteristic of such toxemias. Albuminuria, when it occurs, may be, and often is, late in developing, and should be regarded as secondary rather than primary, and as a result rather than a cause of the condition. In such toxemias of pregnancy with or without pernicious vomiting the uterus should be emptied at once, but without chloroform, and, if possible, without other anæsthesia. Fasting and forced elimination by the skin, kidneys, and bowels offer the best prospects for cure after, as well as before, the removal of the cause.

9. New Sign of Malingering. - Hoover observes that if a normal person, lying on a couch in the dorsal position, is asked to lift the right foot off the couch with the leg extended, the left heel will be observed to dig into the couch as the right leg and thigh are elevated. If you place your hand under the tendo Achillis of the left side and sense the muscular resistance offered by the left leg you will observe that the left heel is pressed on to the couch with the same force which is exhibited in lifting the right leg off the couch. In other words, the left heel is employed to fix a point of opposition against the couch during the effort at lifting the right leg. This will always occur if a healthy person makes a free and uninhibited effort to lift the right leg. If the movements are carried out in the reverse order the same principle holds true; i. e., if a normal person is requested to press the right leg against the surface of the couch there will be a counter lifting force exhibited in the left leg. If a patient suffering from hemiplegia or monoplegia of a leg is requested to lift the extended and paretic leg off the couch it will be observed that the other leg offers the opposition described whether there is any voluntary muscular strength exhibited or not on the affected side. If the hemiparetic patient is asked to lift the normal leg off the couch against resistance he will exhibit an opposition with the paretic leg which is directly proportional to the voluntary muscular strength he is able to employ when a display of voluntary muscular power in the paretic leg is exacted. When the upper extremity is involved this sign is sometimes demonstrable on the normal arm, but at other times it is wanting. In two cases in which paresis of one leg was alleged by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the assertion of paresis of the lower extremity as the result of injuries. In both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to the author's demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

MEDICAL RECORD

August 29, 1908.

Plague: Mode of Dissemination and Methods for Control, By J. C. Perry.
Simplification of the Jacoby-Solms Ricin Method

A Simplification of the Jacoby-Solms Ricin Method for Pepsin Determination, By Max EINHORN. Tuberculosis Other than Pulmonary Treated with Tuberculin—Report of Cases, By G. R. Pogue. Early Diagnosis of Carcinoma of the Sigmoid.

By EDWARD MILTON FOOTE
The Painful Cutaneous Zones in Visceral Disease, By M. D. BLOOMFIELD.
Four Cases of Perforating Ulcers of the Alimentary Canal, By H. BEECKMANN DELATOUR.

r. Plague.—Perry observes that in towns threatened with plague sanitary measures should be instituted to place them in as good a condition as possible from a rat standpoint. The effective way to repel an invasion is to be prepared to meet it. A careful watch should be maintained in order to detect unusual mortality among rats, and upon the appearance of the disease in these animals the most energetic measures should be instituted to eradicate the infection. Rat plague should receive the same consideration as if the cases were in man. Plague is generally introduced in healthy localities (I) by rats and their fleas, and (2) by infected cargo or food, man and his effects being of secondary importance. Plague is transmitted from rat to rat by fleas, and these insects are also responsible for the transmission of plague to man in the majority of instances. The most effective measures for the control of the disease in infected centres are rat

destruction, evacuation, and inoculation.

2. A Simplification of the Jacoby-Solms Ricin Method for Pepsin Demonstration.—Einhorn has simplified the Jacoby-Solms ricin test. His apparatus consists of a cylindrical glass, surrounded by a vacuum. This glass tube contains a frame holding twelve graduated pepsin tubes. The whole apparatus can be filled with water and corked. Each pepsin tube is marked with a different letter and shows a mark at 2 c.c., 3 c.c., and 3.5 c.c. The lower part is, furthermore, graduated into millimetres. Thus we may dispense with pipettes and measuring glasses. Use it as follows: Fill each pepsin tube up to 2 c.c. with I per cent. ricin solution, then add up to the 3 c.c. mark filtered and diluted stomach contents, and finally add decinormal hydrochloride acid solution up to 3.5 c.c. The tube is well corked, shaken up thoroughly, and then placed into the frame. The letters on the tubes identify the various dilutions. The vacuum tube is filled with fairly hot water (50° to 60° C.), the frame with the pepsin tubes is placed in it, then the apparatus is corked and allowed to stand for half an hour. Observations are taken of the time at which the deposits in the various tubes disappear and are noted. After thirty minutes the amount of precipitate left in any of the tubes is recorded. The advantage of the modification lies in the fact that the test is simpler, that a thermostat is not needed, and that it consumes less time. In making the test, the dilutions of 10, 20, 40, and 100 are most serviceable. Normally, the precipitate disappears in a dilution of 10 or 20. If a precipitate is present at 10 the pepsin is diminished, if it disappears at 40 the pepsin is increased. In achylia or marked subacidity the filtrate is used undiluted or only slightly diluted (2 to 5 times).

3. Tuberculosis Other than Pulmonary Treated with Tuberculin.-Pogue reminds us that the capsule of the tubercle is a nonvascular fibrous structure, which serves two purposes: It protects the tissues against the growing and multiplying bacilli; it also protects those same bacilli from the bactericidal substances that may be present in the tissues. whether those substances are the product of natural or artificial immunity. Recently we have heard much about producing immunity by the use of certain tubercle bacilli products introduced into the system, but investigation shows that any immune bodies thus produced have no action upon the encapsulated bacilli. We cannot get around the fact that Nature's way of arresting and curing tuberculosis is the only method by which we may hope to win, viz., by encapsulation, and this encapsulation must be complete. In visible tuberculosis, as of the eye, pharvnx, larvnx, or mucous membrane, it has long been noticed that some hours after an injection of any of the tubercle bacilli products, in small doses, a congestion is always produced around the tubercles. Such hyperæmia aids in the production of new tissue to the capsule, where Nature has already made an attempt to protect the host. This is what might be considered as the second physiological action of tuberculin. In the stimulation of the production of tuberculoopsonins, Wright has shown the necessity for the small dose. The same small dose produces the hyperæmia around the tubercle. Seven years' experience with tuberculin. used in small doses, has convinced one of its value in properly selected cases. At no time has the author found it necessary to increase the dose to anything like that advocated by some writers. Tubercle bacilli preparations seem to have a double action when introduced into the circulation of a tuberculous individual, especially in the early stages of the disease: (1) The stimulation of the production of tuberculoopsonins, which opsonins have a certain unknown action on tubercle bacilli that are free in the tissues, so preparing them that they are readily taken up and presumably destroyed by the phagocyting leucocytes. (2) The causing of a hyperæmia around the tuberculous area, thus aiding the process of encapsulation. In both cases the small dose, is called for. We have only begun to learn. in a small way, the value of tubercle bacilli products in the treatment of tuberculous lesions. the physiological and therapeutic action of the drug becomes better understood, its application in suitable cases will become more general. Tuberculin can never be considered a specific in tuberculosis. but at the present time we know it as a most valuable adjuvant to other well recognized therapeutic agents in the treatment of tuberculous lesions in the early stages of the disease. When tuberculin was first introduced by Koch, its properties and action were practically unknown. Each man who used it seemed to have his own ideas as to dosage and physiological action. Even to-day we know but little about its physiological action, but there seems to be a more rational idea as to dosage. The work of Wright has given us an explanation of the action of tuberculin which seems very feasible, especially under certain conditions, viz., when the tubercle bacilli are free in the tissues and can come in contact with the body juices and the phagocyting leucocytes, as in open tuberculosis. In closed tuberculosis, conditions are different. A diagnosis of tuberculosis can never be made until after tubercle formation has taken place. Not only has tubercle formation taken place, but very probably many generations of tubercles have formed and ruptured before the lesions have become large enough to produce symptoms from which we could make a diagnosis.

BRITISH MEDICAL JOURNAL

.lagust 15, 1908

Pyopericardium in Children Under Twelve Years of Age. By F. J. POYNTON. Age, By F. J. POYNTON.
Some Considerations Regarding Pneumonia in Chil-

dren. Drawn from an Analysis of 500 Cases,

The Physiological Antagonism Between Aconite and Belladonna.
A New Apparatus for Chloroform Anæsthesia,
By N. H. Alcock.

5. Zinc Ionization in Chronic Urethritis,
By P. C. Fenwick.
(Seventy-sixth Annual Meeting of the British Medical Association.)

Association.)

Section of Physiology.

A Discussion on the Scientific Education of the Medical Student,

Section of Navy, Army, and Ambulance.

The Transport of Sick and Wounded by Railway,

By W. G. MacPherson.

The Indian Subordinate Medical Department,

Ry C. H. L. DE LA FERTÉ.

By C. H. J. DE LA FERTÉ. By E. M. WRENCH. Lessons from the Past,

The Military Home Hospitals Reserve, By G. E. Twiss

By G. E. I Wiss.

11. The Treatment of Syphilis by Arylarssonates,
By F. J. Lambkin.

12. Prophylaxis Applied to Venereal Disease in the Navy
Afloat,
By N. H. Mumkerv.

13. Oral Sepsis in the Services,
By P. J. Probyn.

14. Prevention of Malaria Among the Troops in Singapore,
By H. H. Johnston.

1. Pyopericardium in Children. - Poynton states that pyopericardium in young children may occur in a general pyæmia, as a sequence to a local infection, complicating, for example, suppurative otitis media, osteomyelitis or septic wounds. In such cases septic abscesses may be found throughout the Pericarditis under such circumstances is a deadly complication. In young children, under twelve years of age, pyopericardium is almost invariably associated with pulmonary disease, which is most commonly pneumococcal in origin. The condition is met with in males and females equally, but eighty-three per cent. occur before the fourth year of life is completed, and two thirds (sixty-six per cent.) between the ages of one and three years. Primary pyocardium is excessively rarc. Diagnosis is beset with difficulties. The first one is the usual absence of pericardial friction. The poisons leading to pyopericardium have a more peptonising or digestive power than the rheumatic; and so the exudations are softer and more creamy in consistence and less harsh-hence friction is much less frequent. The early age of the patient furnishes another great difficulty in diagnosis. Then there are almost invariably signs of severe pulmonary disease, such as pneumonia, pleurisy, and empyema, all of which distract attention from the heart. Lastly there is the absence of endocarditis. The cases may be grouped into three classes: 1. The acute, running their course in about four weeks, and including twenty

per cent. 2. The subacute, lasting from four weeks to six months, and including fifty per cent. 3. The chronic, with insidious onset lasting from six months to over a year, and including seventeen per cent. Among the more important signs are progressive muffling of the heart sounds synchronous with enlargement of the cardia area, together with marked percussion dulness over the pericardium and sometimes posteriorly in the interscapular region. Tubular breathing or absent breath sounds may also be noted in the interscapular region. 2. A rapid and extensive increase of the cardiac dulness upwards towards the left clavicle. 3. The pearshaped outline of a distended pericardium. 4. The abrupt transition from the dulness of fluid to resonant lung tissue. 5. A wavy and diffuse pulsation to the left of the sternum. The most common error in diagnosis is the mistaking of half truth for the whole-stopping short at pneumonia or empyema. Another mistaken diagnosis is tuberculosis. The prognosis of suppurative pericarditis in small children is exceedingly grave, and unless a specific serum be obtained, improvements in diagnosis will not help us in treatment. Surgical intervention at present offers the best chance of success.

2. Pneumonia in Children.—Dunlop's article is based on a series of 500 cases of pneumonia in children. Of these 147 were of the lobar variety, 85 occurring in boys, and 62 in girls. An immense majority of these cases occurred in the winter and spring months. Forty-five cases occurred in children under two years old. Distant, faint, or absent breathing, or breathing of an indeterminate or jerky character accompanied by an almost tympanitic percussion note, is very typical of an early pneumonia, especially when accompanied by harsh puerile breathing on the opposite side. The crepitant râle, so distinctive of the early stage of pneumonia in the adult, is more frequently absent than present in the child, and the physical signs may disappear with extreme rapidity. Pain is a common symptom but is apt to be referred to the abdomen rather than to the thorax. Convulsions occurring at the commencement of the disease, and replacing the chill in the adult, are not of great moment. But convulsions occurring late in the disease almost invariably herald an early fatal issue. Convulsions rarely occur in children over two years of age. Extreme slowness and irregularity of the pulse in convalescence, indicates a profound toxemic influence of the pneumococcus on the cardiac muscle. Empyema is the commonest complication. Of the 353 cases of bronchopneumonia, 120 were primary, and 233 secondary. The diagnosis is often difficult. The following points aid in differentiation from lobar pneumonia: (1) The more disseminated character of the lesion in the lung, (2) the remissions in the temperature, (3) the greater amount of cyanosis and dyspnœa, and (4) the more troublesome character of the cough. Auscultation is more reliable than percussion, and every inch of lung should be examined, as the pneumonic patches are often very small. Unlike in lobar pneumonia, resolution usually takes place very slowly. The following are the chief points to be considered in estimating the prognosis: 1. The primary disease; those cases which occur after measles, whooping cough and diphtheria, were exceedingly fatal, giving a death rate of 54.4 per cent. 2. The younger the child the worse the prognosis; 64.4 per cent. of the deaths occurred in children under two years of age. 3. The greater the extent of the lungs involved the less is the chance of recovery. In seventy-three per cent. of the deaths, both lungs were affected. 4. The poorer the previous health of the child the graver the prognosis. In the great majority of deaths the children were wretchedly nourished and developed. 5. When a child suffers from severe forms of rickets the prognosis is always grave. In thirty-four per cent. of the deaths severe rickets existed. 6. Diarrhœa seriously affects the prognosis. This condition was present in twenty-four per cent. of the deaths. 7. A temperature of 105° F. adds greatly to the gravity of the case; 60 per cent. of these cases died. 8. A pulse rate over 180, and a pulse respiration ratio of 1 to 2, or 1 to 11/2, is always serious. 9. The highest mortality was in the cases which had lasted for several weeks.

LANCET August 15, 1908.

The Opium Habit and Morphinism,

By SIR D. DUCKWORTH.

Traumatic Enophthalmos,
A Case of Kala Azar,
Malignant Disease of the Stomach, Associated with
Malignant Disease of the Glands above and behind
the Extremity of Each Clavicle,
Observations Made upon the Phagocytosis Occurring
with Human Blood Serum when Mixed in Vitro

with Horse Serum,

6. Excision of the Tonsil; Its Operative Technique, By H. Upcorr.
7. The Treatment of Immature Cataract, By H. SMITH.

The Treatment of Immature Cataract, By H. SMITH. Renal Calculi; Nephrolithotomy, Subsequent Nephrec-

Renal Calculi; Nephrolithotomy, Subsequents tomy on account of Hæmorrhage.

By H. A. Lepiard and W. Templeton.

9. Note on a Case of Vesical Calculus, the Nucleus of Which Was a Revolver Bullet, By C. F. Lassalle.

10. The Treatment of Spina Bifida by Drainage of the Cerebral Subdural Space, By P. PATTERSON.

11. Digest of a Midwifery Notebook, 1858-1891, By L. F. West.

Phagocytosis in Human and Horse Serum. 5. Phagocytosis in Fullian and Shattock and Dudgeon have investigated the rise in the opsonic value of the blood that takes place when horse serum is administered to the human subject. Their conclusions are as follows: The opsonic value of normal horse serum is decidedly lower than that of normal human serum or than that from patients suffering from chronic pulmonary tuberculosis. There is nothing noteworthy in the behavior of horse serum as studied by saturation with deopsonising agents. Saturation with Staphylococcus pyogenes aureus or with Bacillus coli considerably reduces the phagocytosis towards both these organisms. Saturation with human red blood has a somewhat similar effect in regard to both the microorganisms named. Horse serum does not increase phagocytosis by reason of the agglutinin it contains, as distinguished from its opsonin, as heating the serum to 60° C. (which removes the opsonin but leaves the agglutinin) so markedly reduces phagocytosis that this possible factor is negligible. The admixture of horse serum to normal human serum in vitro does not, after incubation, raise the opsonic value of human serum, but on the contrary reduces it. The admixture of horse serum to the serum of a patient suffering from chronic pulmonary tuberculosis does not after incubation in vitro raise the opsonic value of the tuberculous serum. The admixture of horse serum to the serum of a patient suffering from chronic pulmonary tuberculosis does not after incubation in vitro and allowing the immune cells to work in the mixture raise the opsonic value of tuberculous serum.

6. Excision of the Tonsil.—Upcott discusses the extrabuccal removal of malignant growths of the tonsil. The following is a summary of the steps of the operation in the case of a medium sized growth of the tonsil without obvious glandular enlargement. 1. While the patient is being anæsthetized inject subcutaneously 1/100 grain of atropine. Perform tracheotomy or laryngotomy, and pack the pharynx and mouth with gauze (this may be deferred to a later stage if thought necessary). 2. Make a slightly curved incision from the mastoid process along the anterior border of the sternomastoid to the level of the thyreoid cartilage. 3. Raise the patient's head, tilting the table to an angle of between thirty and forty degrees. 4. Define and retract the sternomastoid. Ligate and divide the common facial vein. Open the carotid sheath at the level of the upper border of the thyreoid cartilage. retract the internal jugular, and apply the clamp to the external carotid at its origin, tightening the clamp until the pulsations of the vessel are controlled. 5. Clear away all visible lymph glands and the submaxillary salivary gland. Ligate the facial vessels. 6. The submaxillary triangle is now empty. Define the posterior belly of the digastric and the posterior margin of the hyoglossus with the styloglossus passing over it. Retract the styloglossus downwards (the hypoglossal nerve is below the operative field), draw the posterior belly of the digastric with the great vessels backwards; if the stylopharyngeus comes into view it is also drawn backwards with the glossopharyngeal nerve. The superior and middle constrictors are now exposed in the floor of the wound. Carry the dissection upwards beneath the jaw, following along the internal pterygoid as far as possible. 7. Dry the wound thoroughly and then pack it with gauze impregnated with vaseline. (If tracheotomy was not done at the beginning of the operation it should now be performed and the pharynx plugged.) 8. Drill the jaw in two places near its lower border just in front of the masseter. Saw through the jaw obliquely. 9. Draw the ascending ramus outwards, cutting the internal lateral ligament if necessary. Define the lingula with the finger, and pass a hook around the inferior dental nerve, draw it from its canal and cut off. If the inferior dental artery is seen it should be secured. 10. Pass a finger into the mouth and place its tip against the anterior margin of the growth. Open the pharynx with scissors in front of the finger. Continue the incision upwards and downwards until its ends are beyond the limits of the growth. Change the glove of the infected hand. Seize the divided edges with forceps and cut backwards from the ends of the incision until the growth can be delivered from the wound; draw it outwards and divide its posterior attachment. This. step might be performed wit hthe galvanocautery, the surface of the tonsil being cauterised as it was.

drawn out. 11. Suture the pharynx with two layers of stout catgut. The edges should be turned in towards the throat. The first layer should be interrupted, commencing at the bottom, the ends of the stitches being left long in order to draw down the upper and more inaccessible parts of the wound. However wide the opening may be an attempt should be made to draw together the edges. This will most likely be possible in the lower part of the wound where the pharyngeal walls are more freely movable. 12. Take out the petrolatum gauze packing and remove the clamp from the carotid. Tie any vessels that may bleed. 13. If any of the muscles of deglutition have been divided in the course of the operation they may now be sutured. Replace the ramus of the jaw and wire it in position. 14. Close the wound, leaving the upper part open for a large drainage tube which must pass down to the pharyngeal suture line and should be packed round with gauze. A smaller tube should be placed in the lower angle of the incision.

LA PRESSE MEDICALE

July 18, 1908

The Lipoids By HENRI ISCOVESCO. Trial of a New Therapeutical Method,

By RENÉ DE GAULLAC 3. Have the Misdeeds of Syphilis Been Exaggerated? By R. ROMME.

1. Lipoids.-Iscovesco follows Overton in designating by this name substances which may be extracted from the fluids or the peranchyma of tissue by the solvents of fatty matters, such as ether, chloroform, and benzol. These bodies present marked analogies with fat and form with water colloidal pseudosolutions. They are quite numerous, and the writer proposes to divide them into four groups, the neutral fats, the fatty acids, the soaps, and the lipoids proper. The latter he subdivides into two classes, those which contain phosphorus and those which do not. He then discusses their preparation, their distribution in the organism, and their physicochemical properties.

r. Locomotor Ataxia and Surgery,
By Professor Debove.
By J. J. Matignon.
Deboye

Locomotor Ataxia and Surgery.-Debove concludes that locomotor ataxia presents a condition which forbids the intervention of the surgeon.

LA SEMAINE MEDICALE July .22, 1908.

The Part Played by the Lipoids in the Phenomena of By L. AMBARD. Hæmolysis,

The Part Played by the Lipoids in the Phenomena of Hæmolysis.-Ambard presents a critical review of the literature on this subject and concludes that the study of this question is not sufficiently advanced to permit the formation of any general conclusions.

July '9, 1908

Submitting, Abscess in Woman, By I. LILLYRS

Suburethral Abscess in Woman.-Lejars reports a case of abscess beneath the urethra at the mouth of the vagina met with in a woman thirtyseven years of age. He then discusses the anatomy of the periurethral region and various tumors met with there.

BERLINER KLINISCHE WOCHENSCHRIFT. July 20, 1908.

1. Gangrene of the Skin in Rheumatoid Scarlet Fever,

Antiformin, a Bacteria Dissolving Means of Disinfection,
By UHLENHUTH and XYLANDER

Further Studies Concerning the Antitryptic Action of Human Blood Serum, Particularly that from Cancer

Patients, By L. Puncture of the Brain, By L. Brieger and Johannes Trebing. By Fedor Krause.

Contributions to Morphine-Scopolamine Narcosis By B. KORFF.

The X Ray Treatment of Seborrhæa Oleosa,

By H. E. SCHMIDT. Concerning the Discovery of the Eberth-Gaffny Bacillus in the Cerebrospinal Fluid in Typhoid Fever, By L. SILBERBERG.

Epidemics and Their Management, (Concluded), By S. ALEXANDER.

9. Studies Concerning the Guaiac Test for Blood,

IO. Reply to K. Schröder's Article "Studies Concerning the Guaiac Test for Blood,"

By O. Schröder.

By O. Schröder.

By O. Schumm.

II. The Surgical Treatment of Exophthalmic Goitre,

By August Hildebrandt.

1. Gangrene of the Skin in Rheumatoid Scarlet Fever.-Hübner reports a rare case of this nature in which the skin over the right elbow joint became gangrenous over a surface, 9 cm. long by 8 cm. broad. He states positively that the gangrene was not due to embolism, but does not explain its occurrence.

6. X Ray Treatment of Seborrhœa Oleosa.-Schmidt finds the results of x ray treatment to be equally good in seborrhœa oleosa as in chronic eczema, lichen simplex chronicus (Vidal), lichen ruber verrucosus, and psoriasis. As both the sebaceous follicles and the sweat glands are apparently more sensitive to the x rays than the hair follicles, no injury of the skin in the form of atrophy or teleangiectasis is to be feared, even when weak irradiations are rendered necessary by a recurrence.

7. The Eberth-Gaffny Bacillus in the Cerebrospinal Fluid of Typhoid Fever Patients.-Silberberg presents the following conclusions: The Eberth bacillus appears to be present in the cerebrospinal fluid of patients with typhoid fever with tolerable frequency. Hence the bacteriological examination of the cerobrospinal fluid furnishes a new diagnostic point in cases of disease suspected to be typhoid fever. The agglutinating properties of the cerebrospinal fluid of typhoid fever patients to the Eberth bacillus is very slight. The bactericide properties of this fluid to this bacillus are much more marked. The physical and chemical properties of the cerobrospinal fluid of typhoid fever patients do not differ from the normal. The withdrawal of a certain quantity of the cerebrospinal fluid from patients suffering from typhoid fever is often of favorable influence on the condition of the patients.

8. Epidemics and Their Management.-Alexander sums up his long paper in the following four conclusions: 1. A well organized board of health is an important aid in the prevention and stamping out of epidemics. 2. All branches of the public board of health must be prepared in times of no epidemic for use when epidemics suddenly appear, and must be entrusted with the incident problems. 3. In like manner during the prevalence of epidemics the preparations of the public board of health must be kept in constant readiness and in touch with other

measures adopted for their control. 4. For the performance of its tasks during the prevalence of an epidemic it is recommended that the official board of health be associated with a medical board.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT July 21, 1908

Concerning an Improvement of My Serum,
By DEUTSCHMANN.
The Demonstration of Sparse Typhoid Bacilli,

By CONRADI.

Further Studies Concerning the So Called Ultramicro-scopic Infection Carriers, By GIEMSA and PROWAZEK. By BEST.

Myopia and Its Prevention, Hermaphrodism in Man, By HEGAR. Needs of a Psychiatric Reform in the Penal Code, By CRAMER

- Treatment of Acute Coryza, By Löwe. Volar Luxation of the Ulna Complicated with Typical Fracture of the Radius. Ulnar Paralysis,
- Contribution to the Casuistics of Suicide During Labor, By VON SURY. 10. Pulmonary Stenosis Produced by Traumatism,
- Concerning Measuring and Dosing of the X Rays in Absolute Unity. Röntgenolysis, By KLINGELFUSS. A New Use for the X Ray, By HOLZKNECHT.
- The Question of Acute Over Exertion of the Heart,
- Ву Ѕснотт.
- 14. Obituary of Eugen Albrecht Oberndorfer 15. Medical Conditions in Australia, By SCHÜTT.
- 2. Demonstration of Sparse Typhoid Bacilli. -Conradi makes use of the fact that certain analine coloring materials exert a selective antiseptic action to protect the typhoid bacilli, such as malachite green, brilliant green, and picric acid. nutritive media for his cultures are prepared with these with the result that the colonies of typhoid bacilli flourish while concurrent bacteria do not. By this means the presence of typhoid or paratyphus bacilli can be demonstrated within twenty hours even when present in very small numbers.
- 4. Myopia and Its Prevention.—Best ascribes the development of myopia to two factors, near work, and a predisposition caused, it may be, by a faulty elasticity of the chorioid at the posterior pole of the eye, by thinness of the sclera, which in many cases is correlative to the faulty development of the chorioid, which in turn is often correlative with insufficient power of accommodation and convergence, and by the preponderance of the longitudinal portion of the ciliary muscles over the circular. The proportion borne by these two factors in the production of myopia in any given case cannot be readily determined ..
- 10. Pulmonary Stenosis Produced by Traumatism.—Leick reports the case of a young man, twenty years of age, who died of pneumonia. When he entered the hospital he presented the signs of a stenosis of the pulmonary valves in addition to the symptoms referable to the pulmonary condition. Autopsy confirmed the diagnosis of a high degree of stenosis of the pulmonary orifice, and the condition is considered to have been caused in the greatest probability by an accident in which he fell with his full weight on his chest and was rendered unconscious about five years before. From that time the symptoms of pulmonary stenosis were present, though they had never previously appeared.

ZENTRALBLATT FUR INNERE MEDIZIN July 18, 1908.

The Functional Test of the Kidneys by Means of the Salts of Iodine. By H. P. T. OLRUM. Salts of Iodine,

Functional Test of the Kidneys.-Olrum concludes from his studies that kidneys which are in a condition of granular atrophy excrete salts of iodine after a considerable delay (187 hours), while those which are in a state of parenchymatous inflammation, with the exception of the cases of secondary atrophy, show a normal or increased excretion after the administration of the salts. In twelve cases of orthostatic and cyclic albuminuria, the excretion was also increased or normal. It appears that congested kidneys and those in cases of arteriosclerosis without granular atrophy show no excretory change.

ZENTRALBLATT FÜR CHIRURGIE. July 25, 1908.

Antifermentative Treatment of Suppurative Processes By H. KALACZEK without Incision. By L. RENNER. The Treatment of Burns,

Treatment of Burns .- Renner recommends as a dressing for burns of every degree a powder consisting of one part of bismuth subnitrate and two parts of kaolin. The burned area is first thoroughly cleaned, then thickly powdered and bandaged with sterile gauze. The thorough drying of the area and the absence of infection are the chief virtues of the treatment, while the formation of bullæ is almost entirely prevented. The author's results have been most excellent.

ZENTRALBLATT FUR GYNAKOLOGIE July 25, 1908.

I. Nuclear Jaundice of the New Born. By P. ESCH.
2. The "Serpentine" Uterus,
I. Nuclear Jaundice of Infants.—Esch nar-

rates the details of a fatal case of this condition in which the lenticular nucleus was found deeply icteric. The jaundice was also found intense in the striæ, in the floor of the aqueduct, and through the ependyma, the nuclei of the vagus and of the acoustic nerve could be seen deeply stained. The clinical picture of this disease has not been worked out. In the author's case and those of Schmorl and Beneke, the infant became intensely jaundiced early in life, very soon presented bulbar symptoms, and died in convulsions with tonic contractions of the extremities and muscles of the back. The diagnosis can only be occasionally made, while the prognosis appears to be uniformly fatal. The author utters a warning against regarding cases of icterus neonatorum as not being dangerous, especially when combined with convulsions and when occurring in premature and weak infants.

Broceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY Meeting of April 3, 1908 DR. CHARLES H. PECK in the Chair.

Hernia of the Lung.—Dr. Edward Adams presented a patient with hernia of the lung. The first case of this nature, he said, was reported in 1499.

since which time but forty-eight cases had been recorded. These forty-eight cases were classified as follows: Congenital, ten; spontaneous, eight; traumatic, thirty. During the civil war there were about 20,000 injuries to the chest wall, and among these were found but five cases of hernia of the lung. During the Russo-Japanese war not one case was recorded.

The patient shown was twenty-two years old, an iron worker in Buenos Aires. Two years ago, when lifting a heavy piece of iron, he felt something give way in his chest and soon noticed a bulging in the upper intercostal spaces. This was accompanied by pain. On inspection, there was found nothing except a slight bulging in the second and third intercostal spaces on the right side and near the median line; this bulging was more marked when he bent forward than when he was in the erect posture. Upon palpation, the swelling was found to be soft and elastic and not adherent to the skin. On percussion, it was found to be tympanitic. On auscultation, there was a slight exaggeration of the breath sounds with an increased vocal fremitus. The diagnosis was to be made from aneurysm, empyema, abscess of the lung, angeioma, lipoma, cyst, and cold abscess. An x ray picture showed nothing. Aspiration of the swelling gave negative results. The treatment consisted in a well fitting pad held in place by straps. If a cure was not effected in a short time, he intended to cut directly down and mattress suture the muscles with silver wire.

Dr. WILLIAM HENRY LUCKETT questioned the diagnosis. The patient could not produce this tume-faction while in the erect posture; if this was a heriai, he could produce it in whatever position he assumed. The tumor did not crepitate under the finger or on auscultation. He thought that it possibly might be a peculiar sacculation, possibly containing fluid. There might be a small opening, with a sac inside as well as outside the chest wall, a wallet shaped affair.

Dr. H. A. HAUBOLD believed the tumor was too near the median line to be a hernia of the lung. If the patient made a sudden exertion or took a deep inspiration, the lung would be driven toward the diaphragm, where there was room for it. He suggested that it might be a branchial cyst.

Dr. A. V. Moscowitz said he had carefully examined the tumor some time before, and believed it to be a hernia of the lung. He had seen one other such a case, and this presented similar symptoms.

Dr. WILLY MEYER had seen and examined the patient several weeks before and believed in Dr. Adams's diagnosis. The man got his hernia by lifting a heavy weight. The percussion sounds were those of lung, and readily made out. With increased intrathoracic pressure there was increase in the size of the swelling.

Dr. CHARLES A. ELSBERG called attention to the fact that, when the patient inspired, the skin over the tumor sank in, and when he expired it bulged out. He thought it might be a hernia of the pleura, the sac containing no lung, and formed by the parietal pleura.

Dr. Adams said that the physical signs pointed to hernia of the lung and to nothing else.

Perforating Gastric Ulcer; Gastroenterostomy. Dr. Whiteam C. Le & presented this patient.

Two weeks before his admission to the hospital he had been having pain after eating. One morning, about 9 o'clock, he was seized with sudden pain in the abdomen, which was followed by vomiting. Dr. Lusk saw him at 5 p. m. and found the abdomen rigid and tender, particularly over the region of the appendix, and to a less degree over the pit of the stomach. Fourteen hours after the onset of the attack an operation was performed. At the point of incision a pint and a half of pus gushed out. The appendix was found to be normal. Another incision was made above, and a small perforation was revealed in the anterior wall of the stomach at the upper portion, near the pylorus. There were adhesions around the gallbladder; the gallbladder was adherent over the entire front of the pylorus. The perforation was closed with three rows of chromic sutures uniting the gallbladder to the stomach and finally drawing a piece of fat from above and one from below together, over the line of union. A posterior gastroenterostomy, leaving no slack in the loop of the jejunum, was performed by suture. No irrigation was employed. There was little sponging, and the bulk of the pus was removed with large gauze pads tucked down into the pelvis. Proper drainage was used. The temperature promptly dropped, and the patient made an uninterrupted recovery.

Dr. Lusk called attention to some experiments on dogs by Fibich. Gastric ulcers were produced artificially. It was found that with no gastroenterostomy such ulcers remained unhealed as long as three weeks, whereas, when gastroenterostomy was performed at various intervals of time following the production of the ulcer, healing occurred within three or four days: The pulse in the case reported was no indication of the patient's real condition. The diagnosis was practically made on the physical signs, together with corroborative blood findings.

Bier's Hyperæmic Treatment. - Dr. WILLY MEYER believed that Bier's hyperæmic treatment was the best method of achieving certain results. Bier started his artificial hyperæmia in the treatment of surgical tuberculosis. He then read that pathologists had seen that patients with chronic hyperæmia of the lungs due to valvular heart disease would not be stricken with tuberculosis. On the other hand, a patient with stenosis of the pulmonary artery was apt to be stricken with tuberculosis. And on the basis of this Bier started his surgical investigations in 1892, and he and his followers had since shown results. Artificial hyperæmia was a powerful agent, rich in therapeutic results. Formerly physicians worked with remedies on a chemical basis; now, in addition, on a physical one. The profession now were only beginning to understand its value. He felt sure that as physicians knew more and more about it they would appreciate its value more and more. In Bier's hyperæmic treatment, instead of fighting the symptoms of inflammation, the point was to increase them by means of an increased amount of blood. To accomplish this they applied to the extremities an elastic bandage, to the head an elastic band, to the shoulders or testicles an elastic tube, etc. Over other inflamed regions of the body a glass apparatus was applied, which was as useful as the elastic bands. Eleven patients were presented by Dr. Meyer to show the results of the Dr. James Morley Hitzrot had usually got bad results in streptococcic infections of the superficial variety.

Dr. Lyle had used this treatment with success

and was very enthusiastic over it.

Dr. MEYER advocated long incisions in infections of the tendinous sheaths in osteomyelitis, etc., before applying the Bier treatment. The incision took care of the pus; artificial hyperæmia, of the inflammation. He then demonstrated the Kuhn mask for the production of artificial hyperæmia of the lungs.

Pneumothorax and Posture; the Importance of the Abdominal Position in Operations upon the Pleura and Lungs .- Dr. CHARLES A. ELSBERG read this paper. The dangers from the sudden entrance of air into the normal pleural cavity had impeded the progress of intrathoracic surgery, and much experimental work had hence to be done to discover means whereby we might guard against and overcome the dangerous respiratory embarrassment which was apt to ensue when the normal pleural cavity was invaded. Adhesions between the visceral and parietal layers of the pleura were, fortunately, present in from fifty to seventy-five per cent. of the cases with an inflammatory process; but, unfortunately, there were no known physical signs which enabled us to say whether or not such adhesions were present. Delagenière had pointed out that one could often prevent the occurrence of serious symptoms from the sudden collapse of the lung by quickly grasping the lung, drawing it into the wound, and fixing it there by sutures. The greatest advance in the surgery of the thorax had been made by Sauerbruch and Brauer, of Germany, with their cabinet and other apparatus, but they had been adopted by a very few, because of the great expense entailed.

During the past year Dr. Elsberg had done some experimental work on dogs in the Department of Physiology and Pharmacology at the Rockefeller In-If a small opening was made in the right or left pleura of a dog that was lying on the back, or on the right or left side, the animal would, in most instances, continue to breathe well, although the amount of inspired or expired air would be less than the normal. But such an animal was very sensitive to the slightest influence which disturbed the breathing, producing a typical pneumothorax dyspnœa. In almost all the animals in which the size of the opening approached or exceeded that of the trachea, dyspnæa and death followed, regardless of what part of the chest was opened. When, however, the animal was operated upon while lying flat upon its belly, not only could a small opening be made and the animal continue to breathe normally, but even a very large opening could be made and the breathing continue regularly and quietly; even one half the chest wall could be removed and the animal survive. Again, if a dog on its back with an opening in the chest, with typical violent dyspnæa due to the pneumothorax, was turned on its belly, the breathing would become regular and quiet again, and the pressure of air breathed in and out would be found to be several times as great as when the animal was on its back. On the other hand, a dog on its belly, with a large opening in one pleural cavity and breathing quietly, could be brought into a condition of grave dyspnœa and asphyxia by turning it on its back. These experiments seemed to show that, in dogs at

least, pneumothorax was better borne when the animal was on its belly than when it was in any other posture. It was also shown that pneumothorax was much better borne when the animal was deeply under the influence of an anæsthetic.

Dr. Elsberg had applied these results in his work at the Mt. Sinai Hospital. All the patients on whom operations were performed which required the opening of the pleura were operated upon while lying flat on the abdomen. He had operated upon a large number of patients with empyema, upon two with abscess of the liver, upon three with subphrenic abscess, and upon one with bronchiectatic cavity in the left lung. In all these the pleura was opened. The patients in whom a normal pleura had to be opened showed few untoward symptoms when the opening was made and air was allowed to enter the pleural cavity. In the patients in whom an operation for empyema was done, it was noted that with only one exception the coughing and interference with breathing that were regularly observed when the opening in the pleura was made for this affection, were entirely absent. He hoped that the abdominal posture in pleural and pulmonary operations would be tried by others

Arthritis Deformans of the Hip; a Preliminary Report of a New Operation .- Dr. FRED H. ALBEE read this paper. Arthritis deformans of the hip, he said, attacked young and middle aged adults as well as the aged. This condition had been known by many names, the most common being coxitis senilis, which was misleading and not appropriate. The true cause of this affection was still obscure. He believed that old age played a small part. The site of origin in arthritis deformans was still a disputed point, although recent authorities were inclined to consider it among the arthropathies of spinal origin. In the early stages of this disease the joint fluid was increased; later it was diminished. Changes in the cartilage were noted early, and the articular surfaces became thinned and finally disappeared entire-The head of the bone thus laid bare became smooth, polished, and eburnated. Marginal ecchondrosis or osteophytes appeared; they might become detached and appear as loose bodies in the joint. The acetabulum was deepened. The head of the femur wore away more and more, and the marginal outgrowths progressed toward the trochanter. neck of the femur hypertrophied and might bend, becoming more at a right angle with the shaft than normal. There was a consequent shortening of the leg. There were increasing adduction and flexion with permanent contracture or ankylosis. The disease began with pain in and about the joint. Muscular atrophy came on early. The arc of motion gradually diminished, until finally the joint becomes stiff. The amount of pain and effusion varied greatly. A very important diagnostic point was that, if motion existed in the advanced cases, it would be practically in one plane and in that of flexion. The earliest limitation of motion was in abduction and rotation. The acute form might simulate sciatica, articular rheumatism, gonorrhœal arthritis, infectious arthritis, and tuberculous hip disease. treatment was, first, to relieve the pain, and, secondly, to correct the deformity. The local treatment was more important than the general. Further traumatism should be prevented by protecting the joint.

Rest in bed with a traction apparatus if necessary would do much toward relieving discomfort. After the pain and joint irritability had been controlled, the patient was allowed to go about with a spica, with or without crutches; this enabled him to enjoy fresh air and mild exercise. Other therapeutic measures should be regarded as only accessories. A certain number of progressive and very advanced cases associated with marked deformity and disability demanded operative treatment. Those procedures which terminated in ankylosis had been observed to be the most successful, in respect to both comfort and efficiency.

Dr. Albee then gave the history of a patient, fiftynine years old, with advanced arthritis deformans of the right hip. The brace treatment was recommended and declined. Eleven months ago the patient came to him and asked if something could not be done for him. He was a powerfully built man, weighed 185 pounds, and walked with a marked limp. The right shoe was built up two inches and a half. The actual bony shortening was a quarter of an inch; the practical shortening two inches and three quarters. The leg was much atrophied and decidedly adducted and flexed. Attempts at passive motion were painful. A skiagraph showed the head of the femur much worn away and flattened, with many bony outgrowths about the rim of the acetabu-111111

In view of the disintegration of the joint, the great adduction and flexion, with firm contractures. in so large and powerfully built a man, with the leg in faulty position, with progression toward bony ankylosis, it seemed best to aim for immediate firm ankylosis with the limb in a position of slight overcorrection of the deformity to compensate for the existing practical shortening. Therefore, the operative indications were to devise a procedure which would, if possible, fulfil these requirements and at the same time produce of itself as little real bony shortening as possible.

The hip joint was reached by an anterior incision five inches long, starting from just below and to the inner side of the anterior superior spine of the ilium, and extending downward along the inner border of the sartorius muscle, which was retracted outward. The muscles and the deep structures were separated by blunt dissection, and the iliacus and the rectus femoris muscles were retracted inward. A part of the large ring of osteophytes about the rim of the acetabulum were turned upward with the soft tissues adherent to them. It was thought wise to leave as many as feasible, on account of their bone forming possibilities. In so thick a thigh, with the presence of so much bony outgrowth, it required some care to ascertain definitely the situation of the joint and head. With the head of the bone in situ, about one half of its upper hemisphere was removed with a large chisel through a plane at right angles to the long axis of the shaft of the femur. Then with the same instrument the acetabulum was transformed into a flat surfaced roof, against which the fresh surface of the head was finally brought into firm contact by abduction of the thigh. Upon further attempting abduction, it was found impossible, on account of the shortened adductors. An open division of these tendons and muscles was found necessary before the leg could be brought into proper position. The plain surfaces of the head and acetabulum were then brought together by simply abducting the thigh, and the capsule and soft tissues were then sutured. The leg was put up in a spica from axilla to toes in

strong abduction.

This operation had the following advantages: First, it assured a bony union, bringing two large bony surfaces together for ankylosis, and held them firmly by the mere correction of the deformity. Secondly, it produced a minimum amount of bony shortening. The patient made an uneventful convalescence and was walking with crutches at the end of four weeks. At the end of nine weeks he walked without cane or crutch and went back to his work as patrolman in four months. He had not suffered any pain since the operation, and the leg had remained in the corrected position. He had continued as a patrolman, working nine hours a day, and had not lost a day on account of his hip.

Dr. Albee had done this operation five times; all the cases were advanced ones of arthritis deformans. The ages of the patients were respectively thirty, sixty, sixty-three, fifty-five, and sixty-seven. shock was very slight in every case. This he believed was accounted for by the facts that the hip was not disarticulated and that there were very few structures cut, and all had healed by first intention. The results in all the cases were most favorable.

Xetters to the Editors.

STATE EXAMINATIONS.

SPRINGFIELD, ILL., August 18, 1908.

To the Editors:

The State of Illinois is the "great State" mentioned in your editorial of August 1st, under the heading of State Examinations, and the "chemistry paper" criticised by Dr. Willis G. Tucker, professor of chemistry in the Albany Medical College, is the chemistry paper presented by the Illinois State Board of Health to candidates at the examination on October 23-25, 1907. Unlike the editors, I do not agree with Dr. Tucker in his strictures, and I fail to find justification for the editors' assertion that the "average State examination is no trustworthy criterion of a candidate's title to the license to practise medicine.

Permit me to briefly discuss Dr. Tucker's criticisms on the questions under consideration. It may be unjustifiable to give so much weight to a matter like valency (question No. 1) in a medical examination. But Dr. Tucker will find that this is not the consensus of teachers in medical chemistry. Questions relating to valence are often given in medical examinations. These questions are doubtless deemed of importance, but, important or unimportant, it may be said that question No. 1 and the other questions discussed by Dr. Tucker compare very favorably with some of the questions in chemistry "set at a recent examination (October 1-3, 1907) of a great State," a State which was once a province of the Netherlands. It may be asked why Dr. Tucker has not seen fit to criticise these questions, which certainly have been brought to his attention. Parenthetically, it was not necessary for Dr. Tucker to cross the Alleghenies in

order to obtain material for criticism, assuming that

criticism was called for.

By an act of interpolation Dr. Tucker questions the propriety of the term "formula" in questions 3 and 5. As Dr. Tucker should know, this term is proper, as is its analogue "equation," which appears in the following question recently submitted by the examining board of the Netherland province: "Complete the following equation: 2KI+MnO2+2H-SO4=." Surely Dr. Tucker must be at a loss for words when he attempts to discredit the ability of a State examiner to formulate questions in a proper manner.

It will be of interest to the editors and the readers of the *Journal* that questions I, 2, 3, and 4, which have occasioned Dr. Tucker such perturbation, questions which he deems "incompetent, immaterial, and irrelevant," were taken from the IgoI edition of Remsen's *College Chemistry*, a textbook recommended and used in the leading medical col-

leges of the United States!

In referring to question No. 5. Dr. Tucker, who assures us that he has been teaching chemistry for over thirty years, says: "The last question assumes the existence of an oxide of potassium that I never heard of and which has. I believe, no existence." For the information of Dr. Tucker I will say that question No. 5 affirms the existence of an oxide of potassium which certainly has an existence. K₂O₂, the oxide of potassium in question, is formed by heating potassium in a limited supply of nitrous oxide.

In conclusion, Dr. Tucker says: "I doubt whether one member in ten on our State boards, save perhaps the examiners in chemistry, could get forty per cent. on such a paper as this." I hardly think that Dr. Tucker is competent to pass on the qualifications of the members of the different State boards from Maine to California, but, waiving this, it must be recalled that the questions under consideration . were submitted to students, and we are concerned alone—at the present time at least—with the ability of the students to answer these questions. It will certainly be of interest to the readers of the New York Medical Journal that, out of the fifty-two candidates who took the examination of the Illinois State Board of Health on October 23-25, 1907, thirty-eight received averages varying from seventy-five per cent. to ninety-one per cent. in the examination on chemistry.

It is so easy to criticise examination questions, and, as Dr. Tucker must know, it is difficult for examiners to prepare acceptable questions for six examinations yearly.

JAMES A. EGAN,

Secretary, Illinois State Board of Health.

A CORSET FOR GASTROPTOSIS.

126 EAST THIRTY-FOURTH STREET.
NEW YORK, August 18, 1008

To the Editors:

Dr. Anthony Bassler, in his article under this title, published in your esteemed *Journal* of July 18th, passes some remarks on my plaster belt which remind me of what I have read in the history of novelties in medicine. Better men than myself, Semmelweis for instance, have complained that their new methods were discredited by many who had

applied them with disregard to the directions given by the inventor. The disadvantages described by Dr. Bassler are due to unskilful application of the plaster. True it is that some patients' skin is too irritable to bear the plaster, but these are exceptional cases, very rare exceptions. Most patients speak with enthusiasm of the comfort and benefit they experience while wearing the belt, and they wear it for five weeks and sometimes much longer. They are not deprived of bathing while the appliance is on. As a matter of course some experience is required to apply it properly and to see that it is kept on properly.

CARSICKNESS.

GLOVERSVILLE, N. Y., August 22, 1908

To the Editors:

I read the article on carsickness, by Dr. Wile, with much interest, as I have treated many cases this last five years. I attribute the cause to the nystagmus produced by looking out of the car windows. Look out of a car window and observe how rapidly the telegraph poles flit by; each one is seen and involuntarily followed by the eye until it is opposite, when the eye shifts to the one following. This is true of near buildings; objects farther away seem to move slower, and those very far off seem to be almost stationary, until the whole landscape appears to be revolving round a common centre. The unconscious effort to take in everything produces a rapid lateral oscillation of the eyeballs, as any one can observe by watching the eyes of his fellow passengers. The eye strain is enormous, and is the chief factor in producing carsickness. This can be proved by asking a patient who is subject to carsickness to look steadily at a mirror which is moved rapidly to and fro or tilted backward and forward. He will immediately complain of nausea and vertigo.

The treatment consists in advising the patient to avoid looking out of the car windows and in giving him a grain of citrate of caffeine shortly before he takes the cars, and repeating it every hour as long as there is any tendency to be sick. I have been able by these means to relieve many sufferers.

WILLIAM CLARK WOOD.

CRIMINAL ABORTION.

282 SOUTH MARSHFIELD AVENUE, CHICAGO, August 1, 1908.

To the Editors:

I have read the very interesting editorial in the New York Medical Journal of July 25th, entitled Medical Men as Detectives and Prosecutors. The question of abortion is a very delicate one, for is not the law against bigamy an abortion by itself? However, there is hope coming from the speech of Dr. Walter B. Dorsett on the subject of Criminal Abortion in Its Broadest Sense, before the meeting of the American Medical Association in Chicago last June, of which an abstract appeared in the New York Medical Journal. Dr. Dorsett called attention to the fact that the laws were insufficient or inadequate, and he advised the appointment of a committee by the House of Delegates, to be known as

the Committee on Criminal Abortion, which should undertake to secure the passage of suitable laws after having studied the conditions from all points L. M. Young. of view.

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Pharmacology. The Action and Uses of Drugs. By MAURICE VEJUX TYRODE, M. D., Instructor of Pharmacology in the Medical School of Harvard University. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. ix-255. (Price, \$1.50.)

This little book has been prepared on an excellent plan, drugs being grouped according to their principal therapeutic actions and each group designated by the name of the most prominent drug contained in it. Thus, we have the group of morphine, the group of quinine, etc. Of course, the information given is necessarily condensed, but the work does not purport to be exhaustive. A somewhat remarkable statement appears in the section on ivy poisoning. "The penis and testicles of the man," says the author, "may be swollen to a size such as to approach in appearance the organs of a bull." This may do well enough for the testicles (that is, the scrotum), but as for the penis, when we call to mind the nerf de bœuf the comparison loses force.

At the close of the consideration of almost every group of drugs there is a section, entitled Materia Medica, giving official and commercial titles of the drugs and their preparations. As regards the pharmacopœial names, these lists are inexcusably erroneous. The punctuation used in the book is for the most part unintelligible to us, and here and there we find indications that the author has but a defective knowledge of the English language. These faults, however, may easily be corrected in the next edition.

Physiotherapie. Mécanothérapie — rééducation — sports — méthode de Bier—hydrothérapie. Par les Docteurs Fraikin, Grenier de Cardenal, Constensoux, Tissié, Delagenière, Pariset. Avec 114 figures dans le texte. Paris: J. B. Baillière et Fils. 1909. Pp. xii-404.

This little book is one of twenty-four volumes published under the general title of Bibliothèque de thérapeutique, under the direction of Dr. A. Gilbert and Dr. P. Carnot, who are respectively professor and adjunct professor of therapeutics in the Paris Faculty of Medicine. The part on mechanotherapy is by Fraikin and Grenier de Cardenal, who give a list of sixty different forms of apparatus for the production of passive exercise, vibration, etc. It is hardly necessary to say that the individual practitioner will not generally be willing to invest in such an armamentarium. Some of our great hospitals are possessed of much the same array, and it seems to be expected by the authors that physicians in general will send to those who are proficient in machine therapeutics such patients as they judge to be in need of elaborate mechanical treatment.

The section on motor reeducation is by Constensoux. It is an interesting exposition of the subject. Tissié deals with games and sports from the therapeutic point of view. Foot ball, says the author, is the best means, at least in France, employed in the struggle against alcoholism. Delagenière writes of Bier's passive hyperæmia, which he thinks appropriate for a multitude of morbid conditions. Hydrotherapeutics is treated of by Pariset. It occupies about half the book. The section is fairly comprehensive.

It is unusual to find in a French book so good an index as the one with which this is provided. It

is followed by the table of contents.

Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp, Berlin; Prof. Küttner. Breslau; Prof. Lange, München; Prof. Lange, Amsterdam; Prof. Pave, Greifswald; Prof. Perthes, Leipzig; Prof. Poppert, Giessen; Prof. Preysing, Cöln; Prof. De Quervain, Bern—La Chaux-de-Fonds; Prof. J. Riedinger, Würzburg; Prof. Roysing, Kopenhagen; Privatdozent Dr. Sauerbruch, Marburg; Prof. Schloffer, Innsbruck; Prof. Tillmann, Cöln; Prof. Wilms, Basel; Prof. Wullstein, Halle a. S., und Prof. Wilms, Basel. Erster Band; allgemeiner Teil. Chirurgie des Kopfes, des Halses, der Brust und der Wirbelsäule. Mit 326 zum Teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1008. Pp. xii-600. (Price: paper, 10 M.; bound, 11 M.)

For a variorum work, this is to be one of verv

For a variorum work, this is to be one of very moderate bulk, for it seems that there are to be only two volumes in all. It appears to be on a par with a number of other treatises on surgery of the present day-not distinguished for any great degree of excellence, though quite sufficient for the ordinary

needs of the student and practitioner.

The illustrations are well executed, but we think the impressions would have been clear enough without the use of highly glazed paper, which runs all through the volume. The typography is excellent, but the binding is execrable—the sheets break loose under the slight strain incident to cutting the leaves.

Die nervösen Erkrankungen des Geschmackes und Geruches. Von Prof. L. v. Frankli-Hochwart. Zweite, gänzlich umgearbeitet Auflage. Mit 14 Abbildungen. Wien und Leipzig: Alfred Hölder, 1908. Pp. lv-96.

The first edition of Frankl-Hochwart's small monograph has been amplified, revised, and in large part rewritten. It now contains about a hundred pages. In the first portion he discusses the physiology of taste, the nervous mechanism underlying the function of taste, methods of testing, and the pathological modifications, such as the ageusiæ, hyperalgesia gustatoria, and parageusiæ. Special stress is laid upon the taste modifications as found in lesions of the spinal cord, in ear disorders, facial palsy, glossopharyngeal disturbances, bulbar lesions, tabes, multiple sclerosis, syringomyelia, leprosy, hysteria, epilepsy, and mental diseases.

The second part of the book discusses the physiology and nervous mechanism of smell and its pathological modifications. Anosmia, hyperosmia, and parosmia are in turn taken up and these diseased or perverted conditions thoroughly analyzed.

This monograph is practically the only one of its kind in which the results of modern methods of research in these subjects have been embodied. It is clearly written, comprehensive, and thoroughly trustworthy.

BOOKS, PAMPHLETS, ETC., RECEIVED

Transactions of the New Hampshire Medical Society at the One Hundred and Seventeenth Anniversary, held at Concord, May 14 and 15, 1008 Pp. 332 Manual of Psychiatry. By J. Rogues de Fursac, M. D.,

Formerly Chief of Clinic at the Medical Faculty of Paris,

Formerly Chief of Clinic at the Medical Faculty of Paris, Physician in Chief of the Public Insane Asylums of the Seine Department. Authorized Translation from the French by A. J. Rosanoff, M. D., Second Assistant Physician, Kings Park State Hospital, N. Y. Second American from the Second French Edition. Revised and Enlarged. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1908. Pp. ix-406.

The Principles and Practice of Gynæcology for Students and Practitioners. By E. C. Dudley, A. M., M. D., Ex-President of the American Gynæcological Society, Professor of Gynæcology, Northwestern University Medical School, etc. Fifth Edition, Revised and Enlarged. With Four Hundred and Thirty-one Illustrations and Twenty Full Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1908. Pp. 806.

Cholécysto-pancréatite. Essai de pathogénie. Par le Docteur Reine Maugeret, ancien interne des Hôpitaux de Paris. Paris: G. Steinheil, 1908. Pp. 150.

Chronischer Magenkatarrh (Gastritis chronica). Von Hofrat Dr. Friedrich Crämer. Mit 4 Kunstdruck-Tafeln. München: J. F. Lehmann, 1908. Pp. iv-168.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank Burr Mallory, A. M., M. D., Associate Professor of Pathology, Harvard University Medical School, First Assistant Visiting Pathological Laboratory of the Massachusetts General Hospital; Assistant Professor of Pathology, Harvard University Medical School, Fourth Edition, Revised and Enlarged, with 152 Illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 480. (Price, §3.)

Index of 1,180 Post Mortems of the Insane, Norristown, Pa. By H. J. Sommer, Jr., M. D., Pathologist; Formerly Assistant Physician of the Institution. With an Introduction by Allen J. Smith, A. M., M. D., Professor of Pathology, Univerity of Pennsylvania; Consulting Pathologist of the Hospital, etc. 1918.

Miscellany.

Prizes Offered by the International Congress on Tuberculosis.-The Central Committee of the International Congress on Tuberculosis at Washington has announced the following prizes: I, A prize of \$1,000 for the best evidence of effective work in the prevention or relief of tuberculosis by a voluntary association since the first International Congress in 1905. 2, A prize of \$1,000 for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes. 3, A prize of \$1,000 for the best exhibit of a furnished house for a group of families of the working class, designed in the interest of the crusade against tuberculosis. 4, A prize of \$1,000 for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculosis poor. 5, A prize of \$1,000 for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis. 6, The Hodgins Fund prize of \$1,500 is offered by the Smithsonian Institution for the best treatise that may be submitted on The Relation of Atmospheric Air to Tuberculosis. 7, A prize of \$100 is offered for the best educational leaflet submitted in each of the seven classes defined below: (A) For adults generally (not to exceed one thousand words). (B) For teachers (not to exceed two thousand words). (C) For mothers (not to exceed one thousand words). (D) For indoor workers (not to exceed one thousand words). (E) For dairy

farmers (not to exceed one thousand words). (F) For school children in grammar school grades (not to exceed five hundred words). (G) Pictorial booklet for school children in primary grades and for the nursery. 8, A gold medal and two silver medals are offered for the best exhibits sent in by any State of the United States illustrating effective organization for the restriction of tuberculosis. 9, A gold medal and two silver medals are offered for the best exhibits sent in by any State or country (the United States included) illustrating effective organization for the restriction of tuberculosis. 10, A gold medal and two silver medals are offered for each of the following exhibits: (A) For the best contribution to the pathological exhibit. (B) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuberculosis by any State of the United States. (C) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuberculosis by any State or country (the United States excluded). (D) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuberculosis by any municipality in the world. (E) For the society engaged in the crusade against tuberculosis having the largest membership in relation to population. (F) For the plans which have been proved best for raising money for the crusade against tuberculosis. (G) For the best exhibit of a passenger railway car in the interest of the crusade against tuberculosis: (H) For the best plans for employment for arrested cases of tuberculosis. 11, Prizes of two gold medals and three silver medals will be awarded for the best exhibit of a workshop or factory in the interest of the crusade against tuberculosis. The following constitute the committee on prizes: Dr. Charles J. Hatfield, Philadelphia, chairman; Dr. Thomas G. Ashton, Philadelphia, secretary; Dr. Edward R. Baldwin, Saranac Lake; Dr. Sherman G. Bonney, Denver; Dr. John L. Dawson, Charleston, S. C.; Dr. H. B. Favill, Chicago; Dr. John B. Hawes, 2d, Boston; Dr. H. D. Holton, Brattleboro; Dr. E. C. Levy, Richmond, Va.; Dr. Charles L. Minor, Asheville, N. C.; Dr. Estes Nichols, Augusta, Me.; Dr. M. J. Rosenau, Washington; Dr. J. Madison Taylor, Philadelphia; Dr. William S. Thayer, Baltimore; Dr. Louis M. Warfield, St. Louis.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the recek ending August 28, 1908:

| Places. | | Da | te. | | Cases. Dea | iths. |
|-------------------|-------------------|----------|----------|---|------------|-------|
| California-San | | | | | | |
| | | | | | reported | |
| California—San | Francisco | lug. | 9-15 | | 0 | |
| Indiana-Indiana | apadr | 1:27. | 10-10 | | 3 | |
| Indiana-South | Bend | Aug. | 0-15 | | 1 | |
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| British South Afr | rica—East I . + d | n July | 1218. | | | |
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| Places. | 1 .1 | Draths |
|---|------|---------|
| Ceylon Colombo | | 2 |
| China-HongkongJuly 5 11 | - 2 | 2 |
| Egypt-CanoJuly 22-29 | | 1 |
| Egypt-Sucz lune 25-Aug. 1 | . 1 | |
| France-Marseilles July 1-31 | | 1 |
| France—Paris July 25-Aug. 1 India—Bombay July 15-21 | | 18 |
| India—BombayJuly 15-21India—CalcuttaIuly 5-11 | | 7 |
| Italy—GeneralJuly 26-Aug. 2 | | / |
| Italy—NaplesJuly 19-Aug. 1 | | |
| Japan—Osaka | 1 | |
| Java - Batavia July 5-11 | | |
| Netherlands, The-AmsterdamAug. 1 | | |
| Philippine Islands-ManilaJune 21 Aug 4 . | | |
| Portugal—LisbonJuly 25 Aug 8 | | |
| Russia—Moscow July 19:35 | | |
| Russia—RigaJuly 25-Aug | | |
| Russia—St. PetersburgJuly 19-25 | | 3 |
| Russia-WarsawJune 6-27 | | 1.4 |
| Siberia-Vladivostock June 15 21 | | |
| Spain-Malaga Mar. 1-Apr. 30 | | 1 |
| Spain-ValenciaAug. 2-8 | | I |
| Straits Settlements-SingaporeJuly 5-11 | | T |
| Turkey in Asia—Bagdad July 5-11 | | 5 |
| Turkey in Europe—Constantinople. July 26-Aug. 2 | | 0 |
| Cholera Foreign. | | |
| Ceylon—ColomboJuly 5-11 | | |
| China—Hongkong July 5-11 | | |
| China—HongkongJuly 5-11 India—BombayJuly 15-21 | | _* |
| India—CalcuttaJuly 5-11 | | . 4 |
| India—MadrasJuly 11-17 | | 9 |
| India-RangoonJuly 5-11 | | 7 |
| Indo-China-CholesJuly 5-11 | | |
| Indo-China—SaigonJuly 5-11 | | 1 |
| Persia—TeheranJune 27-July 3 | | 1 |
| Philippine Islands — Provinces north of ManilaJune 28-July 4 | ALC: | 331 |
| | | 33' |
| Yellow Fever-Foreign. | | |
| Brazil-ManaosJuly 12-Aug. 1 | | 5 |
| Brazil—ParaAug. 2-8 | . 2 | 1 |
| Cuba—DaiquiriJuly 31 | I | |
| Mexico-MeridaAug. 23 | . I | |
| Mexico-Vera Cruz | . I | |
| Plague Foreign. | | |
| Chile-Antofagasta July 1420 | . 3 | |
| Chile—Arica July 16-22 | . I | |
| Chile—Iquique July 14-21 | | 2 |
| China—Foochow July 1: 18 | | Present |
| China-Hongkong July 5 11 | | 28 |
| Indo-China-Cholen July 5 11 | | 17 |
| Indo-China—SaigonJuly 5-11 | | 3 |
| Japan—KobeJuly 19-25 | | 15 |
| Peru—General. July 14-20. July 23-28. July 23-28. | | 1.5 |
| Trinidad | | 2 |
| Turkey in Figure 1 | . 3 | _ |
| A Turkalli wamaa s | | |

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending August 20, 1908.

BAKER, CHARLES L., First Lieutenant. Recently appointed from contract surgeon, with rank from July 7, 1908; ordered to active duty in the service of the United States, and assigned to duty at present station.

BLANCHARD, R. M., Captain. Leave of absence extended one month

BLOOMBERGH, H. D., Captain. Granted twenty days of absence, to take effect about October 5, 1908.

Brown, O. G., Captain. Granted ten days' leave of absence. FIELD, PETER C., Captain. Ordered to proceed to Fort Benjamin Harrison, Indiana, for duty during the

GRIFFS, FRANK C., First Lieutenant. Order for duty at camp of instructions, Fort Benjamin Harrison, Indi-

ana, revoked.

HALLIDAY, FRANCIS A., First Lieutenant. Ordered to re-port in person to Colonel Valery Harvard, president of the board of officers appointed to meet at the Army Medical Museum Building, Washington, D. C for examination to determine fitness for appointment as first lieutenant in the Medical Corps of the Army.

HASSELTINE, H. E., First Lieutenant. Granted two months' leave of absence.

HENNING, O. F., First Lieutenant. Ordered to accompany

the command at Fort Sheridan, Ill., to camp of instruc-tion, Fort Benjamin Harrison, Ind.

Kirkpatrick, Thomas J., Major. Leave of absence ex-

tended fourteen days.
McCown, Thomas B., First Lieutenant. Assigned to ac-

THOOWN, THOMAS B., FIRST Delicement. Assigned to active duty at present station.

SHORTLINGE, E. D., Captain. Resignation of commission as a medical officer of the Army has been accepted by the President, to take effect September 15, 1908.

SNODDY, CARY A., Captain. Honorably discharged from the services of the United States.

Tyler, George Trotter, First Lieutenant. Ordered to proceed from Fort Monroe, Virginia, to Fort Fremont,

S. C., for temporary duty.
WEED, FRANK W., Captain. Granted leave of absence for thirty days.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending August 29, 1908:

BIELLO, J. A., Assistant Surgeon. Detached from duty with

the Pacific Torpedo Fleet, and ordered to the Naval Hospital, Mare Island, Cal. Brooke, F. H., Assistant Surgeon. Detached from the Montgomery and ordered to the Naval Hospital, Bos-

ton, Mass.

Brown, E. M., Passed Assistant Surgeon. Unexpired portion of sick leave revoked; ordered to the naval recruiting station, Los Angeles, Cal.

BUNKER, C. W. O., Assistant Surgeon. Detached from the

Arkansas and ordered to the Montgomer

DUHIGG, J. T., Assistant Surgeon. Detached from the naval recruiting station, Los Angeles, Cal., and ordered to duty with the Pacific Torpedo Fleet.

HATHAWAY, G. S., Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to Washington, D. C., September 1st, for examination for promotion and these to await coders. motion, and then to await orders. HOEN, W. S., Passed Assistant Surgeon. Ordered to duty

with flotilla of lighthouse vessels en route to the Pacific Coast.

LANE, H. H., Assistant Surgeon. Detached from duty the Department of Government and Sanitation, Isthmian Canal Zone, Panama, and ordered to take a course of instruction at the Naval Medical School, Washington, D. C., October 1st.

McClurg, W. A., Medical Director. Detached from duty

as a member of the naval examining and naval medical examining boards, Washington, D. C., September 1st,

and ordered home.

McLean, N. T., Passed Assistant Surgeon. portion of leave revoked; detached from the naval sta-

tion, New Orleans, La., and ordered to the Dolphin. Murphy, J. A., Surgeon. Detached from the Dolphin and

ordered home to await orders.

Sellers, F. E., Assistant Surgeon. Detached from the Nevada, and ordered to the Texas, when commissioned Steele, J. M., Medical Inspector. Detached from the navy yard Portsmouth. N. H., September 18th, and ordered home

TURNER, H. W. B., Assistant Surgeon. Ordered to the Naval Medical School Hospital, Washington, D. C., for

Births, Marriages, and Deaths.

Married.

JANSS-BRALY.-In San Francisco, on Wednesday. August 19th, Dr. Herman Janss and Miss Emma Braly, of Los Angeles.

KATZOFF—FERMAN.—In Lancaster, Pennsylvania, on Wednesday, August 19th, Dr. Solomen C. Katzoff and Miss Yetta W. Ferman.

EICHBERG.—In Big Tupper Lake, New York, on Tuesday, August 18th, Dr. Joseph Eichberg, of Cincinnati, aged fortynine years.

HAMME.—In Cottonwood Falls, Kansas, on Wednesday,

August 26th, Dr. J. M. Hamme.

Millspaugh.—In Richmond, Staten Island, on Thursday,
August 27th, Dr. Isaac L. Millspaugh, aged eighty-one

Moore.—In New Hope, Kentucky, on Friday, August 21st, Dr. J. S. Moore.

Russell.-In Owensboro, Kentucky, on Saturday, August

22d, Dr. J. D. Russell, aged sixty-two years.
Tobey.—In Huntsville, Canada, on Tuesday, August 18th,
Dr. Henry A. Tobey, of Toledo, Ohio, aged fifty-six years.
URIAN.—In Penllyn, Pennsylvania, on Thursday, August 27th, Dr. Harry Drain Urian, of Philadelphia, aged fortyone years.

WHITEHEAD.—In Elizabeth, New Jersey, on Thursday, August 20th, Dr. Rufes B Whitehead, aged thirty-six years.

New York Medical Journal

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WHOLE No. 1554.

Original Communications.

EXPLANATION OF SEEMING PARADOXES IN MODERN PHTHISIOTHERAPY.

With Particular Reference to Sun, Air, Water, and Food as Remedial Agents.*

By S. Adolphus Knopf, M. D., New York,

Professor of Phthisiotherapy at the Postgraduate Medical School and Hospital; Associate Director of the New York Health Department Clinics for Pulmonary Diseases; Visiting Physician to the Riverside Sanatorium for Consumptives, etc.

Whenever any theory is advanced for treatment or prevention of disease different from the habitual therapeutic methods, there will almost invariably arise more or less heated discussions in the medical papers, and when the lay papers hear of it they will take up the matter to show the inconsistency of medical opinions and the seeming paradoxes advanced. With the modern tendency of the lay press to exaggerate and magnify and make every item of news as sensational as possible, such discussions not infrequently lead to dangerous conceptions on the part of the lay readers.

In no disease are such seemingly contradictory opinions more dangerous, when copied in the lay press, than in tuberculosis. Thus, for example, there appeared in the Sunday World of January 12, 1908, a lengthy article purporting to be written by Major Charles E. Woodruff, A. M., M. D., U. S. A., with the following headlines: "The Dreadful Things Medical Scientists Are Saying about Sunlight: It Breeds Tuberculosis and Other Diseases, and Consumptives Must Keep in the Shade to be Cured. It is Gradually Eliminating the Blond Type. If You Are a Blond Person You Must Keep away from the Tropics. The Cave Dwellers had the Only Perfect Habitations, and the Modern Theory of Having Large, Sunlighted Rooms is All Wrong."

In the right corner of the page the sun was pictured and across it was placed a danger sign. To the left there were pictured the tubercle bacilli and a handsome woman, a brunette with a calm face, unaffected by the rays of the sun, while underneath there was a picture of a blonde woman staggering and fainting under the rays of the sun to which she

was exposed in the picture.

In the Daily Eagle, of Brooklyn, N. Y., of January 19, 1908, a lengthy editorial entitled Darkness as a Doctrine appeared, beginning thus: "Science makes a high bid for ridicule when some of its distinguished exponents condemn light and sunshine

*Read before the Clinical and Climatological Section at the annual meeting of the National Association for the Study and Prevention of Tuberclulosis in Chicago, June 6, 1968.

as dangerous to human health and life. Even ignorant laymen may laugh when learned physicians tell them that sunlight breeds tuberculosis and other dreaded diseases."

I have since learned how the Sunday World article over the purported signature of Major Woodruff had its origin. It was published without his knowledge and consent, and, according to his own statement, the article "consisted of extracts culled here and there from his book on The Effects of Tropical Light on White Men," but in such a garbled way as to give a false idea, and, of course, the ridiculous headlines were not his. I extend to the major my most heartfelt sympathy, for I know what it means to be misquoted. This present article is, of course, not based on what was said in the World, but on editorials in the medical papers (American Medicine and Medical Record) below referred to, of which the major has acknowledged to me personally the authorship.

Unfortunately the major, no doubt unintentionally, has given, as will be seen from the following extracts in American Medicine, as well as in the Medical Record, to his editorials headings which must attract the lay readers. I refer particularly to the one where he speaks of Dr. Wainwright's advice, which has in large type the words "Dreadful Advice to the Tuberculous," and to the other, "Darkness is Not a Cause of House Tuberculosis" (American Medicine, April, 1907). All important medical papers are read to-day by some of the editorial staff of the leading newspapers. These men are eager for anything which may show what they often please to call the inconsistency of medical science. We should not wonder then that a sensation loving newspaper writer tried to make as much as he could out of such matter as appeared in American Medicine of April and November, 1907, or in the major's book.

Aside from this, there is real danger that the major's statements as to the danger of sunlight in tuberculosis, and that darkness is not a cause of house tuberculosis may be taken up by some of our greedy contractors building tenement houses in New York or other large cities. Let these contractors find a medical authority favoring dark rooms, and the earnest efforts of sanitarians and philanthropists in behalf of tenement house reform may come to naught.

Without my authority I was quoted in the lay press as approving Dr. Woodruff's theories, but, as already intimated, much sad and painful experience with inaccurate newspaper reports has taught me to be resigned to such unfortunate incidents.

But when the matter is taken up seriously in our leading medical and seriously minded lay papers and lengthy editorials are written on the subject, it would seem time that we look into these various statements and seeming paradoxes and see how we may clear the atmosphere of uncertainties.

For lack of space and time I cannot reproduce here all the interesting editorials which have appeared in medical papers on the subject. American Medicine of November, 1907, devotes five pages of editorial comments to this theme. Here are some of the headings: The Danger of Too Much Light in Tuberculosis. Dreadful Advice to the Tuberculous Is that of Dr. J. W. Wainwright, the editor of the *Hygienic and Dietetic Gazette* (October, 1907), "those suffering from tuberculosis should seek the sunshine rather than the shade." The Backwardness of Phthisiotherapy. The Difficulty of Abandoning False Ideas. A Paradox of Sanitation.

The Medical Record of November 2, 1907, came out with a strong editorial under the heading "Contradictory Advice to Consumptives," and very pertinently says, "surely there is greater need of uniformity of advice, for the average layman is unable to sift it out and reject everything except the few essentials on which there are no difference of

opinions.'

Before proceeding further I wish it distinctly understood that I have the highest regard for Major Woodruff personally, and that this paper is not to be interpreted as any attempt to minimize the scientific attainments of this distinguished scholar and gentleman. Most of us are familiar with Major Woodruff's views regarding the danger of sunlight in phthisiotherapy and his views concerning solartherapy in general and in relation to brunets and blonds in particular.

The editorials and articles referred to above, as well as a part of his previous brilliant article, Actinophysiology and Actinotherapy, were in a measure directed against my views on the subject expressed in a paper read before the New York Academy of Medicine² and previous communications on this subject. I am frank to admit that I do not entirely agree with Major Woodruff and that I consider sunlight in general in cool and cold weather and even sun baths at certain times and for certain individuals valuable adjuvants in the treatment of tuberculous patients in our temperate zone.

Concerning the susceptibility of the different types of complexion to tuberculosis I believe to have noticed a few facts, namely that the red haired individuals, that is to say, the Venetian blonds of the French writers, seem more susceptible to the disease and offer a less favorable prognosis. With others I also believe to have observed that many Scandinavian immigrants, who as a rule are blond, when transplanted from healthful agricultural regions in their native country to the congested districts of our large cities offer less resistance to tuberculous disease than the native born American. Among the German Americans, many of whom are also blond. I believe to have noticed more resistance to the tuberculous invasion. On the other hand, among the Irish Americans all of us, I believe,

will have observed relatively little resisting power. Many of the Irish Americans are, however, not blond, but decided brunet. Whether this is due to racial susceptibility or to change of environment, or to both, I cannot state authoritatively.

However, the accompanying table from the United States Census, 1906, shows that the mortality in Norway (198.2 in 1903, 197.4 in 1904) is rather high compared with that of the United States (165.7 in 1903, 177.3 in 1904), and that in Ireland it is the highest of all European countries (223.4 in 1904). Might not this account to a very considerable degree for the great mortality from tuberculosis of the Scandinavian and Irish immigrants coming to this country? Another interesting fact is that Italy, the country which has more sunshine than any other of all European countries, has the smallest mortality from tuberculosis (111.6 in 1903, 117.4 in 1904).

Number of deaths from tubercu-losis of lungs per 100,000 of population,

| A A | Annual | | | |
|------------------------------------|----------|-------|--------|-------|
| a | verage. | | | |
| | 1901 to | | | |
| Country. | 1905. | 1902. | 1903. | 1904. |
| United States (registration area). | 169.9 | 163.2 | 165.7 | 177.3 |
| Austria | 336.0 | 337-4 | 336.2 | (1) |
| Belgium | 120.9 | 131.0 | 108.6 | 109.1 |
| Ceylon | 93.0 | 90.8 | 91.3 | 92.6 |
| German Empire | 187.0 | 187.7 | 187.3 | 182.6 |
| Chile | (2) | (1) | 245.1 | (1) |
| Italy (3) | 114.Q | 108.8 | 111.6 | 117.3 |
| Tamaica | 153.7 | 147.7 | 155.2 | 163.0 |
| Japan | 141.0 | 143.4 | 144.9 | (1) |
| Netherlands | 133-4 | 132.0 | 132.0 | 129.4 |
| Norway | 194.6 | 188.5 | 198.2 | 197-4 |
| Servia | 279.7 | 265.6 | 277.5 | 277.0 |
| Spain | 149.5 | 186.0 | 4143.0 | 150.8 |
| Switzerland | 187.7 | 187.0 | 188.0 | 188.2 |
| United Kingdom | 135.7 | 135.0 | 132.9 | 136.5 |
| England and Wales | 121.5 | 123.3 | 120.3 | 124.0 |
| Scotland | 146.6 | 145.0 | 144.8 | 145.6 |
| Ireland | 215.3 | 212.0 | 216.6 | 223.4 |
| (1) No figures available: average | only for | vears | shown. | |

(1) No figures available; average only for years shown.
 (2) Annual average not shown for less than three years.
 (3) Includes general tuberculosis.
 (4) Rates based on provisional figures.

I have visited a goodly number of European sanatoria, and have visited and sent patients to nearly all our States where there exist sanatoria and climatic resorts. I have seen blond and brunet patients do well in all of them, and I have not observed anything which justifies Dr. Woodruff to make, in American Medicine of November, 1907, page 614, the following statement: "It is well known that the results in the sunny South are not so good as in the cloudy North, and here and there they are positively bad, particularly in the case of marked blonds; but the facts are concealed for the commercial exploitation of lands, of perpetual summer, heat, and sunshine.

But one man's opinion, one man's experience, or one man's statistics do not suffice for a scientific and conclusive demonstration. I, therefore, addressed a number of letters of inquiry to men of wide experience in phthisiotherapy, whose opinions I value and whose statements should help us in coming to some satisfactory conclusions on these vital points.

Before giving the tables I desire to express to all the gentlemen who by their prompt reply have been so helpful to me in this difficult task my most heartfelt thanks and appreciation.

I have asked six questions, which read as follows:

1. Do your statistics show that blond patients do better in cold weather or cold climatic regions than those having brown or black hair?

2. Have you noticed the reverse, that is to say,

¹American Medicine, June, 1907. ²Acrotherapy in Cold Weather, New York Medical Journal, May 25, 1997

that brunet patients do better in warm weather or warmer climates than blonds?

3. In your opinion is sunlight harmful in cool or cold weather to the average tuberculous patient, providing he is careful in protecting his head?

4. Do you ascribe the improvement which the majority of tuberculous patients experience in winter in our temperate zones, when "taking the cure," to the cold, to the absence of sunlight, or to other reasons?

5. Have you any experience in solar therapy, that is to say, sun baths, and do you think them injurious or harmful in carefully selected cases under proper supervision?

6. Do you ascribe the relative well being of the tuberculous patients in the morning as the natural sequel of sleep, rest, and quiet of the night, which the average healthy man also experiences, or to the absence of sunlight?

The following is the table:

| Name. | I. | II. | 111. | IV. | V. | VI. |
|--|----------------------------------|----------------|-------------------------|--|---|---|
| Dr. E. R. Baldwin, Saranac Lake, N. Y. | Se statistics, but thinks no, | no, | no, | to cool weather solely, | no experience, thinks them not | to sleet a litest. |
| Dr. W. J. Barlow, Los Angeles, | According to | yes, | n), | no answer, | injurious, no answer, | no answer. |
| Dr. W. J. Barlow, Los Angeles, Cal. Professor Herman M. Biggs, Gen. Med. Officer, New York. | No statictics, but thinks no, | no, | quite to the | not to the ab- sence of sun- | sun baths most beneficial, | to absence of |
| Dr. Sherman G. Bonney, Den- ver, Colo | No. | no, | contrary, | not to the ab- sence of sun- | beneficial rather than harmful. | sunlight. to rest and sleep. |
| Dr. Vincent Y. Bowditch, Boston, Mass. | No statistics, | no, | no, | light but to cold to cold, not to absence of sun- | thinks them not harmful, | to rest and sleep. |
| Dr. Lawrason Brown, Adiron- dack Cottage Sanatorium | No statistics, but thinks no. | no, | Πιο, | light, to the sold weather, | no experience, | to rest and quiet. |
| dack Cottage Sanatorium Dr. O H. Brown. Missouri State Sanat., Mt. Vernon, Mo. Dr. E. S. Bullock. Silver City. | No statistics, | no statistics, | no, | to the cold, | no experience, indifferent r | to rest and |
| Dr. E. S. Bullock, Silver City, N. M. | | , | | dryness of at- mosphere, | sults, | lower tempera- ture. |
| Dr. G. E. Bushnell, U. S. Army Hosp., Fort Bayard, N. M | Undetermined, | undetermined, | no. | to the cold, | no experience, | to rest and not to absence of sunlight. |
| Dr. P. M. Carrington, Marine Hospital, Fort Stanton, N. M. Dr. H. C. Clapp, Boston, Mass. | No, | no, | no, | to the cold and sunlight, mostly to cold, | beneficial, no answer, | to rest and sleep. |
| Dr. S. Solis-Cohen, philadelphia, | but thinks no, | ne, | 70, | to the cold and to other rea- | most beneficial, | sleep. to rest. |
| Dr. Thomas D. Coleman, Augusta, Ga. | No statistics, but thinks no, | no, | 10, | sons, to the cold, | not harmful, | not to the ab- sence of sun- |
| | no statistics, | no. | no, | to the cold, | not harmful, | sence of sun- light, but to rest and sleep. not to the ab- |
| Dr. M. Collins, National Jewish Hospital for Consumptives, Denver, Colo | No. | no. | Tr. 1, | to cold and rest, | sun baths bene- | sence of sun- light. to rest and |
| Dr. William Duffield, Los Angeles, Cal. | No, | no, | n., | not to the ab- sence of sun- | ficial, generally bene- ficial, | sleep, not to the ab- sence of sun- |
| Dr. Charles F. Gardiner, Colorado Springs, Colo | No, | no, | 1.0, | light, to cold and sun- light, | most beneficial, | light. to rest and not to absence of |
| Dr. von Hahn, Presslen, Ger- many | No, | no, | most beneficial, | to cold and purer atmosphere, | most beneficial, also in laryngeal | sunlight. not to the ab- sence of sun- |
| Dr. Henry J. Hartz, Detroit, Mich. | No, | no, | no. | to the cold and sunshine, | distinctly base- ficial, | light. to rest and quiet. |
| Dr. Guy Hinsdale, Hot Springs, | No statistics, | no statistics, | no. | to cold and sun- light, to dry and cold | no experience, beneficial. | to rest and sleep. |
| Dr. G. W. Holden, Agnes Mem- orial Sanatorium, Denver, Colo. Professor A. Jacobi, New York. | No, Yes, | no, yes, | not harmful, to | weather, | no experience, | sleep. to sleep and |
| Dr. H. M. King, Loomis Sana- | No, | no, | the contrary, no, | to cold, | beneficial, | to rest and sleep solely. |
| torium, Liberty, N. Y Dr. Landgraff, Sanatorium, Bel- zig, near Berlin, Germany | No statistics, | no statistics, | no, | to cold and bet- ter sleep, | doubts benefit, but has no ex perience, | to rest and sleep. |
| Dr. D. R. Lyman, Gaylord Farm Sanatorium, Walling- | No, | no, | no, | not to the ab- sence of sun- light, | no experience, | to rest and sleep. |
| ford, Conn | No statistics, but thinks no, | no, | no, | not to the ab- sence of sun- light, | beneficial, | not to the absence of sunlight. |
| Dr. Charles L. Minor, Asheville, N. C | No, | no, | no, but beneficient, | to cold and not to the ab- sence of sun- light. | no experience, | to rest and sleep. |
| Dr. J. H. Musser, Philadelphia, | No, | no, | no, | to cold and sun- light, | see explanation, | to rest and sleep. |
| Pa. Dr. Nicholas Nahm, Frankfort on the Main, Germany | No statistics, but thinks no, | no, | no, | to cold and not to the absence of sunlight. | no, | of sunlight, but to rest and |
| Professor Wm. Osler, Oxford, England | No statistics, | no statistics, | no. | to cold and sun- | beneficial. | to rest at sleep. |
| Dr. Edw. O. Otis, Biston, Mass. | No statistics, | no statistics, | 110, | to cold and sun- light. | beneficial, | not to the ab- sence of sun- light. |
| Dr. Jay Perkins, Providence, R. I. | No statistics, | no statistics, | no, | to the cold, | not harmful, | to rest and sleep. |

| Name. | 1 | 11 | 111 | 17 | V | VI |
|---|----------------------------------|----------------|-----------------------|--|--|--|
| Dr. William H. Peters, Provi- | No, | no, | no, | to the cold | not harmful, | to rest and sleep. |
| Dr. F. M. Pottenger, Monrovia, | No, | no, | no, | not to the ab- sence of sun- light, | | to rest and sleep. |
| Dr. John H. Pryer, Buffalo, N. Y | No. | no, | no, | to the cold and more sunshine, | no experience, | to the absence of sunshine. |
| Country Sanatorium, Bedford Station, N. Y | No statistics, | no statistics, | no, | to the cold and not to the absence of sun- light, | no experience, | not to the ab- sence of sun- light. |
| Dr. Theodore B. Sachs, Edward Sanatorium, Chicago | No, | no, | $\Pi \Theta_{\kappa}$ | to the cold, | no answer, | to rest and |
| Dr. Henry Sewall, Denver, Colo | No, | no, | no, | to cold, | indifferent 1' - | has formed no opinion. |
| Surgeon General George M. Sternberg, Washington, D. C. | No statistics, | no, | no. | to the cold, | no experience, | to rest and |
| Dr. Edward L. Trudeau, Sara- rac Lake, N. Y | No statistics, but thinks no, | no, | 1104 | to the cold, | no experience, | to rest and sleep. |
| Geh. Hofrat Dr. Turban, Davos- Platz, Switzerland | No, | no, | no. | to cold and not to the absence of sunlight, | no experience in general, but in local favor- able, | depends on fe- brile or af- febrile condi- tion of patient. |
| Dr. T. M. Tyson, Philadelphia, | No, | no, | 110, | no answer, | no, | to rest and sleep. |
| Pa. Dr. Hans Weicker, Görbersdorf, Germany | · Yes, | no, | no. | see special state- ment, | beneficial. | not to the ab- sence of sun- light. |
| Hofrath Dr. Wolff Reibolds- grun, Germany | No, | no, | no, | to the cold, | no experience, | to rest and sleep. |

Summary.

To the first question, which reads: Do your statistics show that blond patients do better in cold weather or cold climatic regions than those having brown or black hair? twenty-two have answered: No; three have answered: Yes; ten have no statistics; eight have no statistics, but think no; one was undetermined.

To question 2, which reads: Have you noticed the reverse, that is to say, that brunet patients do better in warm weather or warmer climates than blonds? thirty-four have answered: No; two have answered: Yes; seven have no statistics; and one was undetermined.

To question 3, which reads: In your opinion is sunlight harmful in cool or cold weather to the average tuberculous patient, providing he is careful in protecting his head? forty-four have answered: No.

To question 4, which reads: Do you ascribe the improvement which the majority of tuberculous patients experience in winter in our temperate zones, when "taking the cure," to the cold, to the absence of sunlight, or to other reasons? twenty have answered: To the cold; eight have answered: To cold and sunshine; five have answered: Not to the absence of sunlight; six have answered: To the cold and not to the absence of sunlight; two have answered: To cold and rest; and two have given no answer to this question.

To question 5, which reads: Have you any experience in solar therapy, that is to say, sun baths, and do you think them injurious or harmful in carefully selected cases under proper supervision? sixteen have answered: Beneficial; seven have answered: Not harmful; twelve have answered: No experience; two have had indifferent results; three have given no answer to this question; one answered he had no experience in general, but in local favorable; one answered that he had no experience, but doubts its efficiency; one answered that he had no experience, but thinks them not injurious.

To question 6, which reads: Do you consider the relative well being of the tuberculous patients in the morning as the natural sequel of sleep, rest, and quiet of the night, which the average healthy man also experiences, or due to the absence of sunlight?

twenty-seven have answered: To rest and sleep; seven have answered: Not to the absence of sunlight; six have answered: Not to the absence of sunlight, but to rest and sleep; one answered he thinks it depends on febrile or afebrile condition of patient; one has formed no opinion; and one has given no answer to this question.

Five gentlemen, Dr. E. R. Baldwin, Dr. Sherman G. Bonney, Dr. Lawrason Brown, Dr. L. Rosenberg, and Dr. Theodore B. Sachs, have expressed the opinion that blonds, and particularly Swedish immigrants, offer less resisting power to tuberculosis than others.

Some very interesting statements were made beside the direct answer to the questions. Many of these seem to me so valuable that I think it my duty to reproduce them here for the benefit of those who desire to study them carefully:

Dr. Edward R. Baldwin, of Saranac Lake, says: Your intentions to give rational reasons why advice should be individualized to tuberculous patients is a praiseworthy thing, and I heartily hope that it will promote sanity in the discussion of the whole subject. So far as complexions are concerned it is a fair statement, I believe, that the typical habitus phthisicus and facies phthisica include a larger proportion of blonds than of brunets and that such patients are usually less resisting to the disease than others, which would account for any differences ascribed by Major Woodruff to the influence of sunlight. Anyway, I have never taken the matter to be of sufficient seriousness to consider in selecting a health resort.

Professor Hermann M. Biggs, of New York, says:

Sunlight is not harmful, but quite to the contrary. Dr. S. G. Bonney, of Denver, Colo., says:

With reference to the color of the hair, one or two thoughts come to my mind. It might be interesting for you to call attention to the fact that among the various races exhibiting a wide divergence in their susceptibility or resistance to consumption, the Swedes, having light hair, display, as a rule, but relatively slight resisting power. On the other hand, the Jews, having almost invariably dark hair and black eyes, exhibit a high degree of resistance to the ravages of the disease. This is particularly noticed in their resistance to the toxemia. The structural changes go on among these races much the same as in others, but the resistance is relatively great, the progress of the disease a rule slow and the process of fibrosis considerably greater than among most other people. At least this has been my experience in Colorado. It is probable that in addition to the radically changed environment and methods

of living among negroes and North American Indians a factor of some moment is the fact that the disease did not flourish to any extent among their ancestors, and therefore its virulence has not become diminished as a result of transmission through various generations, as is true of many of the Caucasian races.

Dr. Lawrason Brown, of the Adirondack Cottage Sanatorium, says:

I have not known that patients with dark hair do better than those with light, but I am under the impression that many Scandinavians, who have light hair, do not resist tuberculosis as well. I do not believe that sunlight is harmful, though I cannot attribute to it any very great therapeutic value, for otherwise patients in the Adirondacks should all do very much worse than they do. Our patients gain most in winter, between August and Christmas, a period when the weather is becoming cooler, and when there is least sunshine. This also happens to follow the normal weight curve; the explanation, of course, I do not

Dr. E. S. Bullock, of Silver City, N. M., says:

I ascribe the better improvement some make in your eastern climate during the cold weather to two factors-stimulating of all functions from cold, and to the greater dryness that occurs during the winter, when moisture is frozen

Surgeon Major C. E. Bushnell, of Fort Bayard, N. M., says:

I believe it to be a general rule that patients of dark complexion stand the sun somewhat better and perhaps do better in warm weather than blond patients. I believe also better in warm weather than blond patients. I believe also that much depends upon the place of the patient's birth with reference to his fondness for sunlight or heat or the reverse, as I have noticed that patients from the southern States do not enjoy cold as do those coming from the north, and this irrespective of complexion. We expect, however, to get better results in practically all classes in the colder half of the year

Dr. P. M. Carrington, of Fort Stanton, N. M., savs:

In connection with this matter in general, I wish to remind you of a statement made by Major Woodruff on page 115 of his book, regarding the excessive light of the Philippines in connection with the prevalence of tuberculosis. You will note that at least in this particular statement he entirely disregards the enervating effects of the excessive heat and moisture, as well as the possible effects of malaria. Furthermore, I am told by those who have visited the Philippines that, at least during the rainy season, there is remployers that, at least during the rainy season, there is employ practically all my night men from among the patients, and I have the general impression that patients doing night duty have improved while on night duty. patients, of course, get their sleep during the day, but they have almost invariably slept in tents, where the light is, of course, intense.

Dr. S. Solis-Cohen, of Philadelphia, says:

I attribute the improvement of tuberculous patients in winter partly to the cold and partly to other reasons, as set forth in my paper on The Therapeutics of Tuberculosis. Hare's System, first edition, Vol. I, and in the article on Tuberculosis in Weber's contribution to my System. Where we can have an abundance of sunlight with the cold, I consider it very much better. I believe that cold, under proper conditions and with sufficiently robust patients, acts as a stimulus to the resisting powers, on the same principle as the physiological and specific stimulus to antitoxine, which the biologists find in toxine.

Dr. William Duffield, of Los Angeles, Cal., says:

The relative well being of the tuberculous person in the morning is the natural sequence of sleep, rest, and quiet of the night, and the nature of the disease. What this cycle is I do not know, but I am confident it is not due to the absence of sunshine, for we often have patients whose maximum of fever and greatest discomfort comes after midnight. Furthermore, in the southwest we find our patients are prone to carry more fever when we have several weeks of rainy or cloudy weather.

Dr. Henry B. Favil, of Chicago, says:

I have only to make a general statement that no observa-tion of mine is sufficiently broad or analytic to be of any value to you in this matter. My opinion would be quite contrary to that expressed by Major Woodruff, but my statistics are not sufficiently organized to have the value which statistics should have.

Dr. J. A. Flexner, of Louisville, Ky., says:

The absence of sunlight, the dull, gray days if long con-The absence of sunlight, the duli, gray days it long continued generally depress our patients here, whether blonds or brunets, and the same applies to the color of the skin, whether it is white or black. I do not think the absence of sunlight has anything to do with this question. As all of us sleep better in the dark the good feelings are fortunately not limited to or modified by our skins or its hair.

Dr. Charles F. Gardiner, of Colorado Springs,

In Colorado we have sunlight and cold, and both are of benefit to the patients. . . Men in "arctic work" during the summer have twenty hours of sunlight and feel much better than during the dark of winter.

Dr. von Hahn, of Dresden, Germany, says:

Not only blond but brunet patients feel better in winter and in cooler health resorts. One can observe that on bright days in winter the patients are not only in better spirits, but the improvement in the lungs is concomitant.

I approve of judicious solar therapy; even the treatment of laryngeal tuberculosis by sunlight with the aid of the mirror has given excellent results.

Dr. Henry J. Hartz, of Detroit, Mich., says:

In a general way sunlight has the effect according to the degree of heat and length of exposure to stimulate the nervous system (vasomotor) or to depress it.

Dr. Guy Hinsdale, of Hot Springs, Va., says:

I consider a cold, clear day, quiet atmosphere with abundant sunlight, the best. You can't kick out one factor and cannot dispense with sunlight—or any one factor. Each element has its place. . . Absence of sunlight can never claim the restoration forever due to sleep. Every one that I know or have heard is in favor of

Dr. G. W. Holden, of Denver, Colo., says:

I would say yes. I have had some experience with sun baths, and have always found them beneficial, if properly regulated, in all cases, whether blonds or brunets. The reaction of sun baths, however, is not as apparent in the brunet as in the blond. The blond burns while the brunet tans. The reaction of sunlight in the blond is more interesting the property of the prope tense, setting up a greater amount of irritation, which I consider beneficial, thus increasing superficial circulation with a corresponding phagocytic increase. In the brunet longer exposure is necessary to obtain the same results. In those patients in whom the expectoration has become tenacious, I usually begin with sun baths, stripping the patient to the waist, and exposing them, front and back, over a period of from three to five minutes, gradually increasing the time of exposure, regulated by careful observation, up to an hour or more. This exposure is followed by proper baths and massage. The sun baths increase the expectoration temporarily, and give a marked feeling of relief.

Professor A. Jacobi, of New York, says:

The blond when young are frequently fat (the juvenile scrofulous), and do mostly better in cold climates. The brunets are often thin and lean and do not do so well in cold climates. . . In clear, cold weather the patients inhale more oxygen and their cutaneous circulation is improved.

Dr. Herbert M. King, of Liberty, N. Y., says:

We have at the Loomis Sanatorium many patients of decided brunet type from the West Indies, Central and South Americas (Spanish-Americans) of mixed Latin races. Comparing these cases, case for case, with the natives of our own belt of similar classification as to their disease, the former respond more quickly and apparently achieve a more permanent arrest than do the latter. I attribute this to the complete radical change of hygienic conditions and climatic environment, and not to their complexion.

Dr. D. R. Lyman, of Wallingford, Conn., says:

The early ambulant patients seem to me to improve as rapidly and gain as much weight here during the summer as during the winter. The "bed" patients do better in the winter for the simple reason that it is easier to keep them warm and comfortable then than it is to keep them cool and comfortable in the summer. By reason of their being confined to bed they cannot take advantage of the shade by breezes at different parts of the ground.

Dr. E. Meissen, of Hohenhonnef, Germany, says:

I have always maintained that as a rule the consumptive will have the best possible chances for recovery in his home climate, and foreign climates should only be selected to suit individual cases. Though sunlight may not have the therapeutic effects ascribed to it by some, this by no means says that it is harmful. General experience probably teaches us that most people feel better on light, bright, and sunny days. Whether this is solely due to sunlight or to the multitude of other factors I am not prepared to say.

Professor J. H. Musser, of Philadelphia, says:

I am not pronounced on the value of solar therapy, although I want all my patients in sun lighted rooms.

Dr. Nicholas Nahm, of Frankfort on the Main, Germany, says:

I ascribe the improvement in the winter to the cold atmosphere on the one hand and to the careful carrying out of the rules and regulations on the other.

Professor William Osler, of Oxford, England, says:

I have had a good deal of correspondence with Wood-ruff about his theory, which I do not accept at all. As I told him, I do not think that tuberculous patients are better under the sunless skies of England than elsewhere, and I do not think we have any statistics to show that tuberculosis is a relatively more fatal disease in Italy than in Norway or Sweden. . . . I have often employed direct sun baths in tuberculosis and neurasthenia and with benefit.

Dr. Edward O. Otis, of Boston, Mass, says:

I do not agree at all with Major Woodruff that sunlight is injurious to consumptives; on the contrary, I believe it is beneficial.

Dr. Jay Perkins, of Providence, R. I., says:

I believe that an alternation of sunlight and cloudy weather has a better effect on the patient's mind (not bodily health) than the monotony of either. . . While I have no statistics on hand upon which to base an opinion, it is my opinion that the majority of my tuberculous patients feel better and eat better towards night than in the morning, unless there is an abnormally high temperature in the afternoon.

Dr. F. M. Pottenger, of Los Angeles, Cal., says:

I have used solar therapy for the past four years, and have exposed my patients to the sun's rays, reflected by a large mirror covered with blue glass, which cuts off the heat rays, and I am convinced that by so doing I have been able to do them a great deal of good. . . I believe that the sun's light is of value, and I am sure that statistics taken from the institutions in the sunny regions will not fall behind in number of cures.

Dr. John H. Pryor, of Buffalo, N. Y., says:

Blonds and brunets will do well in the well known resorts if their conduct and care are supervised by some experts. We must consider the patient, not also the disease, and select the climate and environments after study and experience.

Dr. L. Rosenberg, of the Montefiore Country Sanatorium, Bedford Station, N. Y., says:

The vast majority of our patients are brunets; there are few intermediate types, and a small proportion of decided blonds. My own experience has been that the latter offer very slight resistance to tuberculosis. Question 4 I think I may answer by the statement that whatever advantage of the control of the contro

tage there is in the colder period of the year is not due to the absence of sunlight. (At Bedford we get far more sunlight than they do at the Adirondacks.)

Dr. Theodore B. Sachs, of the Edward Sanatorium, Chicago, Ill., says:

The improvement which the majority of tuberculous patients experience in winter is not all due to the bracing effect of cold air and stimulated metabolism. The effect of cold air on the temperature of febrile patients must also be taken in consideration. Swedes and other blonds of northern Europe, as you know, succumb readily to tuberculous infection in the northern cities of America, but the explanation, of course, lies in the change from country life to the congestion of large cities.

Dr. Sorge, of Alland in Austria, says:

The effects of bright, sunny days are so advantageous that there seems to be no occasion to treat Major Woodruff's views with any serious consideration.

Geh. Hofrat Dr. Turban, of Davos-Platz, says:

We have in Davos every year hundreds of brunet patients from the south of Europe (Italians, Portuguese, etc.). I have the impression that they stand the cold in winter particularly well even if they come from such warm climes as Brazil, etc. We certainly have no better results with the blonds, and I am sure this could be statistically demonstrated in Davos. The brunets do no better in summer than in winter, though, of course, our summers are never very hot. Those who resist the cold least seem the exquisite female blonds with delicate skin. The reason why the results in high climatic resorts are superior to those in lowlands must certainly be ascribed to the great abundance of sunlight in the former.

Dr. Hans Weicker, of Görbersdorf, Germany, says:

My patients do best on warm, windless days; we do not have excessive heat in Görbersdorf. . . . The patients should be considered individually; the pulmonary invalid in the early stages, when he hardly noticed the symptoms, paid relatively little attention to light, shade, warmth, or cold, but in the more advanced stages with increasing anæmia he becomes more sensitive to cold and other meteorological conditions. In the latter stages of the disease he feels best in rooms which the sunlight has warmed. . . . I should like to qualify your question by saying that the brunet southerners belonging mainly to the Latin race

. . . I should like to qualify your question by saying that the brunet southerners belonging mainly to the Latin race are very much more susceptible to cold and feel much more uncomfortable in winter than the blonds from the north. The cause for it I ascribe to their mode of life in the south.

Dr. Wolff, of Reiboldsgrün in Saxony, says:

I firmly believe that in phthisiotherapy there is no relation between the color of the skin or hair and the climate suitable for the patients. The only thing I have observed in this respect is that the reddish blonds have a greater tendency to hemoptysis, and they as all others predisposed to hemoptysis should not be exposed too much to the direct rays of the sun.

I was not able to receive a direct communication from a distinguished phthisiotherapeutist to whom we are indebted for the innovation of outdoor sleeping for consumptives independent of weather and climate. I refer to Dr. Charles S. Millet, of Brockton, Mass. Instead of letting him speak for himself on the subject under consideration, I beg leave to quote from an article of Dr. H. Barton Jacobs in the Maryland Medical Journal of December, 1901: "Dr. Millet also has strong belief in the efficacy of cold water and direct sunshine as tonic agents in the treatment of consumption, and in order to carry out these measures has introduced a well arranged hydrotherapeutic plant, where needle and shower baths and Scottish douches may be applied; also a secluded room on the roof, open to the sky, where the patients take their turn in lying naked in the sun.

From an article by I. W. Kime, Light in the Treatment of Disease, which appeared in the New York Medical Journal* after this address was delivered, I may be permitted to add his concluding paragraph on Therapy of Light in Tuberculosis.

"Liebermeister says: 'Light promotes the general power of assimilation. The more vigorously this goes on the greater will be the vital energy of the body and its power of resistance to everything injurious, especially to pathogenic microorganisms. This, as well as the hyperæmia induced in the limbs exposed to irradiation for a long time, may explain the cures reported by Cicchansky, Poncet, Perdu, and Blanc in cases of local tuberculosis in joints and bones.'

"We use the condensed blue light at Boulder Lodge in pulmonary tuberculosis, lupus, and other chronic skin lesions, and in postoperative surgical tuberculosis. In these affections light, and especially the shorter rays, is an agent of great utility.

"In pulmonary tuberculosis the entire chest of the patient is made bare, and the light, after passing through the blue screen, is thrown directly upon the exposed portions of the body. These rays penetrate the entire thickness of the thorax, having a retarding influence upon the growth of bacteria and engorging the parts with blood. The light is used for twenty minutes each day. Our results since installing the large light have been so much better than before that there is no room for doubt as to the beneficial effect of these rays.

"While by no means a specific, and in the far advanced cases of but little value, in early cases more rapid improvement is noted than was prior to the

use of the light.

"The psychic effect of the light is an adjuvant of no small consequence in cases of pulmonary tuberculosis. If it had no other result whatever we would under no circumstances part with its use."

From these forty odd expressions of opinion from men who have a right to speak authoritatively we learn that the vast majority tell us that the blond does not do any better in cold weather or colder climatic regions than those having brown or black hair; that brunets do not do better in warm weather or warmer climates, that sunlight is not harmful in cold or cool weather, providing the patient is careful to protect his head, and that the improvement in winter is to be ascribed to the cold and not to the absence of sunlight. A similar opinion is held by the majority in regard to Question 6, namely that the relative well being of the patient in the morning is to be ascribed to rest and not to the absence of sunlight. Concerning solar therapy the majority have expressed themselves in favor of it.

Would it thus not seem wise to be just a little more careful in saying the sun is injurious in phthisiotherapy and is not a preventive and curative

means?

I am not going to burden this paper with theories or even facts relating to the effects of sunlight on other diseases. I will confine myself exclusively to its relation to tuberculosis.

Those of us who work among the poor in the tenement houses know only too well how much more frequently tuberculosis develops in the houses

of the poor, where the majority live, sleep, and work in dark rooms where the sun never enters, or enters rarely. Let me quote in regard to this from a letter received as recently as May 2d from Mr. Robert W. de Forest, president of the New York Charity Organization Society and former Tenement House Commissioner:

More than 300,000 persons sleep every night in dark, unventilated interior rooms in tenement houses in this city. These rooms have no windows even to adjoining rooms. This state of affairs is largely responsible for the fact that 10,000 persons die of tuberculosis in New York City each year.

The great and beautiful city of Paris seems to have a like problem before it. From an interesting paper recently read by Monsieur Paul Juillerat and Dr. Alfred Tillassier, dealing with the hygienic conditions found on inspection of certain dwellings in Paris, let me quote the following:

During the year 1906 the inspectors visited 405 new houses, comprising 20,467 suites, consisting of 43,621 rooms, inhabited by 47,130 persons, an average of 1.08 to each room. This density of population the authors do not regard as excessive. It was found, however, that 3,616 sleeping rooms were practically without air and light, sixty-three air shafts being so small as to be absolutely inadequate to the ventilation or lighting of the rooms opening on them. The proportion of dark rooms was found to be enormous, rooms into which the sunlight never penetrated. They were choice places for the lodgment and preservation of Koch's bacillus, and the almost inevitable infection of succeeding tenants.

Scrofulous diseases, local, bone, skin, and joint tuberculosis, we find most frequently among the children of the sunless tenement homes of large cities, rarely among children reared in the country, where they are exposed to a great deal of sunshine. Thus it would seem that the men dealing with tenement house problems and tuberculosis among the masses are in favor of light, and particularly of sunlight, as a powerful preventive factor in tuberculosis. There is no tendency among them to wish to revise the old Persian precept, "where the sun does not enter the physician enters often."

What influence in reality has cloudy weather on the morbidity and mortality from tuberculosis? According to a recent number of the *Therapeutic Record*, twenty years' observation of phthisis over a district at Dartmoor and North Devon in England has convinced investigators that a population exposed to much cloudy weather and strong prevailing rainy winds has a higher death rate from consumption than a population not thus exposed.

Now as to the therapy. In order to understand the therapeutic effects of any remedial agent one must study first its physiological effects, and by so doing we can know the dose and whether excess is harmful. From physiological experiments on men and animals we have learned that too much sunshine is as injurious as its total absence is deleterious. In a very interesting and instructive article on Sunlight and Health' Dr. F. Gillett Byles, of Denver, expresses himself regarding this subject thus:

The physiological effects of sunlight may be said to be increased metabolism, that is, an increased change in the tissue of our body, both constructive and destructive. This is shown by an increased oxydation of the tissues and food,

^{*}Transactions of Congress on Hygiene and Demography, held in Berlin in 1907.

Medical Record, December 14, 1907.

*Journal of Outdoor Life. June, 1906.

New York Medical Journal, July 4, 1908

and an increased elimination of carbonic acid and other waste products. Starving animals lose weight faster in daytime than at night, although all other conditions, such as exercise, heat, etc., remain the same. . . . Sunlight stimulates the action of the skin and causes the better removal of waste matter from our bodies. This action is due to both the heat and actinic rays, the latter producing

perspiration at a temperature lower than the body heat. All of us know that the patient is more cheerful on a bright, sunny day than on a dark and cloudy day. He eats more, he breathes better, and he is more willing to spend the day outdoors. And have not all of us noticed how grateful the sunlight feels to our patients when outdoors taking the cure at a temperature often below freezing? There is something beneficial, psychically and physically, to those patients in the rays of the sun which it is difficult to explain. It has been demonstrated again and again that in our moderate zones the patients in the general hospitals do best in those wards which have the most exposure to the all-beneficent sun. The celebrated health resort, Davos-Platz in Switzerland, to which thousands of consumptives flock every year, owes its reputation mainly to the great amount of sunshine characteristic of that region. And may we not say the same of our equally world famous climates of Colorado, New Mexico, and Southern California, where the number of sunny days each year amounts often to three hundred or more?

From the before mentioned article of Dr. Byles let me quote in relation to this as follows:

The bactericidal influence of sunlight is well known, and is doubtless of great hygienic importance. It is believed that only the actinic rays possess this power; at least the power of sunshine to destroy disease germs is directly proportionate to the amount of actinic rays contained. This is one of the most potent forces in nature in purifying the air that we breathe and the water that we drink.

The atmosphere of an elevated inland region like Colorado has a lower percentage of humidity than is found in the eastern States. This absence of aqueous vapor in the air permits the sun's rays to pass through more directly, and this condition, together with the freedom from clouds and the great abundance of fair weather, causes the bactericidal, hygienic, and curative power of sunlight to be most effective in Colorado.

Thus far for the ordinary influence of sunlight on the average tuberculous patient in our temperate zones under average conditions. That there is another side to this question, and that Major Woodruff is right in some respects, no unbiased observer will deny. There is no doubt that in tropical countries the newly arrived person who has been born and raised in northern climes, be he blond or brunet, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays of the sun and the intense heat of midday, is bound to suffer and become more easily a victim of endemic and epidemic diseases, not excluding tuberculosis. And even in our temperate zones, in hot weather, when every one feels better in the shade, it is of course absurd to expect the patient (unless he feels chilled) to remain in the sun and be comfortable. Every well equipped sanatorium will not only have rest cure galleries exposed to the south, but also such exposed to the north, where the patients can seek the shade and the cool when the sunny side is uncomfortably hot.

In a personal interview I had with Major Woodruff he told me that about one hundred per cent. of the white soldiers who contracted tuberculosis in the Philippines died from this disease. If that is so it would seem best that as many natives as possible are taken in the army for Philippine service.

Solar therapy is not good for every one, even in our temperate zone, but certainly it has proved beneficial in a number of cases in the hands of others and in my own. The directions I am in the habit of giving my patients regarding the sun when outdoors are somewhat as follows: Never walk in the bright sunlight without having your head covered; when taking the rest cure have your body bathed by the rays of the sun, but keep your head in the shade; if the glare of the sun causes your eyes to feel uncomfortable, wear smoked glasses; when you are feverish do not take any sun baths. Should the prolonged exposure to the sun give you headache, cause a rise of temperature, or make you feel uncomfortable in any way, discontinue these sun baths until the physician orders them to be resumed.

I believe in the direct sun baths for tuberculous patients, but I also believe that the utmost caution is necessary. I attach so much importance to this that when ordering sun baths indoors, I give each patient the following specific directions:

The sunniest room should be selected for that purpose. Fixed carpets should not be placed in such a room, and the floor must be kept scrupulously clean.

In a private house, where neighboring windows are often near, the arrangement will be somewhat difficult, and low screens may have to be used. In winter the room should be heated to from 70° to 75° F. By and by, the patient's skin will be less sensitive to the air, and the temperature of the room can be decreased. The room must always be well ventilated. In summer the upper part of the windows can be left open.

The patient undresses entirely, but if he complains of cold feet, he can keep his stockings and even his shoes on, until he has become warm enough and desires to take them off. He places first a warmed sheet around his body, and then a large blanket; he then lies down on the floor in the sun, his head in the shade, and slightly elevated by a cushion. As he begins to feel the warmth of the sun, he uncovers himself gradually until the whole of his body is exposed to the rays of the sun; he exposes his back by turning on his chest. He remains in the sun room for from half an hour to two hours, according to the directions given him by his physician. He may change the recumbent to the sitting position, or walk about.

Like all curative agents in the treatment of phthisis, sun baths should not be taken without the supervision of the physician. Too much exposure may cause irritating skin troubles. To prevent these the patient should cover himself with one or even two layers of the sheet whenever the sun's rays produce a slightly burning sensation. Should these cutaneous complications occur nevertheless, the baths must be omitted for a time and the skin bathed in warm water, and friction with lemon juice applied. Headache or a feeling of discomfort is the signal to stop, no matter how short a time the bath has lasted. When there is a temperature above normal (1980), sun baths should not be taken, and

the patient should remain in bed. Slightly feverish patients may take sun baths, but when experience shows that the baths are followed by an elevation of temperature, they must be discontinued.

While taking the sun bath the patient should do

some deep breathing.

If it is not possible to have enough sun baths while undressed at home, patients should take them outdoors, dressed in light colored clothes—never in black, red, or brown—so as to permit the better penetration of the actinic rays. Patients should always take an umbrella or parasol with them, so that they may shade their heads, no matter where they take their sun baths.

To avoid all possible misunderstanding, I wish again to repeat that the indication for solar therapy and its methods of application will depend not only upon locality (altitude, latitude, or other climatic factors), upon the season of the year, upon the disease for which it is prescribed, but also upon the idiosyncrasies, that is to say, the peculiar susceptibilities, of the individual. Never should solar therapy be resorted to without direction by the attending physician. For patients who, for example, are subject to frequent hæmoptyses, I think direct sun

baths absolutely contraindicated. The number of sunny days in our temperate zone, in addition to altitude, have been heretofore largely our guidance regarding the selection of climate for our consumptive patients. In my Maxims for the Selection of Climate in Tuberculosis' I say, in relation to this the following: The ideal climate for the average tuberculous patient in the earlier and more hopeful stages of the disease is the one where the extremes of temperature are not great, with the purest atmosphere, relatively little humidity, much sunshine, and all conditions which permit the patient to live comfortably out of doors the largest number of days of the year, and the largest number of hours out of the twenty-four. For tuberculosis of the bones and joints and scrofulous affections of childhood the seacoast climate in our temperate zones comes nearer to deserving the term specific than anything else. The peculiarly beneficial influence of seacoast climate in bone and joint tuberculosis is doubtlessly to be ascribed to the aseptic and ozonic quality of the air, and the iodide and other salts suspended therein. The native locality of the tuberculous must be taken into consideration when making a climatic change. The patient who spent his early youth in Norway or other parts of northrn Europe, or one born in Massachusetts, Maine, or northern New York, where the winters are rigorous, will usually do better in such climates as Colorado, the Adirondacks, Sullivan or Orange counties of New York offer. The sons and daughters of sunny Italy and our American born citizens from the warmer zones will do better in climates such as are to be found in southern California, New Mexico, Arizona, North and South Carolina, Virginia, Florida, Bermuda, etc.

To the foregoing rule there are exceptions, and besides considerations relating to nativity one should be guided in a large measure by the patient's personal experience. For example, a cold climate may be selected if the patient has found by experience that he feels more comfortable and less dis-

tressed in winter. A change to a warmer climate is indicated when the reverse is the case. When the experience of the patient has demonstrated that he effet better when near the sea soast, or vice versa, this factor must also serve as an indication for his domicile when seeking cure.

There exist idiosyncrasies in regard to climatotherapeutics and aerotherapeutics as there exist in hydrotherapeutics, electrotherapeutics, and medicinal therapeutics. These idiosyncrasies cannot be discovered beforehand, they can only be learned by

experience.

I am free to confess that I have never been guided by the color of the patient's hair, nor his complexion. There are very few pronounced blonds in this country; one occasionally sees blonds among the Italians and people from other parts of southern Europe, and brunets among people from northern countries. The vast majority of our patients are neither decided blonds nor decided brunets, of course, leaving aside the negro race.

I distinctly remember, however, a few patients who did not like cold, and they were decided blonds, and I also remember some black haired patients who always longed for the winter because they thought they felt much better during that period.

In the editorial in *American Medicine* of June, 1907, already referred to, we read the following:

The difficulty of abandoning false ideas is very nicely illustrated by a remark of Dr. Thomas Darlington, of New York, in an address to the American Climatological Association. He mentioned the good results of the outdoor treatment in the sanatorium at North Brother Island, where the climatic conditions are "distinctly unfavorable," advanced and apparently hopeless cases being cured. Then he said that this took place "despite climate." It seems more logical to reverse the matter and call the conditions distinctly favorable if they are curative. What was once considered bad climatic conditions are now known to be the best, but it will take a long time for the profession to reverse its ideas.

It is my privilege to be the senior attending physician of the institution referred to by my distinguished friend, Dr. Thomas Darlington. Thus I believe I can speak somewhat authoritatively on this subject. If there is any sun in New York my patients of North Brother Island make the very best use of it. They always feel better when the sun shines, and if the day is pleasant in New York City it is many times more pleasant on our beautiful island. It is due to Dr. Darlington's and Dr. Biggs's indefatigable energy that we have now, in Otisville, at a considerable elevation, and where the climatic conditions are still better than on North Brother Island, a sanatorium for the consumptive poor where we send our patients who, upon examination, present the best chances for recovery, because we think in this mountain sanatorium there will be still more pure and dry air, a still more invigorating atmosphere, and still more sunlight.

I firmly believe that we can refute with our present knowledge the accusations which have been brought against modern phthisiotherapy by the lay and even by the medical press, that we are inconsistent, incongruitous, and paradoxical in regard to our views on the value of climate, sunlight, cold,

and warmth.

The great success in modern phthisiotherapy is not in generalizing, but in individualizing our remedial agents. We allow a tuberculous patient who has a good, vigorous reaction to take cold douches, while we warn the one with a feeble circulation, pale and easily chilled, against doing so, and tell him to content himself with tepid ablutions. For the patient with much underweight, but whose stomach has been put in good condition, we try overfeeding, or, as the French call it, suralimentation. In another patient we content ourselves with giving him only three good meals, and simply try to maintain his weight, because in this individual case experience may have told us that stuffing the patient was inadvisable. Overfeeding in such a case might produce discomfort, dyspnœa, and altogether too frequent digestive disturbances. In the patient with no active lesions and whose expansive power is very poor, we may insist on breathing exercises; in another with active lesions, or with a tendency to hæmoptysis, we may caution quiet breathing.

When a patient is in the early stages of the disease we try to train him to sleep outdoors in cold, in wind, and weather; when the patient is hopelessly ill we know it is cruel to thus expose him to cold and discomfort. We consider alcoholism a predisposing factor in tuberculosis, yet there are instances, particularly in the latter stages of the disease, where we occasionally prescribe an alcoholic stimulant and find it beneficent. Because we vary our treatment to the patient's individual conditions, sometimes even to his likes and dislikes, but always with the one point in view, to do the best for him, what seem like paradoxes in modern phthisiotherapy to the uninitiated and the superficial observer, whether they refer to sunlight, air or water, climate, medicine, or other remedial agents, are in reality prompted by the highest considerations and the most careful and painstaking individualization.

None of us believes that modern phthisiotherapy

is an exact science.

We all know that there is much to be learned yet before we can say we have mastered the disease. If Major Woodruff's past and future contributions on this subject shall aid us to a still better understanding of phthisiotherapeutics or prevention of tuberculosis, I am sure all of us will be most grateful to him.

We may err, but we surely will make fewer mistakes if we try to benefit by the experience of the majority. In regard to the influence of sunlight in tuberculosis and the value of solar therapy, let us say with St. Paul: "Prove all things; hold fast that which is good."

16 WEST NINLTY-FIFTH STREET.

* U DANGERS OF EXCESSIVE SUNLIGHT IN TUBERCULOSIS.

BY MAJOR CHARLES E. WOODRUFF, Fort Wadsworth, N. Y., Medical Corps United States Army.

I thank the editor of the New York Medical Journal for the privilege of replying to Dr. Knopf's paper in the same number in which it appears, for unless it is immediately answered it will do harm. Continued investigations of the effects of light have revealed no evidence which will change the conclusions published three years ago, as to people in

health, that, while excessive sunlight is always harmful Ito them, that fact is not proof of the need of darkness, and that "we do need the stimulation of a little light." How much, if any, of this stimulus is needed by the sick is another matter, and the recent evidence is causing much doubt as to the correctness of old opinions, particularly as to tuberculosis. The editorial in the *Medical Record* which Dr. Knopf approves was written for the sole purpose of warning against the publication of views not warranted by the recently discovered facts. It is doubly regrettable to find it stated that anyone advocates dark living rooms for any purpose.

The article on Actinophysiology and Actinotherapy in the American Medicine, April (not June), 1907, was not directed against his views published in the New York Medical Journal, May 25, 1907-a month later-but reference was made to his article of January 19, 1907, in the Journal of the American Medical Association, in which he advocates light colored clothing so as to transmit light. If thick enough for winter wear it is just as opaque as the dark. Nor were certain editorials in the American Medicine directed against his views on the subject (presumably light), but to praise his article calling attention to the benefits of cold air, and combat his explana-tion that cold was "vitalizing," whereas every one knows that it is as devitalizing as anything can be. No explanation of the effects of cold air has ever been published.

I never told Dr. Knopf "that about one hundred per cent, of the white soldiers who contract tubercuplosis in the Philippines die from this disease," but that all cases in white people in the tropics promptly perish unless they are sent home. The facts were discovered by the army as early as 1900, and it was necessary to issue a military order that the cases should be hurried to the transports as soon as found. Some would die while waiting a boat, and even now, with all our haste, they not infrequently die before reaching San Francisco, but if they are sent home at once, before any headway is made, recovery fol-

lows in the usual percentage of cases. It was this frightful rapidity and fatality of the disease among soldiers in the tropics that led me, as a military sanitarian, to try to find out the causes. There must be many reasons for this loss of resistance. The heat is undoubtedly the main one, because cases here make the most improvement in winter. Some deteriorate in our northern summers, which are far from tropical. Humidity always increases the effect of heat, as it interferes with evaporation of perspiration and the normal loss of body heat in this way-perhaps one of the reasons why arid climates are beneficial, particularly if they are also cold. I had already proved that excessive light was harmful to those with unpigmented skins, and that their death rate was higher in the Philippines than the brunets. Sir Alfred Keogh, medical director of the British army, writes me: "We hope to take up the question of the effect of light on the health of troops before long. A considerable number of experiments were made in India at the time your book first came out, which entirely supported your theories as to the depressing effects of direct exposure to the sun being due to the actinic rays, not to the heat rays

It was presumed then that possibly excessive light was another cause of the tropical tuberculosis susceptibility, and an investigation was started, which has brought forward many facts at variance with accepted theories as to the benefits of unstinted sunshine in prevention and cure. It was also found that in the mass of tuberculosis literature there was not a single bit of proof anywhere that sunlight in any dosage was an essential in prevention or cure, but that the evidence pointed the other way. For instance, every recorded experiment with excessive light showed that it was lethal, and that in less amounts it injured living tissue, there being, of course, great variation in resistance. All short rays are used in therapy to destroy something. amazing of all, it was found that in Finsen's cure even the concentrated light is not strong enough to kill the bacilli, but does injure the atypic cells, and that it also acts like other irritants used in curing lupus, but no one knows why or how. (Mally, Revue de chirurgie, August 10, 1907.) Our former opinion that light penetrated our bodies sufficiently to kill the bacilli must be abandoned.

It was found that in every part of the world, hot or cold, man was pigmented in direct proportion to the maximum intensity of light. In cloudy Scandinavia he is blond, but his neighbor, the Laplander, like the Eskimo, is pigmented against the awful snow glare. Koehler-Hillier's map (see J. B. Huber's Consumption and Civilization) shows that the tuberculosis mortality rate per 1,000,000 living is least in the cloudiest parts of Europe. The least city rates are also in Amsterdam and London, both cloudy, the latter having only 1,027 hours of sunshine, while the highest are in sunnier places like Moscow, St. Petersburg, and Vienna. Walsh, of Phipps Institute, is reported as saying that patients do unusually well in Pittsburgh and London. the mountains of Switzerland, Austria, and Germany it is cloudy nearly half the time, and yet the results are excellent. In our own Adirondacks there is even a greater number of cloudy The census table of tuberculosis mortality of various countries must be interpreted as to racial immunities, state of nutrition, and methods of living, as well as heat and light; but it is noted that the three worst countries —Austria, Servia, and Chili-are far from cloudy, but the three best, omitting Italy, are Netherlands, England and Wales, and Belgium. Italy has many cloudy mountainous climates, which reduce its mortality for the sunny coast cities have very high rates.

Hoffman's statistics (p. 119, Huber) show that the most fatal trade is stone cutting, 43.1 per cent. of deaths being from tuberculosis, yet stone cutters who work in the dark—miners—have only 6.4 per cent. In the 1908 report of the medical examiner in chief of the Royal Arcanum, Dr. Sanford Hanscom, East Somerville, Mass., granite cutters head the list of occupations as to tuberculosis mortality and miners end it. This latest table is so important that it is quoted in full to show that light or darkness might have opposite effects from what we now believe. It is also to be noted that in the other occupations it seems to be a question of fresh air more often than light or darkness, yet it is remarkable that those having the most light suffer most and those having the

least have the best record, and some indoor workers have low rates and outdoor workers high ones:

| | deaths from consumption to death |
|--|----------------------------------|
| OCCUPATION. | causes. |
| Granite cutters | |
| Printers | |
| Barbers | |
| Bookkeepers Molders | |
| Clerks and salesmen. | |
| Machinists | |
| Druggists | |
| Teamsters, "drivers," cab and hack drivers | 16.57 |
| Plumbers and pipe fitters | 76.52 |
| Tailors | |
| Bakers and cooks | T4.08 |
| Railway track and yard employees | 13.89 |
| Dentists | |
| Teachers | |
| Policemen | |
| Carpenters | |
| Painters | |
| Tobacco manufacturers and employees | |
| Blacksmiths | |
| Restaurateurs and waiters | |
| Bankers and bank employees | 10.58 |
| Traveling salesmen | |
| Masons and plasterers | |
| Clergymen | 10 12 |
| Merchants | 9.60 |
| Lawyers | 9.34 |
| Physicians | |
| Farmers | |
| Railway trainmen, not including engineers ar | |
| Master mariners and pilots | |
| City firemen | |
| Hotel proprietors and managers | |
| Miners | 294 |
| TA I | |

If excessive sun exposure does good the blonds should do best, for more light penetrates their skins, but if it does harm they should suffer a higher mortality. As a matter of fact, Bartholomew's Physical Atlas of Meteorology shows that marked blonds flourish only where it is cool or cold and there is less than 1,250 hours of sunshine per year, and that as the hours of sunshine in Europe increase the more brunet is the population. Migration into a sunny land is followed by extinction sooner or later. Bouchereau (Anthropologie, Paris, 1900), in a study of the central plateau of France, shows that even there these migrated blonds are losing ground, being more subject than brunets to certain fatal diseases, tuberculosis especially. The inhabitants of the northern, cloudier parts of France have always been more strongly blond, and Louis XIV sent ship loads of these blond women to populate Canada, yet they have lost ground in that sunnier place, for the population is now strongly brunet. The type dies out here, too, for in spite of enormous blond immigration the marked blonds are very few, and they are mostly immigrants, or their immediate ancestors were. The blond Puritan immigrants of New England have left scarcely a trace, and the French blonds of New Orleans are all gone. Something kills them off, My own statistics showed that the blonds had a higher death rate in the Philippines, and the surgeon general's reports show that the soldiers in this country are healthiest in the darkest spots.

Though blond Scandinavians have less resistance in America it must be remembered that in their native cloudy home, which has one of the least rates in Europe, they are very resistant and curable. They cannot stand city life nor light countries, and city life is more glary than the country. Negroes, on the other hand, were nearly immune in slavery days, though enveloped in darkness by their skins, but now they show great susceptibility, due partly, if not entirely, to unsanitary living, yet under proper treatment, it is now reported from Fort Bayard, the prognosis "does not seem to be so absolutely bad as it is considered to be by many in the north" (Bushnell), and these men are treated in darkness even if given sun baths. Unfortunately negroes are generally advanced cases when first seen. Significantly enough, both army and navy experience shows that negroes do not stand a very high heat (over 110° F.) as well as white men-the reason being probably the absorptive power of dark surfaces. It is to be noted that heatstroke among whites is not very common either in the moist Philippines or in the greater summer heat of our arid West, but in both places light prostration is more common. Many British military surgeons now believe that sunstroke in India is due to the actinic rays, though they do not define "sunstroke" (Journal of the Royal Army Medical Corps, July, 1908. See also Medical Record of August 8, 1908).

Space does not permit even reference to all the discrepancies discovered, but in every case they could be explained on only one hypothesis—that excessive light was harmful. If this could be proved true, then we would have something to go on, in preventing the soldier mortality in the tropics. Only two specialists had noted the matter, Burton-Fanning, who found that even the sunlight of England caused anorexia, fever, headache, and prostration, and White, of Colorado Springs, who found that our intense western light caused fever, and both advised shade, and Huddlestone (Medical Record, February 9, 1907) stated that two children convalescent from pneumonia, who had been given outdoor exposure, actually suffered from "sunstroke" as a consequence.

In discussing the matter with Dr. Livingstone Farrand, secretary of the National Association for the Study and Prevention of Tuberculosis, he suggested a questionaire, and I prepared the following one, which he most kindly distributed where he knew statistics were kept:

The modern treatment of tuberculosis has now been sufficiently tried to yield enough facts for a distinction of cases to determine the influence of climate in each ethnic type. It is an elementary biological law that every species of living thing is physically adjusted to its climate, and perishes in a markedly different one—a law applicable to each type of man. The proofs are conclusive, for instance, that skin pigments have been evolved to protect against the actinic effect of the sun's rays, for in every climate, hot or cold, the degree of pigmentation varies with the intensity of light, which, like rays from radium and Crookes's tubes, is invariably injurious to living protoplasm if applied in sufficient intensity. The facts are set forth in my work on The Effects of Tropical Light on White Men, and have already called forth sufficient data to revive the old suspicion that blonds, though vigorous in Scandinavia, are more or less injured by the sunny American climates, and produce more cases of tuberculosis proportionately than brunets—a difficult matter to prove, as we have no data as to the relative numbers of the two types in our population. There is more evidence that in very sunny climates and in summer time and in institutions where sun expo-sure is a feature, the very blond do not improve as rap-idly as the dark brunet, and that there is a smaller percentage of recoveries in all cases in sunny climates than

in cloudy, and a more rapid decline of incurables—statements of such importance that they should be proved or disproved at once. As such an investigation may show that climate is a great therapeutic factor after all, and also that what is beneficial for one type may be harmful to another, it is hoped to collect as many data as possible.

that climate is a great therapeutic factor after all, and also that what is beneficial for one type may be harmful to another, it is hoped to collect as many data as possible. What is needed is a classification of all cases into three groups: (1) Marked blonds, like the Baltic type; (2) marked brunets, like the Mediterranean; and (3) those of medium complexion who constitute the majority of patients, but who will not furnish as valuable information for comparison as the first two.

Anything you can do to forward this investigation by furnishing statistics as per enclosed form, or any other

facts known to you, will be much appreciated.

The responses were prompt and generous, though generally to the effect that no attention had ever been given to the subject, but that statistics would be kept in the future. Nevertheless some most valuable data have been sent. It was evident that such an investigation would take a year or longer, but Dr. William Osler, though disagreeing with me, requested me to prepare a preliminary report for the September Congress. I proposed doing this, but Dr. Vincent Y. Bowditch, of Boston, kindly warned me that, as it would be too late to get on the programme, the paper would only be read by title, "even if it passed the censorship." I take this opportunity, then, of presenting the facts so far gathered.

It is quite evident from Dr. Knopf's paper-he being a director of the association which organized the Congress,—that the matter of the damage of light will not be given any more courtesy, than was given to Dr. George Bodington's opinion in 1840 that the disease should be treated in the open air (see Huber's Consumption and Civilization). In 1840 the profession was strongly of the opinion that cold air was fatal, and they drove Bodington's patients away and closed this first modern sanatorium. Dr. Knopf is repeating the error-instead of giving facts, he is giving opinions of the leaders. His authorities have never noticed any harm from excessive sunlight, not because it does not exist but because they have never looked for it. Bodington's opponents never noticed the harm done by indoor treatment and their opinion likewise did not prove that there was no damage by it. Bodington saw that the evidence all pointed the other way, and likewise there are a few now, who have observed facts which point the opposite way than the profession as a body thinks. For instance, Bacon, of Tombstone, Arizona, says: "My personal notion is that the light races oppose the least resistance to tuberculosis of any of the types." Nahigan, of Seton Hospital, Spuyten Duyvil, New York, says: "I, however, think that marked blonds succumb to the disease more readily than brunets." Petit, of Ottawa Tent Colony, Illinois, says: "Scandinavians as a rule are not very satisfactory patients from the standpoint of results." Dr. H. Edwin Lewis, of New York, noticed in his sanatorium in Burlington. Vermont, that he did not get good results from sun exposure, and the following years he kept patients in the shade with more improvement. Bullock, of Silver City, New Mexico, quoted by Knopf as to cold, writes: "I am very careful even in winter, about exposing my patients to direct sunlight as I learned, a posteriori, long ago that direct sunlight was bad for them. It agrees with very few to stav in direct sunlight even in fairly cold weather,this independent of coloring or, as you say, ethnic

type. As a therapeutic means I gave up direct exposure long ago." By Bartholomew's map, New Mexico has as much light as North Central Africa, and the natives of each place are heavily pigmented, so that our brunets, even of the type of southern Italy, are insufficiently protected against New Mexico's sun, and the lighter brunets from central Europe of course are more injured and blonds the most. Dr. John Carling, of New York, noticed at the Park Ridge Sanatorium that "brunets respond much better to open air treatment than do blonds." A prominent physician of Philadelphia, where the sunshine is not as severe as in Silver City, says: "I am in accord with the modern view that sunshine is less important in the treatment of pulmonary tuberculosis than was formerly supposed, although I cannot go quite so far as to assert that an excess of sunshine proves injurious, simply because this observation has not fallen within my personal observation and experience." Rosenberg (Montefiore Home, N. Y.) says that Jews who are decided blonds "offer a very poor prognosis; they are apt to be hæmorrhagic types or those in which the disease is rapidly progressive." But Flick (Phipps Institute, Philadelphia) says: "So far as I have been able to make out from our statistics, they do not support the view that blonds are more subject to tuberculosis or recover from it less readily than brunets. Our statistics are not of a large enough number of cases to warrant conclusions, however." Courtois-Suffit and Tremolières (La Pratique thérapeutique) have also advised that sun exposure be avoided and that patients carry umbrellas.

Summer experience with field hospitals shows that all fevers rise in hot, glary tents, and are reduced by removal to cool, shady houses. Joseph Walsh sends me the following from the Phipps

Institute:

Dark eyes, 846. Light eyes, 1,021. No record, 1,866.

Unimproved

| LIGHT COMPLEXION. |
|---------------------------|
| Disease arrested |
| Improved 71 |
| Unimproved |
| Died |
| Made only one visit |
| and only one visition |
| . 213 |
| DARK COMPLEXION . 213 |
| Disease arrested |
| Improved153 |
| Unimproved144 |
| Died |
| Made only one visit |
| rade only one visition of |
| 477 |
| RED COMPLEXION 410 |
| Disease arrested |
| Improved |
| Unimproved |
| Died |
| |

Made only one visit..... 5

Disease arrested

| | | 72 |
|---------------|---|-------------------------------|
| of protecting | paper was writter Carling as show the tuberculous for excessive high | on the no ssity it. Ves. 3 |

Made only one visit..... 5

| | DARK EYES. |
|----------------------|------------|
| Disease arrested | |
| Improved | |
| Unimproved | 122 |
| Died | |
| Made only one visit. | |
| | |
| | 348 |
| | LICHT EVES |
| Disease arrested | |
| Improved | |
| Unimproved | |
| Died | 43 |
| Made only one visit | |
| made only one visit | |
| | 376 |
| | |

This seems to indicate that blonds do furnish more than their share of Philadelphia's population and surely do not improve so well as the brunets.

The following table is the summary of cases reported by Nahigan (Spuyten Duyvil, New York), Lyman (Wallingford, Connecticut), Montgomery (Philadelphia, Pennsylvania), Joseph O'Malley (Philadelphia, Pennsylvania), Pottenger (Monrovia, California), Barlow (Los Angeles, California), Bacon (Tombstone, Arizona), Holden (Denver, Colorado), and Carrington (Fort Stanton, Mexico), to whom my thanks are given. A few others reported also, but as they divided the cases merely into blonds and brunets the figures are not included.

| Total | 30 18 | 101 132 2 85 1

Fairly safe generalizations can be based on 1,567 cases, though such varied standards were taken for blonds and brunets as to mar it somewhat. In addition, there is an amazing difference of opinion as to what constitutes cure or arrest, one private sanatorium reporting "apparent cures" of ninety-three per cent. of incipients, fifty-five per cent. of moderately advanced, and fourteen per cent. of advanced cases; "arrest or improvement" in nearly all others, no improvement in less than three per cent., and none progressed. Another reports no cures and few arrests.

Such as they are, the figures show that marked blonds furnish more than their share in all parts of the country and are less curable than marked brunets, and more die in equal times. The facts are the same as recorded in the Twelfth Census (Volume III) that different races in this country have tuberculosis rates approximately proportional to their blondness. The Irish head the list, and Dr. Alexander Lambert writes: "I have the distinct impres-

sion that the Irish with the light brown hair, blue eyes, reddish mustache and beard, is a much more frequent type in the tuberculosis wards than the darker type." Northern Ireland is as cloudy as Scandinavia. Ripley says that northern France is more Teutonic (blond) than southern Germany, and the same may be said of Ireland as a whole. difference between blond and brunet death rates in the United States is sufficient to change the type of population in two centuries from this disease alone, not mentioning other complaints more common in marked blonds. Northern Germany and France being cloudier than any part of the United States except our eastern mountains and northwest coast, should show no such difference in the two types, and neither should Scandinavia or northern Scotland, which are the darkest places in Europe. But differences have been found in southern England, where the blond population is not maintaining itself.

Owing to different methods of treatment in sunny climates and the little reported from the cloudiest places, nothing can be determined now as to the relative curability of blonds in the two places. Only the deaths are sure. According to these reports, if one hundred blond patients of all stages are kept in the northeast, sixteen per cent. die within a year or two, but if they are sent to the southwest, twentyfive per cent. die. Sunny Florida was abandoned because of its awful results. The mortality among the white population of Virginia is a disgrace to civilization, and a Richmond doctor calls the matter of light a "sophistry," that is, if the editor of the News Leader is correct. Even the brunets have a large death rate in the southwest (19.5) as compared with the northeast (13.5), as the light difference is the same as between Austria and Sahara. The average heat is not much different between the northeast and southwest places, so that factor can be eliminated.

The most remarkable statistics are presented by Dr. John E. Bacon, of Tombstone, Arizona, of patients of whom he had personal knowledge in three years. It seems to show that in blonds not under sanatorium management the terrific light of the place is very fatal, yet one man has stated that it is not "of sufficient importance to consider in selecting a climate"

| MAF | KED I | BLONDS. | Pro- | | |
|-----------------------|---------|---------|------|-------|--------|
| | Cured. | rested. | | Died. | Totals |
| Incipients | | | | | |
| Moderately advanced . | | 2 | 2 | 2 | 6 |
| Advanced | | | | 7 | 7 |
| | | | | | - |
| 31 31 | E P. L. | RUNI IS | | | 1,3 |
| Incipients | | | | | 6 |
| Moderately advanced . | T | 2 | | 3 | |
| Advanced | | 0 | | 1 | 7 3 |
| | | | | | |
| | | | | | 16 |
| | | 4111710 | 11 | | |
| Incipients | | | | | 3 |
| Moderately advanced . | | | 3 | 4 | 3 8 3 |
| Advanced | .— | | I | 2 | 3 |
| | | | | | |
| | | | | | F.1 |
| | | | | | |

Miss Clara D. Motthews, teacher of methods, City Fraining School, Elizabeth, N. J., in writing of the

advice as to treatment of nervous children in the lightest months, says:

I have followed the suggestions made with very notice-the results in several classrooms. On very bright days I carefully shaded the windows before the children came in from the playground. The relief to the children was immediately evident, and they worked quietly the whole afternoon. As a further test, I left the windows open the next bright day. The children were restless during the entire session. Only a short time ago, while visiting classes taught by pupil teachers, I approached a room from which evidence of great disorder could be plainly heard. I entered the room quietly, drew the shades, and noted that the children were quiet in a very few minutes. The same children were in the best order when I returned to the room later in the afternoon. I have been so much impressed with the results of carefully regulating the light, that I now instruct all girls in my method classes to try this plan of securing quiet work during the trying spring days.

If such marked stimulation follows undue exposure of healthy children, surely we must expect greater harm in the case of more susceptible consumptives. It is not surprising, then, that the only observations reported from Manila to date state that of the five white soldiers recently observed with tuberculosis, four were marked blonds and one a medium type.

As the only difference between a blond and a brunet is the greater penetrability to light of the former, it must be a brave man indeed who will prescribe unstinted light—almost as brave as the physicians of 1840 who kept their patients indoors

and saw one hundred per cent. die. Carrington says that he has been informed that in the Philippines "at least during the rainy season, there is very little sunshine" which shows what false

climatic conceptions obtain.

The stimulating effect of sunshine is so well known that it is a waste of time to mention it again, but why we should want the patients stimulated even to the point of exhaustion is a mystery. Sleep and rest are said by all to be the reason why cases are better in the mornings, yet sunlight prevents both sleep and rest. It is so illogical then to give it.

Knopf's questions I and 2 show misunderstanding of the matter, for it is a question of light as well as heat. Cold climates differ, and blonds should do better in some than in others. Such brunets as Esquimaux perish in warm places, they are only protected from the light of snow glare in summer when their heads are exposed. Questions 3 and 5 are amazing, for what good or harm can a sunbath do, if the patient is enveloped in opaque clothing and his head protected? Yet hundreds of physicians are giving such "sunbaths" and asserting good results from them. It is as futile as giving medicine in insoluble capsules, so that it passes through the intestine unabsorbed. Questions 4 and 6 properly bring out the benefits of cold air and rest but give no evidence on the matter of light.

The most amazing thing about the paper is the frequency with which my opinions are mentioned by physicians, when I have not yet come to any conclusion whatever, except the one which Dr. Knopf approves, that excessive light is harmful. The points upon which I am in complete ignorance are exactly what constitutes excess, and whether a less dosage does any good. Sorge, in Austria, says: "The effects of bright sunny days are so advan-

tageous that there seems to be no occasion to treat Major Woodruff's views with any serious consideration." I wish I knew what those views are. But as Austria has only 1,700 hours of sunshine and our southwest over 3,000 and that very intense, it is quite evident that a "bright sunny day" in Sorge's mind would be considered very dull in New Mexico, or the Sahara.

Turban mentions the abundance of sunshine in high altitudes as the reason for better results, whereas mountainous resorts are notoriously less sunny

than the lowlands.

Knopf refers to the long known fact that in crowded windowless rooms the disease is horribly prevalent, but what right has he to assume that it is due to the darkness and not to the heat and bad air, when miners in the well ventilated mines are so free of the disease? No control experiments have been made in which the tuberculous and healthy were subjected to identical conditions, except one group shaded and the other exposed to sunshine such as in Arizona. To be sure, Trudeau's experiments with tuberculous lower animals show that those treated outdoors did far better than those kept in a dark cellar, but was the poor light of the Adirondacks the factor or its cold air? The vast majority of animals live in the dark, even plant cells are protected under the bark or green pigment of leaves. Nor can it be understood why Byles and Knopf desire the increased oxydation of tissues and food by light, when it is so necessary in this disease to reduce expenditures. Byles has stated (Medical News, November 26, 1904) that the exhilaration of Colorado is so marked that residents must sometimes be sent away permanently for insomnia, and he says that nervous people should not go there. The latest thing investigated about consumptives is their almost universal neurasthenia,-some so bad even after recovery as to be considered insaneand therefore these are the very invalids not to be sent to exhilarating places.

The statement that patients in the sunniest wards do best is not always true, if ever. Ransom, at the Dannemora prison, found that they did best in the shadiest part of the ward, and northern New York is not very sunny either. Patients are carefully shaded in the fresh air cure in the suburbs of Berlin under Lennhoff, Becher, and Pannwitz. Certain places owe their "reputation to the great amount of sunshine," but Lourdes has a "reputation" too! The climate of Milan fulfils Knopf's ideal and London does not, yet it would be dreadful to send a patient from London, where the 1904 tuberculosis death rate was 166 per 100,000, to Milan, where it was 254, and London is notorious for its overcrowding, fifth, poverty, and underfeeding—all causes of increased

mortality from tuberculosis.

Even in cloudy England, Sherwood Forest Sanatorium (Huber, p. 282) has its verandas so built as to shelter "from the wind in winter and the sun in summer." Other English institutions face the rooms to the south to get the light, and then find that they must shut it out with "outside blinds and light inside curtains." In France, the sanatorium at Caingnon is actually closed in the hot months.

One of the most absurd articles ever written is that by Dr. T. B. MacDonald (Journal of Tropical Medicine, May 1, 1908) who lives in Australia in a climate resembling Alabama, and because he finds that the farmer's children are as healthy as Alabama babies, he concludes there is nothing in pigmentation after all, and that Nature is wrong to go to so much trouble in light countries as to pigment the natives

Osler said that perhaps one reason for good results in rainless districts is the fact that patients spend more time in the open, but it is reported to me that results are excellent on our northwest coast where it rains most of the time. Dr. Knopf says the sea coast is so good as to deserve the term speci-fic, but Carlin, of New York, reports better results inland than on the coast. What must we say of the alleged benefit of ozone, iodides, and other salts in the sea air? Are they present in sufficient amounts to have physiological effects? Who has proved that they do good if they are present? There is nothing recorded on the subject. Knopf's statement that people born in warm zones do better in such climates is not correct. It depends on the type of man, sick Englishmen born in India are sent north to get well.

We knew beforehand that the vast majority of physicians advocate sunshine even in excess, but that does not prove anything, any more than in Bodington's time. Dr. Knopf well quotes "prove all things; hold fast that which is good," but his paper presents no proofs whatever that light is good enough to hold fast, and the modern idea is that it is not so important as once thought. He objects to the charge that phthisiotheraphy is backward, yet that charge is true and due to faulty observations. It is a dreadful condition when a curable disease carries off seventeen per cent. of all patients within a year or eighteen months even under sanatorium treatment, and twenty per cent. more progress or are unimproved. It is amazing that so many phthisiotherapeutists express such positive opinions on a subject of which they confess they have no data to base any opinion. No wonder eight per cent.

of our people die of consumption.

Experience with hospital gangrene in the civil war showed that patients would recover in tents who would have perished in the overcrowded septic hospitals, but that was mostly in the winter. now find, in field hospitals in summer, that hot, glary tents increase the fever of all diseases, and that removal to a cool, shady room causes a marked decline of temperature. Typhoid fever patients in Cuba, for instance, treated in a modern hospital near Havana two years ago, had no mortality, but of those in the interior in improvised hospitals, nearly seventeen per cent. died. We are teaching that the proper thing to do with the sick in summer is to remove them from tents. Such exposure of the tuberculous to heat and light in tent colonies may account for part of the bad results in summer. Experiments with a tent I devised, with a dark canvas roof, showed it to be markedly more comfortable than the ordinary ones, and it might be beneficial for consumptives.

All of us, sick or well, must use opaque clothes

in our summers in the south and perhaps also in the north. Sambon, of the London School of Tropical Medicine, has invented an opaque cloth for the tropics, having a light outer surface to reflect the heat. As a matter of fact dark outer clothes are cooler than white if we are in the shade or in evenings, as they radiate heat better, but of course light colored outer clothing is necessary in tropical sunshine, and then dark undergarments are needed. Any opaque color will do. Our soldiers preferred the dark blue shirt, but the United States Quartermaster's Department is making some experimental tropical underclothes and hat linings of orange red, though I do not know the scientific reasons for the selection of these gaudy colors. Umbrellas and "merry widow" hats are not unmixed evils in summer after all. The army abolished its most important tropical headgear—the helmet—because the soldiers could not sleep in it in campaigns.

The isonephs (lines of equal cloudiness) and isohels (lines of equal duration of sunshine) do not give proper data for comparing climates. What we need is a map showing the maximum intensity of summer light in each place in the world, and also the total annual amount of light recorded by one of the numerous photometers. Then in selecting climates we could use the isophots instead of the isotherms, and instead of isotheres (lines of equal places of maximum intensity of summer light-and summer heat) we would use the lines connecting there is no name vet coined for such lines. The weather bureau could do it for this country but have not-indeed some of the weather observers will not learn anything in this line of their profession. One of them kindly and genially writes me that I am a "moss back" and says "I have not read your book, nor is there any probability of my doing so, as it seems to me that the book and your letter must be the products of a disordered imagination"—"I do not propose to assist in exploiting any man whose 'ego' and 'major' are so pronounced." "But it is apparent that you are the most ordinary kind of notoriety seeker." So the hundreds of thousands of consumptives cannot count on him for any assistance.

As Dr. Knopf has furnished no facts, I take this opportunity of begging data from everyone in a position to give them, carefully separating the cases into marked blonds, marked brunets, and medium types, and giving the ultimate results separately of incipients, moderately advanced, and advanced cases, the time under treatment, and whether sun baths are given to the naked body. There should be a uniformity in reporting results and for the purpose of this inquiry it is sufficient to divide them into (1) cured and arrested, (2) improved, (3) unimproved and progressed, (4) died. When enough data are collected to make safe deductions in details, a full report will be presented, and then we all can afford to have opinions, and Dr. Knopi can inform his medical friends in his dark native land what our opinions really are. Then also the British Medical Journal may not say it is all "little short of ridiculous," and the next International Congress will not exhibit so many devices for the exposure of patients to the sun to kill nine per cent. of the blonds.

CANCER OF THE RECTUM.

A Study of One Hundred Consecutive Operations for Malignant Growth of the Rectum and Sigmoid.

By JAMES P. TUTTLE, M. D., New York.

(Continued from page 440.)

ABBREVIATED HISTORIES.

Case I.—March 20, 1891. Mrs. M. A., age sixty. Thin, anæmic, wasted. Family history: Negative. Personal history: Alternating constipation and diarrhœa for years. Discharge of blood and mucus from rectum for six months treated for hæmorrhoids. Pain only recently, burning and shooting, especially after stool. Large cauliflowerlike tu-mor beginning just above inner sphincter, and extending up two and one half inches. Admitted index finger with ease. Movable.

March 22d. Operation. Cripps perineal method, prolonged and bloody; took out three and one half inches; could not get the bowel down to suture; left open wound

to granulate.

March 23d. Patient reacting well.

March 24th. Patient had embolism or hæmorrhage of the brain, complete right hemiplegia.

March 25th. Patient never recovered consciousness, died. Peritonæum was stripped up, but not opened, therefore whatever infection occurred was extraperitoneal.

CASE II.—June 26, 1892. Mr. W. G., age fifty-four. Family history: Negative. Personal history: Always healthy until one year ago, when he began to notice some difficulty at stool. After being constipated he had attacks of diarrhoea. Began to lose blood and mucus six months ago. Had pain in back, constant desire to go to stool during day; morning diarrhea of blood and mucus; had lost flesh rapidly. Rectum normal for three inches up, where is found a large friable, nodular tumor, entirely surrounding the gut and almost occluding its calibre. Very slightly movable. Piece was removed and reported adenocarcinoma.

July 2d. Extirpated tumor by bone flap method. Patient lost little blood; only tied four vessels. Access perfect; removed six inches of the gut; end to end suture; fastened bone flap in place by silver wires; packed sacral cavity; put

large drainage tube in rectum.

July 6th. Patient had not had a bad symptom; considerable oozing following operation, but as pulse remained good the packing was not removed until to-day. Pulse 88, temperature 100.2° F.

July 10th. No complications, except sutures in gut have

given way and fæcal matter was passing through wound. July 15th. Patient was up and walking about; fistula was still wide open. Removed silver wire and found bone-

flap firmly united.

July 20th. Etherized patient, freshened wound, and su-tured fistula, stretching sphincter.

July 27th. Bowels moved yesterday and some fæcal matter came through fistula. August 1st. Fistula smaller and granulating well. Pa-

tient left the hospital. November 1st. Fistula almost healed; patient otherwise

May 27, 1908. I have seen this patient almost every year since, heard from him to-day, and he is still in perfect

CASE III .- June 27, 1892. Mrs. P., age thirty-four. Good

complexion; moderate weight.
Family and personal history was negative.

She had been treated by injection for hamorrhoids for three months. Bowels regular, but had to strain when stools were well formed. Throbbing and aching pain in rectum, especially at night. No discharge. Just inside the rectum was found a hard, round, nodular tumor, involving two thirds of the circumference anteriorly; calibre reduced fifty per cent. Mucous membrane moved over it, and it moved on the vaginal wall. Sphincter did not seem involved; it extended up about an inch and a half.

July 10th. Removed tumor by perineal dissection; sphincter dissected out and drawn aside; gut dissected up two and one quarter inches; peritonæum pushed up, but not opened; gut brought down and sutured to skin. Path-

ological report, spindle celled sarcoma.

July 12th. Patient doing well; complained of pain and pressure in the wound.

July 15th. Temperature 103° F.; redness and swelling in wound. Cut two or three sutures and let out consider-

able blood and pus, bad odor.

July 17th. Odor continued bad; slight swelling between rectum and vagina. Opened wound and found a small piece of gauze had been sewed up in wound, removed.

July 20th. Odor gone, discharge much reduced.

August 15th. Fistulous tract healed; good continence;

patient well

May 15, 1908. Patient removed to California, but I have heard from her every year; she has gained sixty pounds and is perfectly well now, almost sixteen years after opera-

Case IV.—August 10, 1892. Mr. L. K., age fifty. Family and personal history was clear. In November, 1891, patient began to be constipated, with loss of blood; four months since had severe hæmorrhage; also one four weeks later. Now has morning diarrhœa loss of blood and mucus from rectum; pain in back and is losing flesh. Bowel movements irregular and unsatisfactory. Anus normal. Deep excavating ulcer two inches up in rectum, involving the entire circumference; barely admitting finger, edges rough and nodular. Pathological report, adenocarcinoma.

August 20th. Operated. Kraske's method; prolonged

and bloody; removed section; end to end suture.

August 25th. Patient doing well.

September 20th. Patient left hospital with fistula, other-

wise in good condition.

September 1, 1903. Recurrence in situ. (Patient passed out of my service and died about eighteen months after operation.)

Case V.—October 9, 1892. Mr. J. W. S., age forty-five. Family and personal history, clear.
Fourteen years ago had fistula treated by ligature; itching ever since. Had aching, shooting pains in, and slight blood and mucous discharge from, rectum for the past four months. Bowels were regular; slight protrusion at stool. External sphincter flabby. Anus irregular, from old inci-sion. Superfluous mucous membrane in rectum; internal hæmorrhoids; on posterior wall, small, hard, nodular mass, moyable, bled easily on touch, about three quarters of an

inch above anus.
October 20th. Operation. Tumor dissected up till pedicle was formed, involving entire thickness of wall of gut and then cut off with clamp and cautery. Pathological

report, adenocarcinoma.

November 10th. Parts practically healed, patient feeling December 1, 1903. Still well; used a bougie to overcome

slight stricture. No later history.

CASE VI.—December 10, 1893. Mr. J. T., age sixty.

Family history, negative.

Three months since I removed a small polypus from anterior portion of rectum, just above the internal sphincter. Was quite well for a while, but recently had suffered from throbbing pain and discharge of blood from the rectum, especially at stool when he strained. Anus normal. At the level of the internal sphincter and extending about one inch upward, was a lobular movable growth, involving the anterior one third of circumference; did not feel like car-Section removed; pathological report, lymphocinoma.

December 13th. Removed growth, local excision. no effort to bring the wound together; prostate did not

seem to be involved

December 20th. Wound healthy, pain ceased.

December 27th. Wound healthy and filling up fast. Left

hospital and was not seen again for several months, when he returned with a local recurrence and metastatic deposits in groin and over abdomen. Died within the year.

CASE VII.-November 18, 1894. Mrs. H., age sixty-five.

Family and personal history, clear.
Patient began to notice discomfort and an occasional discharge of mucus and blood from rectum eighteen months ago. Pain not severe; treated for hæmorrhoids. Now has frequent call to stool, but difficult small passages; bowels Sphineter relaxed. Large, cauliflower growth, extending from one and one half to four and one half inches above

anus; barely admitting finger; friable, movable. Patho-

logical report, adenocarcinoma.

November 22d. Operated. Bone flap method. Gut friable and darkly congested as far up as we could follow it Did not bleed well on section. Denuded anus and invag-inated upper section of gut, suturing it to the skin; no

difficulty in pulling it down.

November 25th. Patient did well for two days, and then surgical or septic mania developed. (At this time we were informed that the patient had been subject to attacks of acute mania.) Had no sign of peritonitis; lower end of

gut was still dark and almost gangrenous.

November 27th. After distressing delirium and constantly increasing temperature, the patient died; probably from sepsis, due to gangrene of the gut, in which circulation was so imperfect.

CASE VIII.—December 1, 1894. Mr. H. L., age twenty-

Family and personal history, clear. One year ago patient had ligature operation for piles, followed by protracted ulceration; later had small hæmorrhoid excised. Suffers now; weight and uneasiness in back and rectum; frequent desire to go to stool. Indigestion and flatulence, discharged mucus and blood frequently, fæces only once a day, and then with difficulty and of very small size. Anus normal; some contraction of sphincter. Rectum; nodular, ulcerating mass two inches above the anus and extending above reach of finger, calibre the size of index finger; growth movable. Preparations for opera-tion, laxative daily and bichloride, 1 in 5,000 irrigations;

milk, meat, eggs, and rice diet.

December 8th. Operation. Kraske's method. Removed coccyx and right corner of sacrum up to the fourth foramen. Excised eight inches of the gut, entering the peritonæum; packed off latter; sutured gut end to end; packed posterior wound. (The chart and history of this case was burned in wound. (The chart and instory of this case was builted the hospital before being entered on my private books. The patient had a long convalescence, but eventually left for home with wound practically healed.) Pathological report,

adenocarcinoma.

January 5, 1905. Remained well ten years after the operation, although he had slight incontinence of fluid fæces, due to nerve impairment or former operations; the muscles were not cut in last operation.

Not heard from since 1905. Was well then.

CASE IX.-May 20, 1894. Mr. A. V., age sixty-two.

Family and personal history, clear. Not ill in thirty years till six or eight months ago, when he noticed bleeding at stool, slight protrusion; this in-creased; now has difficulty in moving bowels and a feeling of weight in rectum; very little pain. Large cauliflowerlike growth four inches up the rectum and extending be-yond the reach of the finger; not felt in inguinal fossa; bled easily. Pathological report, adenocarcinoma.

May 25th. Bone flap operation; very little hæmorrhage; tied only two vessels; end to end suture. Time, two and

one quarter hours.

June 1, 1895. Bowels moved, leakage from posterior fis-tula. Hospital records burned, but the fistula closed after four months; the patient lived until 1902, without recurrence, and died of pneumonia.

CASE X.-November 10, 1894. Mr. M. W. W., age fifty-

Family history, negative.

Well until six months ago, except for constipation. Had taken laxatives for years. Six months ago began to have frequent desire to go to stool, usually without much effect; at first noticed clear mucus; now passes mucus at early morning stool; frequent calls to stool, but only one or two real passages a day. Flatulence and loss of appetite. Some skin tabs around anus. Rectum normal to three inches. where a large, friable, cauliflowerlike mass encircled the rectum, admitting index finger; attached to sacrum, but

movable in front. Pathological report, adenocarcinoma.

November 12th. Bone flap operation. Tumor extended upward four inches; six inches resected; superior hæmorrhoidal artery clamped and cut, clamp left on. Parts united by reinforced Murphy button; wound closed except for lower one and one half inches. Peritonæum sutured; sacral

cavity packed.

November 15th. Clamp and gauze removed, considerable oozing.

November 18th. Sloughing of gut about Murphy button; removed button through posterior wound.

| Number: | Age: | Sex: | Period of symptoms existing before operation: | Pathological condition: | Location of | Extent of disease: | Organs involved: | Operation performed: | Treatment of intestinal ends: | Immediate result of operation: |
|---------|-------|-----------|---|---------------------------------------|--|--|----------------------------|--|---|--------------------------------------|
| 1 | . ,60 | F. | six months | Adenocarcinoma | at lower mar- | two and one half | rectum and | Cripp's perineal | no attempt at sut- | |
| | 54 | | nine months | Adenocarcinoma | gm of rectum three inches above anus | mches three inches, en- tire circumference | anus rectum only | bone flap resection | end to end suture | day |
| 3 · · | 34 | F. | three months | Spindle cell sarcoma | just above sphincter | one and one half inches, two thirds circumference | rectum only | perineal | gut sutured to skin | recovery |
| ş | 50 | М. | one year | Adenocarcinoma | two inches above anus | two and one half | rectum and prostate | Kraske's resection | end to end suture | recovery, fistula |
| 5 | 45 | М. | four months | Adenocarcinoma | three quarters inch above anus | cumference one half inch, posterior wall | rectum only | perineal excision | no sutures, cauter- ized wound | recovery |
| 6 | 60 | М. | three months | Lypmhosarcoma | anus level of inter- nal sphincter | one inch, one third entire cir- cumference | | perineal excision | open wound | recovery |
| 7 | 65 | | eighteen months | Adenocarcinoma | one and one half inches above anus | tire circumference | | | denuded anus, and sutured gut to skin | |
| 8 | 22 | | one year | Adenocarcinoma | two inches above anus | about five inches, entire circumfer- ence | seminal vesi- | Kraske's resection | end to end suture | hstula |
| | 62 | | eight months | Adenocarcinoma | four inches above anus three inches | about four inches, entire circumfer- ence four inches, en- | | | end to end suture | fistula |
| 10 | 56 | F. | six months | Adenocarcinoma | above anus | tire circumference | rectum and | | Murphy button re- enforced | recovery, large fistula |
| 11 | 55 | F. | three months | Melanosarcoma | margin of anns | one and one half inches out on but- tock, one inch into rectum | rectum only | perineal excision | no attempt to bring gut down | recovery |
| 12 | 56 | F. | one year | Adenocarcinoma | two inches above anus | two and one half inches, entire cir- cumference | rectum and vaginal wall | perineovaginal | Mannsell method | recovery |
| 13 | 41 | M. | six months | Incipient carcinoma | two inches above anus | one half inches, | rectum enly | perineal excision | left open wound | recovery |
| 14 | 29 | F. | nghteen months | Adenocarcinoma | one inch above anus | seven inches, en- | rectum, uterus, | Kraske's resection | sacral anus | death |
| 15 | 57 | M. | one year | Adenocarcinoma | seven and one half inches above anus | tire circumference three inches, en- tire circumference | sigmoid | abdominal resec- tion | | recovery |
| 16 | 60 | F. | two years | Malignant papulloma | eight inches above anus | one half inch, an- terior wall | sigmoid only | local excision, cau- tery | ************* | recovery |
| 17 | 42 | M. | six months | Adenocarcinoma | three inches | two inches, entire | rectum only | bone flap resection | sacral anus | fecovery |
| 18 | 45 | | three years | Adenocarcinoma | two and one half inches above anus | circumference one half square inch, anterior wall | | local excision | sutured edges | recovery |
| 19 | 41 | M. | ? | Adenocarcinoma | eleven inches above anuus | three and one half inches, entire cir- cumference | | resection | Murphy button | death, sevent day |
| 20 | .,22 | М. | six months | Adenocarcinoma | four and one half inches above anus | terence | sigmoid | | end to end suture | |
| | | | two years | Adenocarcinoma | five and one half inches above anus two and one | four inches, entire circumference | sigmoid | bone flap resection | suture to anus | fistula |
| | | | one year | Adenocarcinoma Adenocarcinoma | half inches above anus three juckes | two inches, entire circumference two and one half | | perineal excision | end to end suture | recovery |
| | 50 | | | Adenocarcinoma | above anus | inches, entire cir- cumference | | ileorectostomy | · · · · · · · · · · · · · · · · · · · | |
| | | | the months | Adenocarcinoma | above anus | inches two and one half | der, and pel- vic wall | | denuded anus, and | |
| | 55 | | four months | Adenocarcinoma | above anus | inches, entire cir- cumference four inches, entire | rectum and | tion | sutured gut into it end to end suture | |
| | | | five years | Adenocaremona | above anus one and one | circumference four inches, entire | sigmond | bone flap amputa- | | recovery. |
| | 56 | | one years | Epithelioma | half incles above anus three and one | circumference | | tion | end to end suture | post, fistula |
| | 6 . | т. VI. | or ths | Adenocarcinoma | half inches | two and one halt | uterus | bone flap amputa- | | recovery |
| | | | ' - wars | Adenocarcinoma | half inches above anus | inches, entire cir- cumference has to six mish- entire circumfer- | rectum, Idad | tion colostomy perin- | autificial annis | recovery |
| | 6 | | · nenths | r el elled | t don thops the | two ami one od: | urethra | ed excision, pla- tic on bladder perineal excision | gut sutured in | recovery, |
| 12 | 31 | F. | o years | semplins | junction of | terior quadrant | sigmood and | hone that resection | anus cud to end suture | recovery, fistula |
| 13 | 41 | ŀ. | · ar . | ote L. t.A. | three inches above anus | inches, entire cir- cumference inches, entire cir- cumference | | horo that amputa- | Hochenegg's | recovery |
| . , | , | ŀ. | erne | · · · · · · · · · · · · · · · · · · · | and one | cumference | rectum | vaginal ponte, post- dramare | end to end suture | recovery, fistula |
| 11 | 58 | М. | wo years | Adenocarcinoma | above anus | inches, entire cir | reclum | perineal, six | gut sutured () margin of anus | recovery |
| | | | | | | cumference | | | | |

| Cause of death: | Furctional result: | Period of recurrence: | Site of recurrence | Result of recurrence. | Length of life following operation | State of health health operation: |
|---|--|-----------------------|-----------------------------|-----------------------------------|---|---|
| rebral embolism | | | | | | |
| | perfect | none | | | living still, fit- teen years, eleven | has never lost a day's work in fiftee years. |
| | perfect | none | | | teen years, ten | has gained severty pourels, perfect health. |
| | perfect | eleven months | in situ | leath | months seventeen months | very comfortable and happy for thirteen months, |
| | anal stricture | none | | •••••• | eleven years, two | well when last heard from, four years since. |
| | partial incontinence | six months | in situ and metas- ta-es | death | one year | poor. |
| ptic meningitis | | | | | | |
| | good | none in ten year- | | | ten years | Perfect up to last time hear! from in 1905. |
| | perfect | none | | | eight years | very good till death from pneumonia. |
| | partial incontinence | none | | | four years | Good up to four years, then lost sight of, |
| | incontinence | eight years | numerous metastases | death | eight years | very good. |
| | perfect | none | | | seven years | good, died of pneumonia. |
| | perfect | none | | | twelve years, tea | still living in good health. |
| •ck | | | | | | |
| | perfect | none | | | eleven years, two | still living, attends business daily. |
| • | perfect | none | | | three years | good up to time last heard from. |
| | incontinence perfect | | | | four weeks | died from peritonitis following colos- tomy. |
| akage and infec- | | | | | ino years | tomy, is probably well yet, in excellent health when last seen. |
| n | | | | | | |
| | perfect | none | | | two years | well up to time he returned to Russia |
| | perfect | none | | | twenty two months | address. |
| | artial incontinence | none | | | four years | well when last heard from. |
| | verfect | none | | | nine years | attended practice seven years. |
| | | tumor not removed | | | <i>f</i> | left hospital and gave no further report. |
| | ncontinence | four months | in situ, small | ten, ved nodule, | tive months | left hospital feeling well, never heard from since. |
| oughing four thes of gut | | | | | ************* | |
| • | artial incontinence | five years | r. bladder | death in nine | five years, nine months | worked four and one half years, felt well |
| • | normal | none | | | five years | able to attend house work comfortably |
| • | incontinence | none | | | ne year | die l'érom pre imonia |
| | ua ontinence | none | | | seven years | never strong, but able to keep book- |
| | slight stricture, partial incontinence | thirty two months | in situ | leath in three and one half years | three and one half years | good for two and one half years |
| | refect | none | | | eight years | still living and well. |
| | good | ? | | | two years | Jost sight of. |
| | good | ? | | | these mont's | never returned after having history |
| • | good | ? | | | one year | well when last seen one year atta- operation. |

November 24th. Patient did well, except for large posterior fistula

December 5th. Incised anus and rectum posteriorly up

to fistula.

December 20th. Wound healed down to within one inch of anus. Complete incontinence for liquid or soft stool. Patient left hospital. Wound almost entirely healed; conti-January 25, 1895.

nence improved. November 10, 1895. Parts healed, no recurrence. In-

continence improving.

Patient living and well four years after the operation; was lost sight of afterwards.

CASE XI.—May 15, 1895. Mrs. D., age fifty-five.

Family history, negative

Well until three months ago, when she began to have pain in the rectum; this gradually increased and was worse at night. Had a lump on side of rectum. Pain no worse at stool. Loss of blood at first, none now. Constant pro-trusion. On right posterior quadrant and extending out on the buttocks one and one half inches and up into the rectum one inch was a black, lobulated mass, which could be grasped by the fingers and moved on the tissues below; not painful to touch. Above the tumor the gut seemed perfectly healthy. Specimen taken for examination; pathological report, melanosarcoma.

May 20th. Operation. Perineal excision; wide excision of growth. No attempt made to preserve sphincter, or to

bring the gut down to anus; left the wound open. June 1st. Suppuration, but granulation going on nicely. June 15th. Wound filling up; no fæcal control.

August 13th. Wound healing; patient left hospital. November 10th. Wound healed. Cicatricial narrowing

November 10th. Would headed. Cleartical harrowing prevents solid faces escaping, but no voluntary control. November 25, 1908. Patient was lost sight of, but I heard to-day that she lived until 1903, nearly nine years after the operation, and died "from tumors all over her body." Evidently a delayed metastasis.

CASE XII.-March 10, 1895. Mrs. R., age fifty-six.

Father died of cancer.

Patient had dysentery ten years ago, otherwise personal Had been constipated for forty history was negative. years; stools hard and lumpy. About one year ago began years; stools hard and lumpy. About one year ago began to have flatulence and griping pains, no diarrhoea; then came passages of mucus with crises; had been passing blood and mucus several times a day for the past five months; had not lost much flesh. Frequent desire to go to stool, but unsatisfactory. Some skin tabs about the anus and hæmorrhoids. In the rectum there was a hard, nodular these these times the court flow in the second state. lar, ulcerating tumor, surrounding the gut, two inches from the anus, extending up two and one half inches;

movable and admitted finger easily.

March 15th. Operation. Vaginoperineal method. Circular incision in front of coccyx, tumor loosened from sacrum and all around to central raphe; cavity packed with gauze. Incision in postvaginal wall, opening peritonæum at vagina; cut off one inch above anus; anal end everted; proximal end of gut invaginated and sutured to anal end with two rows of chromic catgut sutures; large drainage tube inserted, and parts allowed to retract; peritonæum closed before gut was cut off; vaginal wound closed by sutures passing through muscular wall of gut, in order to

March 17th. Posterior packing removed; drainage tube

March 27th. Small posterior fistula, through which liquid fæces escaped; otherwise well. Patient left for home. November 15, 1895. Fistula healed in about three months,

January, 1904. Patient lived seven years, and died of pneumonia. Had no incontinence, and always felt well.

CASE XIII.—July 26, 1896. Mr. R. C., age forty-one. Family history, clear, except father, age seventy, had

Personal history was clear except for prolonged constipation of six months' standing, followed by dysentery, with mucous discharge. Had frequent desire to stool; slight mucous discharge, occasionally streaked with blood; flatulence and loss of appetite. Anus normal. Nodular stiff condition of the anterior wall of the rectum two and one half inches up; area involved, one by one and one half July 29th. Removed tumor by perineal excision; posterior wall left intact; split sphincter anteriorly and left it

open for drainage.

August 5th. Pathological report beginning malignant transformation in granular stricture. Convalescence satis-

August 15th. Left for home.

January 16, 1904. Saw patient and he is still well. February 1, 1908. Patient still well.

CASE XIV.—October 30, 1896. Miss E. T., age twenty-

Family and personal history, clear.
Patient had been constipated for years, but began eighteen months ago to have frequent desire to go to stool, with passages of mucus and blood; recently passed only blood. Had lost thirty pounds in weight; bowels moved many times a day, especially in the morning; severe shooting and burning pains in rectum. Anus normal. One inch up in the rectum was an immense friable, cauliflower growth, involving the entire circumference, extending above finger

November 2d. Operated, at patient's insistence, at her own home in the country and with what instruments a country village afforded. Kraske's method. Removed eight inches of rectum, uterus, and appendages; much blood and time lost through insufficient hæmostatics, etc.
Peritonæum packed; gut sutured in sacral wound.

November 3d. Patient died from shock eighteen hours

after operation.

CASE XV.-January 20, 1897. Mr. E. P. L., age fiftyseven.

Family history, clear.

Patient gave indistinct account of syphilitic sore twentyfive years ago, but no constitutional phenomena. past year he had suffered from alternating diarrhoea and constipation; passage of mucus occasionally tinged with blood; morning stool; practically no pain. Flatulence and indigestion. Bowels only move now by laxatives, and then like water. Anus normal. Rectum normal. Sigmoidoscope showed granular ulcerating mass seven and one half inches from the anus, almost completely occluding gut.

Preparations for operation, salines and bichloride irrigations, I in 6,000. Diet, milk, eggs, white meats, soups, rice,

and white bread for one week.

March 13. 1897. Incision outside left rectus. Tumor could not be brought out of wound; gut tied twice below tumor and cut off above rectosigmoidal junction. excised and colorectostomy performed, i. e., the upper end of the rectum was closed and the colon was carried down through a slit in the anterior wall of the rectum, and held there by strong ligatures passed through the four quadrants of the sigmoid, and carried out through the anus and wound around forceps, acting as a windlass. Abdominal wound closed with gauze drain down to point of invagination of sigmoid into rectum.

March 20th. Bowels moved, and for a time it seemed that a small fæcal fistula was present, but the odor from the fistulous tract was the only evidence of this. April 25th. Opening at junction with sigmoid so con-

tracted that bowel movements were difficult. Inserted a long pair of hysterectomy forceps, one blade in the rectum and one in the colon, to crush sæptum and enlarge the

May 1st. Pulled forceps away too soon; considerable hæmorrhage followed; controlled by packing.
October 1, 1902. Committee of the New York Medical

Association examined patient and reported him absolutely well.

February 27, 1908. No recurrence. Patient well. CASE XVI.-December 20, 1897. Mrs. W. S. A., age

Family and personal history, clear.
Patient formerly suffered from "itching piles," but these disappeared. Constipation increased for three years; desire to defæcate without result for two years; no pain; slight mucous discharge. Anus normal. Rectum slightly catarrhal; prolapse of the sigmoid into the rectum. Small, hard, nodular tumor in fold of prolapsing sigmoid, not to

be felt with finger, but base felt soft to forceps.

December 23d. Operated. Snared off tumor; cauterized base with pacquelin. Pathological report, papilloma with

malignant transformation.

Convalescence uninterrupted. Saw the patient three years later, no recurrence.

Case XVII.—January 1, 1898. J. D., age forty-two. Family and personal history, negative. Patient had been constipated for years. Began six months ago to have desire to go to stool without results; this increased. Began to pass mucus five months ago and blood two months ago. Lost very little flesh, but felt weak. Flatulence and loss of appetite. Bowels move now eight Flatulence and loss of appetite. Bowels move how eight or ten times a day; morning diarrhoæ; very little pain. Marked hæmorrhoids. Large, friable, cauliflowerlike mass filling rectum, beginning three inches up; movable; finger could be passed through it, and by pulling down the top of the tumor could be reached. Pathological report, adeno-

January 5th. Removed growth, Kraske's method; very difficult to get bowel down, finally had to suture it to sacral wound. Peritonæum sutured. Postanal wound left open

for drainage.

January 20th. Patient doing well, except for constant

discharge from sacral anus.

February 15th. Patient practically well except for incontinence, which annoyed him so much he begged to have inguinal anus made, such as a man in the next bed had.

Operated to-day, February 18th. Infection occurred and patient had peritonitis.

February 20th. Patient died last night.

I should never have done the second operation. This death should not be counted in mortality of extirpation.

CASE XVIII.—February 26, 1898. Mr. J. P., age forty-

For several years patient had noticed a small lump in the rectum. which had been steadily growing; caused no pain beyond an uncomfortable straining at stool; did not come outside. Passed no blood or mucus; had several stools a day, but only one that amounted to anything. Anus normal. In the rectum about two and one half inches up was a hard, nodular tumor, about the size of a horsechestnut, pedunculated, with very little induration at the base; was attached to the anterior wall, just to the left of the

March 1st. Operation. Sphincter split open; posterior parts brought to one side; tumor resected, with mucous membrane, for about one inch in diameter about its base; edges brought together and sutured. Posterior wound left open for drainage. The sutures did not hold perfectly, leaving a granulating spot. He left the city in about four

weeks, felling well.
Pathological report, adenocarcinoma.

His physician reported him well two years later.

CASE XIX.-July 27, 1898. Mr. J. A. P., age forty-one. Pain in left side, alternating diarrhoea and constipation,

occasionally blood.

Cylindrical tumor in left iliac fossa, not particularly hard, increased in size during periods of constipation, movable, and appeared about four inches long. Patient had atropic catarrh of the rectum; one small granulating ulcer on left posterior aspect which appeared to have formed re-cently. Sphincter contracted. Sigmoidoscope passed for eleven inches and was arrested by stricture or tortuosity (not able to make out which on account of rigid condition of patient)

July 30th. Operated. Tumor in the left inguinal fossa proved to be cancer of the sigmoid; resected; Murphy

button, removed seven inches

August 5th. Peritonitis developed and patient died to-Sloughing and leakage around button shown by autopsy

CASE XX.—September 26, 1898. Mr. H. D., age twenty-

Family history, negative.

When twelve or thirteen years of age patient noticed a little blood in stool; no pain at that time. Six months ago had an attack of griping pain all over the abdomen, but more particularly over the left side. Diarrhoa began about that time; it increased until three months ago, when he was admitted to Roosevelt Hospital, and there treated locally for a time; he appeared to improve, and was discharged. All the symptoms recurred; he passed blood and mucus with stools. Anus normal. Four and one half inches up the rectum a large nodular mass was movable and without pain; the top could not be reached. Pathological report, adenocarcinoma.

October 1st. Bone flap operation. Resection of about

seven inches; end to end union. Bone flap sutured in posi-tion. Not much hæmorrhage. Peritoneal wound packed. Patient made good recovery from operation.

October 5th. Packing removed.
October 8th. Bowels moved. Posterior fistula, with in-

fection. Otherwise no complications

January 17, 1899. After prolonged infection, and some stricture at point of union, the patient finally recovered. Left the hospital feeling comparatively well. Heard from two years later, after he returned to Russia; he was then feeling well. No further report.

CASE XXI.—November 7, 1898. Mrs. H., age thirty-one.

Family history: Tuberculosis. Personal history: Typhoid fever some fifteen years ago, followed by stomach and bowel trouble. In past two or three years had had hæmorrhage from bowels and stomach. Was constipated and passed mucus and blood at stool; no pain with passage, no exhaustion afterwards. Physical examination negative. Anus normal. Hard nodular growth at junction of rectum with sigmoid arrested speculum.

November 12th. Bone flap operation. Adhesions of the sigmoid to broad ligament, difficulty in bringing it down. Did resection of five inches. Circulation in gut good, tied middle and right lateral sacral arteries; closed peritoneal cavity by sutures. End to end union.

November 15th. Patient progressing well. Temperature,

101° F.; pulse, 110. Pathological report, adenocarcinoma. November 21st. Bowels moved, so far no leakage.

November 30th. Progress satisfactory, slight leakage when stools are thin, otherwise none

December 20th. Leakage stopped; fistula persisted, four inches deep. Patient left for home.

January, 1900. Reported herself well. Not heard from

CASE XXII.-March 28, 1899. Mr. W. F. D., age sixty. Family history, negative.

Personal history: Had had fair health; three years ago noticed protrusion at stool, with soreness which was relieved by salve. Twelve months since noticed frequent desire to stool, preceded by wind; stool small; morning diarrhea. For several weeks had had blood before stool. No tympanites. Stricture two and one half inches up the rectum, soft, and friable, bled easily on touch. Some induration in left inguinal fossa. Odor not distinctive.

April 2d. Adenocarcinoma removed by perineal method; gut brought down and sutured to anus; removed four and

April 15th. Patient made uneventful recovery, although the union was not primary, he left the hospital with granulating area in anus

March, 1903. Physician reported patient in fine condi-

February, 1908. No reply to letter. His physician had

died in the meantime, so I cannot trace him. CASE XXIII.-April 7, 1899. Dr. D. O. K. age fifty-

Family and personal history clear. Not constipated except when taking medicines. About ten years ago, after an attack of dysentery (?), began to have morning diarrhœa. Every morning about six, regardless of time of retiring, was called to the closet and had two or three mucus, watery movements; after this had a fairly comfortable day. Large nodular tumor, barely admitting finger, began three inches up and extended about two and one half inches. By dragging it down could reach healthy tissue above. Adenocarcinoma.

April 22d. Bone flap operation. Tumor removed. Peritonæum opened and closed before entering the gut; end to end suture; very little hæmorrhage; sutured flap back in position. Posterior drainage.

April 15th. Patient doing well; removed drainage. April 20th. Some infection and leakage from point of

junction, but nothing alarming April 30th. Sacral cavity closing down and fistula closing. May 15th. Patient left for home, well, except for small

November, 1904. Patient remained well. April 30, 1908. Reported that he is well.

CASE XXIV.-September 12, 1899. Mr. H. G., age thirty-

Family history, negative.

Personal history: Patient had never been ill except from the diseases of childhood. Sex months age while on a

drinking bout, he passed blood from the rectum, subsequently blood passed almost every day; constant diarrhœa; scarcely any pain, but a feeling of malaise and low spirited. Three weeks ago had a severe attack of colic, attended by vomiting; lasted about five days, followed by headache. loss of appetite, constipation, and discharge of mucus streaked with blood. Anus normal. Nothing could be felt in the rectum with the finger. Kelly's proctoscope showed an obstruction eight inches above the anus. Patient refused operation.

April 4, 1900. Patient readmitted, so much distended by acute intestinal obstruction that an examination could not

be made. Made right artificial anus.

April 26th. Patient recuperated rapidly after the artificial opening, but was losing flesh, owing to a continued fluid passage. Opened the abdomen again and found a large cancer of the sigmoid, firmly adherent to the brim of the pelvis and to the bladder. Conditions considered inoperable. The ileum was brought down and inserted into the rectum; and the artificial anus closed. The patient made a good recovery and improved rapidly in strength, going home from the hospital in about three weeks after opera-

We have no further report of him, but I suppose he died in a short time, owing to the enormous growth.

CASE XXV.-December 4, 1899. Mr. T. H., age sixty-

Family history, negative. Patient had always been well until three months ago, when he began to have pain in the rectum, especially when the bowels moved; was constipated; passed blood and mucus several times a day, but fæces only once. Had frequent urination. Anus normal. Two inches above the margin of the anus a large, boggy, bulging mass, ulcerating and involving the entire circumference of the gut was found, extending up two and one half inches. Pathological report, adenocarcinoma.

December 11th. Operated. Bone flap method. Mucous membrane dissected from the lower segment of the rectum; the sigmoid was dragged down through the anus and sutured to the skin margin; posterior drainage. Four and

one half inches removed.

December 15th. No complications.

January 12, 1900. Patient left the hospital, with a small posterior fistula.

April 17th. Patient returned. A small nodular recurrence on the edge of wound. Removed under general Removed under general anæsthetic. Patient left the hospital one week later well, and has

never been heard from since. CASE XXVI.—October 4, 1900. Mr. T. McM., age forty-

Family history, very good.
Personal history: Formerly drank considerably and smoked excessively, but for three years past has done neither. Bowels had always been regular. For some time had had pain in bowels before movement. Did not notice what passed after these attacks. Constipation began last June; took laxatives; desire to stool, but without success.

Morning diarrhoa. Could just feel hard nodular mass high up in rectum.

Diagnosis: Cancer at junction of rectum with sigmoid. October 11th. Bone flap operation. Bowel tore across before peritonæum was closed. Superior hæmorrhoidal artery torn in loosening attachments from sacrum; unusual hæmorrhage. Notwithstanding this, patient returned to room in fair condition, and five hours later had a pulse rate

October 12th. The patient did well until 12 m. to-day, when he began to get restless; his temperature rose to 110° F., and he died about 11 p. m. Autopsy showed gangrene of lower six inches of sigmoid, which had been brought down; evidently due to tearing off of the inferior mesenteric artery.

CASE XXVII.—April 12, 1900. Mr. W. W., age fifty-

Family history, negative.
Patient had had hæmorrhoids for twenty years, which bleed at stool. Five years ago noticed a mass come down at stool; it was very red. At about the same time noticed a profuse discharge of mucus and loss in weight. week- ago had a piece of the mass removed, about the size of a small apple, since which time the discharge had become

flatulence for the past six months; had always been constipated. Anus normal. One and one half inches up the rectum was a hard ulcerating mass, with one polypoid excrescence, entirely surrounding the rectum, adherent to the prostate, but movable posteriorily. Section showed adenocarcinoma.

April 17th. Bone flap operation. Removed six inches of the rectum and both lobes of the prostate; mucous membrane dissected off from sphincter and upper end of the gut brought through and sutured to cut margin of anus.

April 21st. Patient had no complications, except difficulty in urination. Small posterior fistula at sight of opera-

tion. Prostate removed not carcinomatous.

May 1st. Patient doing well; some cystitis and posterior

fistula.

May 23d. Under general anæsthetic posterior fistula was split open into anus, as the latter was somewhat contracted; anterior wall of rectum was found to have united perfectly; posterior wall was broken down, leaving a large cavity between the rectum and sacrum, in which a mass of hard fæces had collected.

June 30th. Under packing and local irrigation the parts

have healed; patient had almost complete continence and

was well, with the exception of a mild cystitis.

January 10, 1901. Patient had trouble with bladder for

six months, but this is also relieved.

Remained well and visited me from time to time until November, 1905, when he began to have great trouble with his bladder. Cystoscopy revealed much inflammation—probably recurrence (?) in the bladder; this condition continued to grow worse until it caused his death in January, 1907, nearly seven years after the extirpation.

· CASE XXVIII.-March 15, 1900. Mrs. B. P., age fortytwo.

Family history, negative.

Began to menstruate at thirteen; she had always been regular, but with much pain. Had a child born nine years ago without much difficulty; three years ago a second child was born; at this labor she was badly torn, since which time she had suffered from pain in her back and severe dragging sensation in abdomen. She had suffered from chronic constipation. One year ago the left ovary was removed; five months ago she was operated upon for hamorrhoids, obtaining very little relief; since that time she had suffered with increased constipation, with frequent desire to go to stool, without effect. Anus normal. Three and one half inches up the rectum was a large, hard, nodular, ulcerating growth. Pathological report: On rectal specimen, adenocarcinoma; on section from cervix, epithelioma

November 26th. Laparotomy, removing remaining tube. ovary, and uterus. The gut was loosened by the mesosigmoid and mesorectum being cut, and a large gauze pad inwound closed. Patient then put in lithotomy position and the rectum and tumor excised, by vaginal method. End to end suture; large rectal tube introduced; an opening made between the rectum and coccyx into retrorectal space and drainage tube introduced; peritoneal floor closed through vagina.

April 1st. Vaginal packing removed; seemed to be doing well. There had been some fæcal movement through the rectal tube; slight discharge from posterior drainage.

April 10th. Barring slight posterior fistula, patient was

April 10th. Sarring signt posterior istula, patient was doing very well. Anterior sutures had all held.
April 12th. Slight discharge from posterior fistula.
April 19th. Fistula remained; no more discharge. Pa-

tient left for home to-day. April I, 1902. Patient reported herself well; continence

June 1, 1905. Saw patient's physician, who reported her

well. No later news. CASE XXIX.—February 28, 1900. Mr. L. M. W., age

Family history, negative.
Patient stated that he had suffered from stricture of the rectum since infancy. Six years ago had inflammation of the bladder and prostate. A one months ago was operated upon for hamorrhoids; before this had bloody stools, with

Present symptoms: Diarrhoea; loss of blood and mucus; pain in rectum and back. Anus irritated and inflamed. One and one half inches within the margin of the rectum was an ulcerating, inducated rodule, extending upward two and one half inches, at which point the calibre was almost closed and the induration was very great.

March 1st. Extirpation, bone flap method. Removed lower six inches of the rectum; could not get bowel down low enough to restore normal outlet; made sacral anus. Peritonæum stripped off, but not opened.

March 1st. Patient had considerable outlined to the patient had considerable outlined.

March 4th. Patient had considerable oozing, otherwise

doing well.

March 10th. Continued to do well; some little infection below artificial anus, but it was superficial.

March 21st. Wound entirely healed; fæcal discharge from rectum. Patient left for home. Pathological report, adenocarcinoma.

Patient died the following year from pneumonia; no

recurrence.

CASE XXX.-January 9, 1900. Mr. R. N. G., age thirty-

Family and personal history were negative. Patient had had good health until two years ago, when he noticed blood in stool; it had gradually increased, with sharp pain in rectum. Painful urination. Anus surrounded with ulcerating skin tabs, with a granular mass protruding in the centre. Patient unable to bear an examination; in a very low condition

January 11th. Etherized and examined; found a large carcinomatous mass following up the rectum, immovable, involving the prostate, wall of the bladder, and all surrounding organs. Did inguinal colostomy, Maydl method.

Cancer considered inoperable.

After refusing to operate further, I February 1st. yielded to this patient's importunities and undertook to re move his rectum. Bone flap method employed. Removed ten and one half inches of the rectum, entire prostate, prostatic urethra, and part of the posterior wall of the bladder between the two ureters. Sutured the bladder together; as the patient was too weak to finish the operation, parts were packed and saline infusion made, and he was

February 20th. Patient improved so much that we undertook to close up the bladder; edges freshened and brought well together; membranous urethra brought back, and sutured into the neck of the bladder, a large rubber eatheter being passed through from the meatus to the bladder and

sutured. Parts brought well together.

March 18th. A fair result had been obtained, while the patient had a perineal fistula, losing considerable urine; nevertheless, he passed most of the urine from the meature. Tumor showed no evidence of recurrence. He left the hospital to-day, a comparatively well man. He was taking 32 grains of morphine when he entered, and none when

April, 1907. This patient lived over seven years, supporting his family by bookkeeping, and died from Bright's disease in February, 1907. His doctor reports there was

no recurrence

CASE XXXI.—September 21, 1899. Mrs. M. N., age sixty.

Family history was negative.

Patient had always been strong and healthy. About three months ago she began to have a throbbing, heavy, aching sensation at the lower end of the rectum; a small swelling soon appeared, and this extended toward the buttocks ever since. Had always been constipated. Constant pain and flatulence. Moisture, but no blood or pus and no protrusion. Irregular swelling on the left posterior quadrant of the anus; skin moved over it; seemed to involve the sphincter and deeper tissues; extended up into the rectum about one inch; mucous membrane and mucocutaneous membrane over the tumor was black. Melanosarcoma.

September 24th. Perineal excision; removed three inches of the gut, and sutured end in anus. The wound, when extended out, into the huttonke, was collegated.

which extended out into the buttocks, was only partially

closed, and drained.

September 30th. Gut united primarily; wound in the buttocks so healthy there was scarcely a drop of pus. October 10th. Bowels moved regularly; no pain; but-

tock wound nearly healed.
October 1, 1900. Patient still perfectly well.

October I, 1900. Patient still perfectly well.
April 2, 1902. Patient still perfectly well.
April, 1906. Letter from patient's daughter states she
died from recurrence in the abdomen. September, 1903.

CASE XXXII.-May 7, 1900. Mrs. L. M. B., age thirty-

Family history, clear

Constipated since she had inflammation of the bowels,

fifteen years ago. Stools had depression in them. bowels were full had severe pain in the left iliac and hypogastric region; this had been increasing recently. Diffi-culty in urination. Hard, slightly nodular tumor at junc-tion of rectum with sigmoid, attached to sacrum and constricting the calibre to the size of a large lead pencil. Scirrhous carcinoma

May 12th. Operation; bone flap method. Had considerable hæmorrhage from superior hæmorrhoidal artery just above the tumor; had to take out about four inches of the sigmoid above growth before sufficient circulation was found to justify suturing. Hæmorrhage controlled by clamp on superior hæmorrhoidal artery (left on three days).

End to end suture; closed peritonæum.

May 20th. Patient doing well; considerable discharge and slight fæcal leakage posteriorly.

June 1st. Convalescence uninterrupted.
July 5th. Patient left hospital, with small fistulous tract.
Fæcal leakage gone. October 2d. Everything healed; very slight constriction

at suture.

April 10, 1901. Still well; constriction practically gone, January 10, 1908. No recurrence; quite well.

CASE XXXIII.—April 2, 1900. Mrs. H., age forty-four. Mother died of cancer; father of tuberculosis.

Patient had always been constipated; was operated upon for hamorrhoids in 1891, said to have had stricture. Since 1894 had a dull, aching pain in the back, not influenced by stool. Bled only once in a while; discharged membranous mucus sometimes tinged with blood. Discharge had never mucus sometimes tinged with blood. Bischarge had involuntary, ceased since operation in 1891, purulent and involuntary. Continence for the past year also grew less and less. No external manifestations. About three inches up a hard, leathery contracture, movable but not nodular, was felt.
No specific history. Pathological report, scirrhous cancer.
April, 1900. The detailed history of this case was lost in

the hospital fire. A bone flap operation was done and about seven inches of gut removed. Hochenegg invagination method. Was in the hospital about five weeks; had a small

fistula, but recovered in good time.

Remained well over two years, and was then lost sight of. CASE XXXIV .- May 27, 1900. Mrs. B. S., age thirty-five.

Family history was good.

Personal history: At twelve years of age began to have Personal history: At twelve years of age began to have lymphatic enlargements. Recently complained of pain in rectum and griping pain in bowels. Pain in rectum first, then in abdomen. Passed mucus since one year ago, with after feeling of exhaustion. Mucus discharge sometimes every day, sometimes several days apart. May 20th. Nodular growth surrounding rectum, friable, admitted index finger. Began two and one half inches, extended one and one half inches, very movable. Pathological records admorational.

report, adenocarcinoma.

Tumor removed; vaginal route; very easy, June 4th. but did not clear sacral space so satisfactorily as bone flap. Postanal drainage.

June 7th. Patient did well, but had temperature of 102° F., indicating infection. Packing removed, a large amount of bloody serum discharged, drainage tube

Temperature reduced to 100.5° F. Patient June 8th. very tender about rectum and vagina; free purulent

discharge Temperature 99.2° No complications. June 12th.

Bowels moved yesterday; leakage from posterior wound.

June 20th. Patient walked about the floor to facilitate drainage; no change in condition.

July 1st. Leakage less; fistulous tract smaller. August 1st. Patient left hospital with small fæcal fistula. Moved and left no address.

CASE XXXV.-January 25, 1901. Mr. C. N., age fifty-

Family history was negative.

Personal history: Began to notice pain in rectum two years ago; diarrhea soon developed, and grew worse. Patient had had no treatment. Much flatulence and indigesgestion; had lost very little flesh; color good. Anus normal. Three inches above the margin of the anus there was a control of the color and extended the color and hard, friable tumor, entirely surrounding the gut, and excluding the passage so that one could only introduce a small probe. Under anæsthetic the finger was pushed through, and the upper limits of the tumor were found at about four and one half inches. The tumor was movable except at a level with the prostate, where it seemed to be attached. Pathological report, adenocarcinoma. Salines and

peroxide irrigations ordered.

January 30th. Operated. Perineal excision; six inches of gut removed. Attachment to prostate was only inflammatory, and this organ did not seem involved in the growth.
Peritonæum sewed up, wide posterior drainage. Musculature of rectum sutured about gut. Mucous membrane attached to skin around the margin of anus. Rectum held back in sacral cavity by perisacral suture; very little

February 5th. Primary union, except in the posterior commisure, where packing was introduced; very little

discharge.

February 10th. Two or three of the sutures around the repruary forn. Iwo or three of the shires around the margin of the anus had given away, leaving some granulation. Gut not retracted; perisacral suture removed.

February 25th. Patient discharged; all parts healed except a little granulation at posterior commisure.

Attended clinic for several months, then disappeared, and

has not been heard from since.

(To be continued.)

JAUNDICE DUE TO DISEASE OF THE BILIARY AND PANCREAS PASSAGES.

With Report of a Case of Cancer of the Pancreas and Liver in Which There Was an Absence of Hydro-chloric Acid and Pepsin from the Stomach Contents.*

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Jaundice, like albuminuria, is only a symptom. However, the correct interpretation of the peculiarity of this symptom frequently enables one to make a correct diagnosis, and as it is in obstructive jaundice that difficulty in diagnosis is most frequent, I wish to call attention more particularly to the two most common causes of this condition, namely, gall-

stones and pancreatic disease.

The association of diseases of the pancreas with gallstones has been pointed out by a number of observers, and in order that we may better understand the various manifestations of the subject under consideration, let us take a short review of the anatomy of the biliary passages and structures in juxtaposi-tion thereto. The right and left bile ducts from the liver unite to form the hepatic duct which in turn is joined by the cystic duct to form the common bile duct. The common duct may be divided into four parts, supraduodenal, retroduodenal, pancreatic, and intraparietal. According to Helly, the pancreatic portion of the duct passes through the tissue of the head of the pancreas in about sixty-two per cent. of individuals, and it passes in a groove behind the gland in the remaining thirty-eight per cent. Therefore in diseases involving the head of the pancreas, the common duct will be pressed upon in the majority of instances. The termination of the duct is also of particular interest on account of its ending in common with the duct of Wirsung in the ampulla of Vater. This arrangement of the termination of the pancreatic duct forms the one weak point in the anatomy of the pancreas. The accessory duct of the pancreas, or duct of Santorini, is a variable structure and opens into the duodenum at from 0.75 to s inch above the opening of the diverticulum of Vater. The ducts of Santorini and Wirsung usually (ninety per cent., Opie) communicate in the substance of the gland, but the former is impervious in $(A_{i,j})_{i,j} = \{(A_{i,j})_{i,j} \in A_{i,j} \text{ and } (A_{i,j})_{i,j} \in P_{i,j} \cap P_{i,j} \cap P_{i,j} = 0\} \quad \text{for } i \in M_{i,j}$

about one fourth of the cases. The triangular area between the duct of Santorini above the duct of Wirsung below and the duodenum externally is termed the triangle of pancreatic inflammation. Mr. Snyder Philips believes that catarrhal jaundice, especially the epidemic form, is probably due to pancreatic disturbance, and is similar to such inflamma-

tion of the parotid gland as mumps. The most frequent cause of obstructive jaundice is stone or stones in the common duct. The obstruction may be complete or partial. It is usually partial, although the block may be complete at first, as changes soon take place in the wall of the duct that permit of the escape of bile into the intestine, and the jaundice which was gradually getting deeper now shows a variation in depth of tinge, and a change of color may be noted between morning and evening. A ball valve effect may be produced by the intermittent blocking of the duct by the stone, as pointed out by Finger. This will show itself by the change in depth of the jaundice and the appearance intermittently of bile in the fæces, etc. According to Moynihan, complete obstruction of the common duct due to stone rarely persists longer than three months. Jaundice is always present in chronic obstruction of the common duct, whether the obstruction is due to stone or otherwise. Jaundice, however, as a symptom of gallstones in general is regarded as rare by many writers. Murphy states that jaundice is present in only ten per cent. of cases, whereas Deaver (American Journal of the Medical Sciences, January, 1908) says that jaundice is, or has been, present in about three fourths or, to be exact, 69.9 per cent. of his cases of gallstones. Jaundice first shows itself in the sclera of the eye, or it may be present in the skin of the abdomen and not noticeable in the parts exposed to the sun. A painstaking history and careful examination is sometimes necessary to show that jaundice has been or is present. The writer has on several occasions elicited a history of jaundice from patients after making a diagnosis of gallstones.

If a case of common duct obstruction due to stone is kept under observation for a few weeks there will usually be found the symptoms of infection. The liver is nearly always enlarged in the early stages of chronic obstruction of the common bile duct. The gallbladder is not palpable in the majority of instances as it is unable to distend on account of its thickened walls and adhesions due to repeated attacks of cholecystitis. Courvoisier pointed out that when persisting jaundice was associated with distention of the gallbladder, the cause was in over ninety per cent. of cases an obstruction of the common duct from without. Courvoisier, therefore, gave us this law that bears his name: "In cases of chronic jaundice due to blockage of the common duct a contraction of the gallbladder signifies that the obstruction is due to stone; a dilatation of the gallbladder, that the obstruction is due to causes

other than stones."

Several cases of intermittent tumor formation due to alternate distention and emptying of the gallbladder have been recorded. This condition was caused by the ball valve effect of stone in the common duct. A case of this kind came under my observation a short time ago in the person of a physician's father in law.

Moynihan says, of all the conditions which simulate calculous obstruction of the common duct, probably none is so difficult to distinguish as chronic pancreatitis. The frequency of the association of the two diseases is well recognized and we are indebted to Reidel, who first called attention to this fact. Mayo Robson says that pancreatitis was present in sixty per cent. of his cases of stone in the common duct. The Mayos (Journal of the American Medical Association, April 11, 1905) found pancreatitis in 18.6 per cent, of their cases of common duct obstruction due to stone as against 4.45 per cent. when the gallbladder only was involved. The Mayos do not dispute the correctness of Mayo Robson's observation, and attribute his higher percentage to a more careful analysis of the fæces and urine. Mayos also state that eighty-one per cent. of the cases of pancreatic disease were due to or accompanied by gallstones. In about eightyfive per cent. of the cases of pancreatitis the head of the gland showed evidence of inflammation.

If the chronic pancreatitis be due to gallstones, there will usually be a previous history of the symptoms of this latter disease, associated with tenderness in the epigastrium and some fullness above the umbilicus; loss of flesh soon becomes marked, and the pain usually passes from the epigastrium around to the left side, to the scapula or left kidney region. Jaundice which is present deepens as the head of the gland enlarges, and increases the pressure on the common duct. Dyspepsia symptoms are marked. If the pancreatitis is due to other causes than gallstones, as infection from a duodenal catarrh, ulcer of the duodenum, infection of influenza, typhoid, etc., the onset may be more gradual and the gallbladder becoming distended may give rise to a suspicion of the presence of malignant disease of the head of the pancreas, which the rapid loss of flesh tends to confirm. In a patient with a thin abdominal wall and in whom pain and tenderness do not cause rigidity of the recti muscles, one may be able to palpate the swollen pancreas.

Jaundice is not present in all cases of disease of the head of the pancreas, as it will be remembered that the common duct passes behind the pancreas in thirty-eight per cent. of all cases. The stools are frequently bulky, offensive, pale in color, greasy, and of acid reaction. Constipation and flatulency may be present at the beginning. A chemical and microscopical examination of the fæces and urine is of considerable value in the diagnosis of disease of this organ. In pancreatic disease the fat in the fæces is usually greatly increased, with an excess of the neutral fat, in contradistinction to an increase in the fatty acids when the biliary passages only are involved. The detection of a large amount of undigested muscle fibre with nuclei intact in the fæces, is believed by Schmidt and others to be of value in establishing the presence of pancreatic disease when gastric and other diseases which affect the digestion of meat are excluded. A prompt and positive reaction following Sahli's test is also thought to be of some significance in showing that the pancreas is performing its function. Cammidge's "pancreatic" recation in the urine has been of considerable value in diagnosticating pancreatic disease in the hands of those skilled in its performance. Opie found a "fat splitting" ferment in the urine of one case of hæmorrhagic pancreatitis. Other tests for determining the functional activity of the pancreas have also been brought forward.

Cancer is the most common new growth of the pancreas, and it occurs in the head of the glands in sixty-two per cent. of cases (Robson and Cammidge). The onset is gradual and usually painless. There is a general failure of health, and when jaundice supervenes it becomes absolute and unvarying. The jaundice may become almost black. Movnihan says that the jaundice of malignant disease is more of a greenish hue in contrast to the golden yellow color of nonmalignancy. The jaundice was of a greenish tinge in two cases of cancer of the head of the pancreas that came under my observation recently. The gallbladder is nearly always distended, and may attain a large size in those cases. The liver also enlarges from biliary stasis, but no nodules are to be felt as is usually the case in cancer of this organ. In some instances the enlarged, hard, nodular pancreas may be palpable. The clay colored stool, absence of bile from the fæces, with an increase in the neutral fats, etc., also hold good here. According to Robson and Cammidge the improved "pancreatic" reaction is negative in seventy-five per cent, of those cases, but it is more or less marked in the remaining twenty-five per cent.

Cancer of the pancreas not infrequently follows cancer in other organs, and pancreatic symptoms may be the first to suggest the presence of the disease. Other diseases that must be distinguished from cancer of the pancreas are cancer of the liver and cancer of the common or hepatic ducts. Jaundice may also be produced occasionally by adhesions in gastric or duodenal ulcer, enlarged glands pressing upon the ducts, aneurysm of the hepatic artery, loose kidney, gastroptosis, etc. In these latter conditions jaundice is usually not absolute, except in cancer of the common or hepatic duct; the pancreatic symptoms being absent. Jaundice is present in about half the cases of cancer of the liver. Analysis of the gastric contents following an Ewald test breakfast may be of value in making a diagnosis, as it has been shown by Moore, Alexander, Kelly, Roaf, and others that free hydrochloric acid may be diminished or absent in cancer situated in other parts of the body, such as the breast, uterus, tongue, etc. I found an absence of both free hydrochloric acid and pepsin in a patient with cancer of the pancreas and liver.

CASE.—P. F., male; age fifty-four; stone mason; born in Ireland; seen in consultation with Dr. R. T. M. Donnelly, Philadelphia, January 23, 1908.

Previous history and family history were negative.

Present condition began in September, 1907, when the patient complained of gastric distress, mostly after eating. His appetite was fair, but even after eating ever so little he would have a sensation of fullness and weight in the stomach, belching, and enlargement of the abdomen. The symptoms were gradually becoming worse, and he consymptoms were gradually becoming worse, and he consulted Dr. Donnelly on November 13, 1907. At that time the liver was not appreciably enlarged. There was no tenderness over the stomach, liver, or gallbladder. He was losing weight and strength. On December 12th a pleurisy losing weight and strength. On December 12th a pieurisy developed on the left side posteriorly, confining him to bed for five days. Jaundice appeared in the conjunctiva about the middle of December. This gradually became deeper and was unvarying. There was a tendency to diarrheea the first few months of his illness, but the bowels later became costive; the stools were hard and "puttylike." and a movement was had only by taking medicine. On January 8, 1908. he had cramplike pains in the right upper abdomen, lasting

about eighteen hours, followed by a soreness for three or

about eighteen hours, followed by a soreness for three or four days. When I first saw him he was complaining of constant severe pain in the epigastrium. There had not been any vomiting. He had been losing considerable weight since the early part of December, 1907.

Physical examination: A large, strongly built, fleshy man; weight probably two hundred pounds. Jaundice was present in the skin and conjunctiva. The color of the former was a dark, dusky appearance, while the latter was of a greenish hue. The tongue was thick and coated; teeth were in good condition. Breathing was accelerated. teeth were in good condition. Breathing was accelerated, due to abdominal distention with gas. Temperature and pulse were normal. Examination of lungs and heart were Abdomen was considerably distended; abdominegative. Abdomen was considerably distended; abdominal wall thick; some free fluid was present in the flanks. Liver dullness began at the fourth interspace in the right nipple line, and its lower border, which was sharp and somewhat harder than normal, was palpable just above the umbilicus, but no nodules could be felt. There was no pain or tenderness in the region of the galbladder, nor was the galfbladder palpable. A thick abdominal wall made palpation difficult. The outline of the stomach was not interested in the palpable. Physical examination of the stomach was not increased it injuries or spleen not palpable. Physical examinacreased; kidneys or spleen not palpable. Physical examination was otherwise negative.

The stools were clay colored, very offensive, of medium consistency, and not very greasy. Bile was absent; no occult blood. The urine contained bile; no sugar or

Gastric contents: One hundred cubic centimetres of contents were aspirated one hour after an Ewald test breakfast, and showed an absence of free hydrochloric acid; pepsin was also absent (Metts's method); no occult blood; no lactic acid or Oppler-Boas bacilli. Total acidity, 0.10.

Blood: Hæmoglobin, 90 per cent.; red blood corpuscles, 4,800,000; white blood cells, 7,400.
Diagnosis: Cancer of the liver, with complete obstruction of the common or hepatic duct. From the character of the stools I thought that the pancreas also was probably involved.

The great distention of the abdomen was embarrassing to the lungs and heart, and the patient died suddenly on

January 31, 1908.

Autopsy: Moderate amount of free fluid was found in Autopsy: Moderate amount of tree fluid was found in the abdomen. There was a cancer of the pancreas and liver with involvement of right free border of lesser omentum. The glands along the common duct formed a chain of hard nodules. The stomach and intestines were normal. There were no gallstones. Gallbladder was distended, but healthy in appearance. The primary growth was in the pancreas

The pleurisy in this case was due to involvement of the diaphragm, and the attacks of cramplike pain resembling those of bilary colic were probably due to pressure from without upon the common duct, as attacks of this kind are occasionally met with when the common duct is pressed

upon from without.

1034 CHESTNUT STREET.

A DERMATITIS DUE TO THE IRRITATING EFFECT OF METOL.

BY NATHAN T. BEERS, M. D.,

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A careful search through the literature of medicine brings to light the report of but one case of this affection of the skin, while the textbooks make no mention of it in any way. It seems rather surprising that the affection has escaped notice at the hands of the profession, since among professional, and even amateur photographers, metol poisoning, as the disease is commonly known, has been recognized and thoroughly dreaded for many years.

In the British Medical Journal of December 31, 1904, Dr. Arthur Storrs reports the case of a man of

fifty years, a photographer, whom he found in bed suffering from a general erythematous eruption, his hands swollen and erysipelatous in appearance. While the rash was general, it was only slightly in evidence on the patient's legs, and faded off into a mild erythema on his feet. The cervical glands on both sides were enlarged. Temperature, 104° F. Patient suffered greatly from burning and itching. Desquamation soon started, but it was six weeks before the last evidences of the disorder disappeared.

Metol, or monomethylparamidophenolsulphate, is a synthetic compound which comes to us in the form of a white, crystalline powder. Its use is limited practically to photography, where it is employed in developers as a reducing agent, either alone or in combination with other agents, such as pyrogallic acid and hydrochinon. Its high standing in the esteem of the photographer is due to its rapidity of action. It is the active agent in the majority of ready mixed developers and developing powders sold to amateur photographers to-day.

Previous to the introduction of the snapshot camera and the simplification of the processes used in photography, the physician was seldom called upon to consider the effects produced upon the skin through contact with solutions containing metol. But to-day, when even the children compete with their elders for photographic honors, we are constantly called upon to observe and to treat certain conditions of the skin, usually of the hands, which may be traced readily to metol as the cause.

Many professional photographers, whose hands are constantly bathed in solutions of metol and who suffer no ill effects therefrom, are wont to scoff at the suggestion of poisoning and allege for themselves a personal immunity. They believe that individual susceptibility or idiosyncrasy is primarily responsible. While the professional photographer's exposure to the action of the chemical is immensely greater than the amateur's, we must not lose sight of the fact that the skin of his hands is much tougher and more resistant, and that his hands are almost constantly in water, thereby diluting the metol taken into the skin. Again, some of the worst cases seen by the writer have been in "old hands" who have always considered themselves immune. In order to further disprove this theory of immunity the writer has applied a normal solution of metol to the soft skin of the upper forearms of two professionals who considered themselves immune. Within forty-eight hours both gentlemen complained of burning and itching and exhibited circumscribed erythematous areas at the site of application. In one case the dermatitis was typical and went on to desquamation; the other soon faded and gave no further symptoms. It remains, however, for us to make many tests of this sort before pronouncing our opinion too positively on the subject of im-

The clinical picture shown in this affection differs in no wise from that of an ordinary acute dermatitis following the application of some irritant or vesicant. Redness, swelling, the formation of vesicles, which subsequently rupture and discharge an alkaline serum, scabbing and finally desquamation; these are the objective symptoms. Subjectively we find intense burning and itching; and when the areas are unprotected and the drying scabs open up cracks in the skin, the patient complains of pain

out of all proportion to the area affected.

In appearance the disease is much like ivy poisoning, but is usually limited to the fingers or hands, and shows no inclination to spread by contact or autoinoculation. In the majority of cases the disease is much less severe than ivy poisoning, the areas more circumscribed; in fact, usually found only on the parts coming in contact with the solution, and showing a tendency towards chronicity not seen in ivy poisoning. The writer has seen several cases in which the forearms were involved, and one case in which the face was attacked, but in all of these was able to get a history of contact with the solution of metol either directly or indirectly through the use of towels contaminated by the chemical. The writer has heard, through photographers, of many cases in which the whole body had been involved and "running sores" had broken out; but investigation almost invariably uncovered some other disease either accompanying the metol poisoning or being mistaken for it. Of five cases investigated, two were syphilitic, two psoriatic, and the other a true pustular eczema.

Once attacked, the photographer has learned to give metol a wide berth. Some sufferers become so susceptible to its effect that the mere drying of their hands upon a towel containing it is sufficient to bring on an attack of burning and itching accompanied by redness and swelling. This phenomenon has been observed twice in the writer's experience.

The average sufferer presents himself complaining of severe burning and itching of the fingers, usually the soft skin of the median and distal phalanges. The surface is red and swollen and covered with tiny vesicles, which soon rupture, leaving the areas denuded and very painful. The serous discharge is very profuse, alkaline in reaction, and soon dries into scabs. If there are hangnails or breaks in the cuticle about the nails, these areas will be painful beyond all reason and if not properly treated tend to persist for many weeks. When seemingly healed they will suddenly open, discharge serum and cause no end of annoyance and pain.

In simple cases, unlike ivy poisoning, the disease seemingly skips the stage of vesiculation and discharge; and desquamation, accompanied by intense titching, alone engages our attention. But where the discharge is present and scabs form and no effort is made to properly protect the abraded surface cracks open into the true skin. These fissures often penetrate deeply into the tissues and are the cause of much pain and discomfort. Desquamation occurs in all cases, from tiny flakes to whole patches of skin, and it is during this stage that the itching is

most troublesome.

When the disease covers large areas, such as the backs of the hands and forearms, there is usually a little fever present during the initial stages.

Before taking up the treatment of this affection, just a few words concerning its prevention. Avoid using metol in any form or strength of solution if there exists any hangnail or break in the skin into which the solution may enter. When developing plates or prints in metol solutions use but the tips of the fingers, and rinse well in clean water after

each contact. When the development is completed wash the hands thoroughly in soap and water, and dry them on a clean towel.

Rubber gloves are awkward, expensive, and short lived. Finger cots are very liable to leak at the top, and are almost as awkward as rubber gloves. Solutions of citric or acetic acids, recommended by some as positive preventives, have proved useless in the author's hands. Heavy oils, lanolin, and petrolatum applied to the hands before using the solutions certainly protect but tend to injure the negative or print. The writer has found a saturated solution of paraffin in benzin to be about as satisfactory as anything in the way of a protective application. The fingers are dipped into the solution before developing and the benzin allowed to evaporate, leaving the skin intimately covered with a thin coating of paraffin.

In the instruction books supplied by the manufacturers of photographic plates, films, and papers certain formulæ are recommended containing other agents than metol for those who find metol injurious. Might it not be wiser to caution the amateur before using the chemical that its use is attended with danger to some, to mention the symptoms by which the affection may be recognized, and to sug-

gest a few, simple, preventive measures?

In the treatment of metol poisoning we must bear in mind that while the cause is specific the disease is pathologically identical with other dermatites produced by irritants, and that the treatment must be along the same lines usually adopted in handling such cases. In other words, there exists, as yet, no specific with which to combat the disease. The majority of photographers who have expressed themselves to the writer believe that metol is absorbed directly into the tissues, passes into the circulation, and is eliminated slowly. In this way they account for the chronicity of the affection. The writer prefers to believe that this chronicity, this constant repetition of attacks, often lasting intermittently for months, is rather due to a devitalizing effect, which metol seems to exert upon the tissues with which it comes directly in contact.

Hundreds of remedies have been published in the photographic press; some of them are worthy of consideration. But almost without exception these remedies are useful only in the chronic form of the disease. The sufferer who attempts to relieve an acute attack of metol poisoning with some of these "prescriptions" is liable to complicate matters rather effectually, to say the least. The disease must be treated like any other dermatitis—symptomatically.

Rest and protection of the parts affected are imperative. If the attack is severe a cathartic is indicated. If the patient is seen early in the attack, before the skin is broken, some cooling, soothing, astringent lotion is advised. Lead and opium wash, black wash, pure or diluted one to four, or the following prescription work nicely in relieving the intense burning and itching:

| Acidi carbolici. | gr. xl to lx; | Pulv. calamine. | 5; | Pulv. zmci oxidi. | 3; | Sir. | Glycerin. | 5; | Aquæ calcis. | 5; | Aquæ ros.e. | 9 | cl. Siv. | M. sig.; Apply freely on cloths. | Shake well. |

It is seldom, however, that we are consulted before the skin is broken. When this condition supervenes and the surface is bathed in the watery discharge, care must be taken to protect the parts thoroughly and to use the blandest of applications. The stearate of zinc makes a very agreeable application where a dusting powder is desired. To this may be added one or two per cent. of carbolic acid or salicylic acid. When an ointment is indicated in this stage the following is mild and soothing:

| B | Hydrarg. chlor. mitis,gr. x; | |
|------|------------------------------|--|
| | Acidi carbolici,gr. x to xx; | |
| 7./[| Ung. aquæ rosæ, | |

In the chronic form of the disease, when cracks form and the skin is indurated or scaly, an ointment containing one or more of the stimulating drugs gives the best results:

| 19 | Acidi salicylici,gr. 30; |
|---------------------------|--------------------------|
| | Pulv. amyli, |
| | Zinci oxidi, |
| | Ung. petrolati, |
| M. | |
| or | |
| $\mathbf{P}_{\mathbf{k}}$ | Ichthyolis, |
| | Acidi salicylici,gr. xx; |
| | Acidi borici,gr. 30; |
| | Ung. zinci oxidi, |
| M. | |

To either of these prescriptions resorcin, or oil of cade, gr. xx, may be added, if indicated.

516 NOSTRAND AVENUE.

NEURASTHENIA VENTRICULI AND GASTROPTOSIS.

By Harris Weinstein, M. D., New York,

Visiting Physician to the Philanthropin Hospital, and Gastroenterologist to the German Poliklinik.

Nervous phenomena so often accompany visceroptosis that a great many cases of so called nervous dyspepsia can be traced directly to this cause. Occasionally cases of dislocation of the abdominal viscera are met with in which the nervous manifestations are either slight or entirely absent; they are, however, so infrequent that their bearing on the casual interrelationship between the two conditions is hardly affected. While prolapse of the liver is frequently unaccompanied by serious nervous symptoms, prolapse of the stomach, especially of high degree, is, almost without exception, complicated by more or less severe disturbances of the nervous system. It would be a hopeless task to attempt a description of a typical case, as the manifestations are so protean in character that the experienced clinician is often at a loss to correctly interpret the various nervous phenomena. It is the more difficult to correctly diagnosticate these cases, as most organic gastric diseases sooner or later become complicated by various nervous symptoms. To further complicate matters, the secretory and motor functions of the stomach are almost invariably affected in one or other direction in gastric neuroses, and our best efforts are often baffled by such findings. If in a given case of nervous dyspepsia pain after the ingestion of

food is a prominent symptom, if there is tenderness of the epigastrium, and in addition we find increased acidity of the gastric contents, we may be tempted to diagnosticate ulcer of the stomach. Again, there may be a complete anacidity of the gastric juice, severe epigastric pain after meals, a high degree of anaemia, and emaciation from inantion, loss of appetite, nausea, and vomiting. Such findings would lead us to suspect malignancy. In a great many of these cases submotility is a prominent symptom, and if complicated by secretory disturbances may easily give rise to false deductions. Apart from the stomach we have other organs to contend with, especially the condition of the blood, heart, and kidneys.

It is evident from what has been said that the diagnosis of such a condition is anything but a simple matter. It is not, however, my object to point out the difficulties we have to contend with in order to arrive at a correct diagnosis, but rather to point out the distinctive importance of the various prominent nervous symptoms and their proper interpretation. A careful history may at once suggest a neurosis, but to jump to conclusions from the history is dangerous practice and never leads to a satisfactory diagnosis. Besides, there is the danger of being influenced by our first impressions, and we are apt to be guided by them in the interpretation of physical findings. It is, therefore, best to make a mental note of such impression, and then to proceed to a consideration of the various symptoms and physical signs in an unbiased manner. The most constant and important symptoms are the following: Pain, pressure in the epigastrium, pyrosis, sour eructations, globus hystericus, nausea, vomiting, anorexia, abnormal appetite, a sensation of emptiness referred to the stomach, difficulty of deglutition, indefinite pain in the back, abdominal cramps, constipation, or diarrhœa alternating with constipation, attacks of faintness and of impending dissolution, tachycardia, headache, and dizziness. In addition, there are various manifestations indicative of vasomotor affection. All these symptoms may be present in a given case, or only a few principal symptoms masked by a great number of bizarre and unusual sensations. I shall confine myself to an analysis of those symptoms only which would suggest organic disease of the stomach.

The most constant and perplexing symptom in this neurosis is pain referred to the stomach. The textbooks distinguish between pain due to a neurosis and that due to organic disease of the stomach by its relationship to the ingestion of food. If pain is present while the stomach is empty then it points to a neurosis, and if it appears immediately or some time after a meal then it points to organic disease. While in some cases this is true, it is also certain that in an equally large number of gastric neurosepain comes on only after the ingestion of food. Still a gastric analysis will disclose no cause for such pain, for the secretory function may be perfectly normal. Again, there may be an overacidity or an anacidity of the gastric juice and the motor function undisturbed; either of these conditions cannot be held responsible for the pain, for such secretory anomalies are frequently present without giving rise to painful sensations. In those rare cases of gastroptosis where the prolapse is so extreme as tocause a kinking at the junction of the pylorus with the fixed duodenum, thus giving rise to a relative pyloric stenosis, the pain can be explained as being caused by spasmodic contractions of the hypertrophied gastric musculature in its efforts to propel the food through the narrowed lumen of the pylorus. For the minor degrees of gastroptosis such explanation cannot be advanced, and we must have recourse to a possible hyperæsthesia of the gastric mucosa. To properly interpret this symptom we must rely upon other features of the case, also a careful and exhaustive inquiry into its character and its various manifestations may give us a hint to its proper meaning. While pain due to gastric ulcer is always present after a meal, and, if constant, is aggravated even after the ingestion of liquids, such is not the case in hyperæsthesia. Now and then even a heavy meal can be indulged in without causing the slightest unpleasant sensation in the stomach, but such confession is not willingly made by the neurotic, and it must therefore be obtained from him while thrown off his guard. The pain due to organic disease can pretty nearly always be ascribed to some definite cause and its onset traced back to some definite time by the patient; in a neurosis both the cause and onset of the pain are enveloped in a mist that the patient cannot dispel. Another deciding factor from a distinguishing standpoint is the presence or absence of localized tenderness over a circumscribed area in the epigastric region. While such an area of tenderness is present in ulcer, in neurosis tenderness of the entire region is complained of and is never There can be no difficulty in differcircumscribed. entiating the epigastric tenderness which occurs in gastritis or benign pyloric stenosis, as the stomach contents presents too characteristic a picture to be mistaken for a neurosis.

The method of eliciting a circumscribed painful area is important. A suddenly applied blow with the finger over the epigastrium will call forth resentment on the part of the patient as well as of the abdominal muscles, and pain will be complained of whether it is present or not. It should be performed in an easy and methodical manner by pressing the epigastrium with one finger very lightly at first, constantly and gradually increasing the pressure until pain is complained of. The importance of distinguishing between a mere hyperæsthesia and pain due to organic disease cannot be overestimated as much from a positive as from a negative standpoint. It is just as serious to err on the safe side, because in that case a strict diet will not only weaken and emaciate the patient, but will also aggravate the nervous condition.

In the absence of typical attacks of gallstone colic, cholelithiasis often presents a very obscure condition, difficult to distinguish from ulcer or gastric neurosis. While ulcer may be excluded by the absence of occult blood in the stomach contents and in the fæces, we have no means by which to distinguish it from a neurosis. In my experience I have found the symptoms of obscure gallstone disease more persistent and severer, the pain is colicky in character, there is no epigastric tenderness, and pain may often be elicited on pressure over the gallbladder region. There is often tenderness over the entire hepatic area, and is best elicited by light tapping with the closed fist. While none of these symptoms can be fully relied on for a diagnosis, the entire picture of the disease will be helpful in deciding on the true condition. The sensation of pressure in the epigastrium along with nausea, occasionally accompanied by vomiting immediately or some time after a meal, headache, and dizziness, are frequent accompaniments of chronic gastritis. While examination of the gastric contents will greatly aid in distinguishing between gastritis and a neurosis, the results of such examination are not always easy of interpretation. Mucus may be found in a neurotic condition of the stomach as well as in gastritis, and other elements indicating irritation of the gastric mucosa are not at all infrequent, as in gastroptosis there is frequently a mild catarrhal condition of the mucous membrane, especially when accompanied by depression of the muscular tone of the gastric walls. As for the variability of the secretory function I have already mentioned above. Frequent gastric analyses will, however, by the variability of the results, suggest an explanation for these symptoms.

Heartburn and sour eructations are apt to be present in those periods of a neurosis when the gastric secretion is overacid, but it is by no means always The gastric juice may be of normal or even subnormal acidity, and heartburn may be present. This, I believe, is, as in the case of epigastric pain, due to oversensitiveness of the gastric mucosa. In prolapse of the stomach there is often a sensation as of a foreign body in the throat; it is frequently aggravated after a meal. Whether the dragging of the prolapsed stomach on the œsophagus has a bearing on this abnormal sensation I cannot positively affirm, but from the fact that such sensation is aggravated after a meal this explanation seems

plausible.

In a previous paper I reported a case of extreme gastroptosis with paroxysmal tachycardia of eight months' duration, which was immediately relieved on the application of a well fitting abdominal bandage. I then tried to explain the tachycardia by presuming that the prolapsed stomach dragging on the vagi interfered with their proper functioning. Whether my assumption is correct or not, I have since met with a number of cases of gastroptosis with this complication.

A sensation of emptiness in the stomach and of abnormal hunger is often present in overmotility, but it may also be due to a purely nervous condition. In prolapse of the stomach the colon is also displaced to a greater or lesser degree, and as a result there is constipation. Owing to decomposition of the fæcal matter and formation of noxious substances, a colitis develops sooner or later with a re-

sulting diarrhœa.

I have made no mention of the physical examination of the abdominal viscera advisedly the better to impress its importance. While a hurried physical examination, the history and laboratory cannot be relied on for a positive diagnosis in these cases, a careful examination for anomalies in position of the abdominal organs will often clear up the most obscure condition. It is always well to bear in mind that there is frequently a physical cause for neurasthenia, and that one of the most frequent causes is visceroptosis.

841 LEXINGTON AVENUE.

Our Renders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows: LXXVII.—How do you treat varicose ulcer? Closed

August 15, 1908.)

LXXVIII.—How do you treat acute coryza? (Answers due not later than September 15, 1908.)

LXXIX.—How do you treat sick headache? (Answers

due not later than October 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance volutever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested that we have to the traction. (but not required) that the answers be short; if practica-ble, no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. The prize of \$25 for the best essay submitted in answer to question LXXVI has been awarded to Dr. Beverley Robinson, of New York, whose article appeared on page

PRIZE QUESTION LXXVI.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

(Continued from page 459.)

Dr. Wm. F. Bernart, of Chicago, says:

The subject can be considered under the following classification: 1, General considerations; 2, antirheumatic treatment, (a) by mouth, (b) locally, (c) hypodermically; 3, local use of heat or cold; 4, mechanical; 5, treatment of complications.

General considerations .- I. Environments .- Patient must be placed in well ventilated room, the temperature of which, if possible, should not fall

below 70° F.

2. Rest.—Absolute rest, patient taking position

of greatest comfort.

3. Bowels.—Unless successful cathartic has recently been taken, give immediately one of the following: Calomel, 0.016 gramme (1/4 grain), every half hour until 0.20 to 0.325 gramme (3 to 5 grains) have been taken, or magnesium sulphate, 15 to 30 grammes (1/2 to 1 ounce). After the first free catharsis the bowels are kept open if necessary by the use of cascara sagrada at night time or the use of a saline cathartic in the morning. A severe catharsis is not indicated.

4. Diet.-Give no food until after first catharsis; after this give skimmed, fermented, or buttermilk until the overacute symptoms of the disease have subsided, after which a more varied diet can be added. A full diet is not allowed until patient has fully recovered. Water is given systematically, the patient receiving from four to six ounces

Introducamatic medication.—1. By mouth, minister sodium salicylate well diluted with water or milk until the ringing in the ears is secured. This, in the adult, usually requires the use of 8 to 12 grammes (2 to 3 drachms) during the first twenty-four hours; after this continue with 0.65 to 1 gramme (10 to 15 grains) every two hours. This latter dosage is sufficient to keep patient well under the influence of the drug. If taste alone becomes nauseating the drug can be given in capsules. If the full constitutional effects of the drug are obtained, but the desired influence over the disease is not forthcoming, or if the salicylates positively disagree with the patient, it is advisable to give the alkaline treatment a trial. This consists of the administration of potassium citrate or acetate, sodium carbonate or liquor potassæ; 1.32 grammes (20 grains) of the three former or 1.32 c.c. (20 minims) of the latter are given well diluted every two hours. Alternating the salicylate and the alkali seems to be more effective in some cases; this is especially true in cases partially nontolerant to the salicylates. Salicin in 0.65 gramme (10 grain) doses can be used; this drug is less irritating than the sodium salicylate. The use of 0.65 grammes (10 grains) of aspirin every six hours, this preparation displacing the dose of one of the others being given, is influential in assisting in the control of pain.

2. Locally:

| \mathbf{R} | Guaiacol, |
|--------------|--------------------------------|
| | Oil of wintergreen, |
| M. | |
| or | |
| \mathbf{R} | Gum camphor, |
| | Chloral hydrate,5.00 parts; |
| | Oil of wintergreen,5.00 parts; |
| | Fl. ex. of cannab. indica, |
| | Alcohol,30.00 parts. |
| 3.4 | |

Either one of these mixtures is painted, every twelve hours, over the entire surface surrounding the involved joint; the parts are then covered with a thin film of cotton and oiled silk or sheet rubber. The latter formula is more effective when the pain is superficial and of a neuralgic character.

3. Hypodermically.—This consists of the injection of a solution of sodium salicylate either into the tissues, joints, or veins. Injections into the tissues are painful and can be discarded in favor of the injections into the joints or veins. When a large joint, such as the knee, is involved, from 3 to 5 c.c. of a three per cent. solution of sodium salicylate can be injected direct into the intraarticular space. This frequently will quickly reduce the pain, the effusion being gradually absorbed. A better method, however, is the injection direct into a vein. The solution used is as follows:

| | | | | 8.00 | |
|-------|--------|------------|------|-------|--------|
| | | | | 2.00 | |
| | Water, | distilled, | | 50.00 | parts. |
| 74.77 | , | | | | 1 |

During the first twenty-four hours two to three injections of 2 c.c. each are given; after this a daily injection of 2 c.c. will usually suffice. The veins of the forearm should be used. This method is recommendable because of the promptness of the effects produced; it rapidly reduces the pain and effusion, and this without the disagreeable accompaniments attending the internal salicylate medication; it is especially indicated in all cases nontolerant to the administration of salicylates by mouth, and in all cases where the usual procedures do not The method is not produce the desired results. dangerous.

Local use of heat or cold.—The local use of ice is occasionally of service and should be used when the skin is hypersensitive and when heat seems to be ineffective. The application of heat is either local or general, and either dry or moist. The general application is of advantage when numerous joints are involved or later in the attack to produce diaphoresis.

Treatment of complications.—Fever.—If this is high and persistent and not reduced by the anti-rheumatic treatment, it is advisable to resort to the

use of some antipyretic drug.

Pain.—If severe and persistent use either morphine, cocaine, or heroin hypodermically, prefer-

ably the latter two.

Endocarditis.—By the intravenous injections of the sodium salicylate combined with other indicated treatment.

Hyperidrosis.—If sweating caused by the disease

is exaggerated, use atropine or ergot.

Nephritis.—Give mild diuretics in moderation only. Exclusive milk diet. Produce diaphoresis providing same does not exist.

Dr. W. Emory Hyskell, of Meadville, Pa., states:

A patient with acute articular rheumatism should occupy a large, cheery room of uniform temperature, free from draughts and as far away from all noise and confusion as possible. He should be kept absolutely at rest in bed, not being allowed to sit up or make any muscular exertion whatever, so as to give rest to the heart and to the affected joints. His bed should be narrow and have a smooth, fairly firm, yet elastic mattress. As the patient should never become chilled, he should be placed between light blankets and wear flannel nightgowns which have been opened clear down the front and along the sleeves, so they can be easily removed when they become damp with perspiration.

For the first few days, when the pain in the joints is severe, apply a dressing saturated with Fuller's lotion or with leadwater and laudanum. Prevent all movements of the affected joints, fixing them with well padded splints if necessary. In a few days apply an ointment of equal parts of ichthyol and lanolin, surrounding the joints with cotton batting and a pressure bandage. Massage should be

used in prolonged cases.

As long as there are fever and other acute symptoms milk is the most suitable article of diet. Light broths, soups, buttermilk, oatmeal water, and egg albumen may also be given. Feed the patient in small amounts about every three hours. Lemonade (with but little sugar) and plenty of water should be given to flush out the kidneys and carry off the effete products of destructive metabolism. Keep all the emunctories active. Avoid alcoholic stimulation.

The salicylates still hold first place in the treatment of acute articular rheumatism. Give strontium or sodium salicylate, 20 to 25 grains, every three hours. Sufficient doses must be given to relieve the pain or produce cinchonism; small doses are useless. The dose is then lessened and adapted to the severity of the disease and to the susceptibility of the patient. Potassium bicarbonate or acetate should be given with the salicylates in sufficient doses to render and keep the urine alkaline. Phenyl salicylate, salicin, aspirin, and oil of gaultheria are often useful in difficult cases. If the stomach is

irritable, oil of gaultheria (or methyl salicylate) should be applied directly to the joints on cotton batting and then surrounded with a gutta percha

covering

If the disease proves very obstinate, give sodium iodide and wine of colchicum seed, and apply blisters or the Paquelin cautery above and below the affected joints. Avoid opiates if possible, yet do not allow too much exhaustion from pain and loss of sleep. Warn your patient of the liability to cardiac trouble in this disease and of the increased danger that would be caused by rising too soon, by muscular movements, or by excitement of any kind. Watch for and treat any cardiac complications should they arise.

The patient should be kept in bed, and small doses of the salicylates continued for ten or fifteen days after the temperature has become normal. Tonics of iron, arsenic, quinine, and strychnine

should be given during convalescence. (To be concluded.)

Therapeutical Motes.

The Medicinal Treatment of Trachoma.-Ormond (The Practitioner, August, 1908) considers the application of a weak silver nitrate solution the most satisfactory treatment for the second stage of trachoma where the patient complains of pain and discomfort, hotness and itchiness of the eyes, with the lids swollen and thickened. A solution of silver nitrate, in distilled water of the strength of one or two grains to the ounce, should be used three or four times daily after the conjunctival sac has been thoroughly washed out with one of the following lotions: corrosive sublimate, formaldehyde, or chinosol, of a strength of 1 in 10,000 parts of water. The washing of the eyes should be repeated every two or three hours, according to the amount present. The following procedure is advised: Place the patient in a chair with his head well thrown back, or, better still, lying on a couch or table. Have the lotion ready mixed with warm water in a basin beside you; into this put some pledgets of absorbent cotton. In addition, a large piece of dry absorbent cotton will be needed, which should be held against the patient's cheek to absorb the lotion as it escapes between the eyelids. Press this gently against the cheek with the third and fourth fingers of the hand, leaving the thumb and first finger free to hold the lids apart. Take in the free hand one of the soaked pledgets of cotton, hold it over the inner canthus, allowing the lotion to run from it through the parted lids to the external canthus, from whence it will be absorbed by the dry cotton on the cheek. Continue this flushing of the conjunctival sac for two or three minutes, constantly moving the lids so as to insure that the lotion will reach the upper fornices of the conjunctival sac. It being sometimes more difficult to deal with children, the following hints may be valuable. After thoroughly cleansing the outside of the lids, allow some of the lotion to remain over the inner canthus in a little pool. Then, the child being on its back, when persuaded to open its eyes, some portion of the lotion must of necessity enter the conjunctival sac, and so make it unnecessary for the operator to keep the lids apart

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EXPERIMENTAL CAISSON DISEASE.

During the last five years the building of submarine ways has progressed with great rapidity. In New York alone excavations beneath both the East and North Rivers have been extensive and prolonged, and numerous cases of caisson disease have occurred of which we have heard little. An excellent clinical paper by Erdman is almost the only literature that has resulted, notwithstanding the unparalleled opportunities. From the experimental side French and English workers have been more active. Vernon, Boycott, Damant, and Haldane have contributed some very suggestive work, and in a recent communication by Boycott and Damant (Journal of Pathology and Bacteriology, April) the interesting feature of the distribution of extravascular bubbles in the spinal cord is dwelt upon.

It is fairly well conceded that the sudden giving up of the gases held in the blood under pressure is the most dangerous feature of caisson disease. Lesions may take place in almost any organ of the body, but those of the joints and of the nervous system seem to leave the more permanent after effects. The rate at which different animals and different parts of the same animal take up gas on exposure to compressed air is a difficult matter to decide, but in general it is proportional to the volume of the blood relative to that of the tissues and the rate of the circulation. The blood itself is almost instantly saturated and the kidney almost as rapidly, but, on the other hand, other parts of the body do not reach saturation within four or five

hours. Conversely, it is true that, on the release of the pressure, the excess of gas that is taken up will escape from different tissues at rates which will depend upon the activity of the circulation in the various tissues. If this activity is sufficiently great, the excess of gas taken up by the tissues may, on decompression, be removed by the blood and escape by diffusion through the lungs so quickly that actual bubbles may not be formed. Hence more bubbles are formed in those organs in which the circulation is comparatively sluggish. Thus, one rarely finds them in muscles or in glandular structures (kidney, liver, etc.), while synovial structures, bile, amniotic fluid, fat, and the white matter of the spinal cord are more prone to have bubbles formed within them, to the disadvantage of their functions.

The spinal implications in caisson disease have always been among the severest and most striking, and this study on the distribution of bubbles in the cord is unique. The authors show that bubbles are much more frequent in the white than in the gray matter, almost five times as much in the one as in the other; while those that do occur in the gray matter are usually found on the edge, whereas in the white matter the bubbles may be deeply immersed. The bubbles in the anterolateral columns are about twice as abundant as in the posterior columns. So far as topography is concerned, the lumbar enlargement escapes with the fewest bubbles. while the dorsal and upper lumbar portions suffer the most. The richer supply of blood in the cervical enlargement may account for its relatively lessened implication. Bubbles in the medulla oblongata and pons Varolii were not found in the animals under consideration (goats), which is not in accord with what has been observed in human beings. A very definite relation between the occurrence of bubbles and the incidence of necrosis is established in these experiments. This necrosis is due to the blocking of the circulation by intravascular bubbles, and in these areas, therefore, bubbles would be particularly apt to form, as the excess of gas could not be carried off from the tissues by the blood. The necrosis of bony tissues is probably explicable in the light of these findings.

In goats, paraplegia was a striking result of decompression. It was due in all the cases to softening of the spinal cord. The necrosis was confined for the most part to the central portions of the white matter, and the lower dorsal and upper lumbar regions were mostly involved. The distribution is strikingly similar to that found in man. Infarcts are rare, though emboli are seen in large numbers in the lungs and liver, accounting probably for some of the obscure general symptoms and delayed deaths. In the temporary cases of "the bends," evidence of

a few scattered degenerated fibres is obtainable by the Marchi method. In some mild cases in the animals experimented on no permanent damage could be detected. The story is a striking example of the direct application of experimental methods to lesions found in man in a disorder which, if we but knew it, has been not uncommon in New York during the last few years.

A MEDICOLEGAL FARCE.

A story attributed to the Neue freie Presse, of Vienna, is to the following effect: A dead body was found floating in an Austrian river, and its appearance was indicative of an atrocious murder. Popular interest in the case became keen, and an official medical examination of the remains was made with great minuteness, including an investigation of the contents of the stomach. The medical experts, according to the account, were sure that a murder had been committed, and they even went so far as to assert, apparently on the strength of the fact that the food found in the stomach was not such as a human being in his senses would eat, that the victim was insane. But the story was soon spoiled by a gentleman who declared that probably he could explain it. He went on to say that he had recently shot a bear and skinned it, whereupon his servant, disobeying his instructions, had cast the carcass into the river. Then the laugh was on the medical experts, and it resounded all over Austria. There is a possibility, however, that the bear story was a hoax, and, for the sake of our Austrian brethren, we incline to that opinion.

THERAPEUTIC INTRACRANIAL CON-GESTION.

In the Zentralblatt für Chirurgie for July 11th Professor Carl Ritter lauds the application of a band to the neck as a means of preventing vomiting after ether anæsthesia. In over sixty cases in which congestion hyperæmia of the brain was produced by constriction of the vessels of the neck, not a single patient vomited either during or after the operation. The mode of procedure is simple; the ether is given in the usual way, and the operation follows immediately upon the supervention of anæsthesia. Having finished his task, however, the surgeon immediately-before the emergence of the patient from the narcosis-applies a tight band to the neck, so as to obstruct the circulation in the cervical bloodvessels. The band is allowed to remain in place for from half an hour to an hour. The first effect observed as a sequence of the cerebral congestion thus induced is, according to Ritter, the relatively quick emergence of the patient from the anæsthesia; the second, as already intimated, is the suppression of the vomiting so commonly observed, especially when the stomach is overloaded.

These are interesting observations, and, if confirmed elsewhere, may result, perhaps, in some modification of the method of giving ether at present in vogue. While conceding this, however, it is but simple justice to note that the compression of the vessels of the neck in conjunction with the administration of ether, and indeed many other remedies, is no new procedure, in this country at least. Twenty-five years ago and more Dr. J. Leonard Corning published a brief monograph (Carotid Compression, New York, 1882), in which, after an historical résumé of the literature of digital compression of the vessels of the neck, he went on to describe certain instruments designed by himself for compressing the vessels of the neck, notably the carotids, for various periods of time, from minutes and hours, in fact, to days and even weeks. These instruments, ingeniously fitted to their work, were tried by their designer in an extensive series of cases, especially in epilepsy and congestive headache. Finally, in a concluding chapter, Corning said: "I have myself employed carotid compression in conjunction with very moderate doses of the bromides, as well as of hyoscyamus and chloral; and I have seen small doses of these drugs, which by themselves would have remained ineffective, produce most excellent sedative effects when employed in conjunction with carotid compression." Corning explicitly stated in concluding his brochure: "Very recently I have made trial of carotid compression in conjunction with inhalations of nitrous oxide gas, chloroform, and ether."

This seems to be the first account in medical literature of an attempt to enhance and prolong the effects of medicinal agents upon certain parts of the nervous system by retarding or suspending the circulation in the region involved by pressure applied to the bloodvessels. Obviously the interference with the deportation of the medicament is the chief cause of the intensification and prolongation of its effects. It is this principle that Corning subsequently extended and applied to such good purpose in the medication and more particularly the anæsthetization of the peripheral nerves (New York Medical Journal, September 19, 1885). It should not be forgotten that Corning has also sought to achieve a more direct action of various remedies upon the brain by spraying them into the nasal cavity and shortly thereafter compressing the jugular veins by the application over each of a small dry cup, the two cups being joined together in front by an adjustable steel band, and the whole appliance held in place by an elastic strap, which, passing around the neck, is secured behind by a buckle (Medical Record, December 31, 1892). The exhaustion of the cups he achieved in one of two ways. I. By the aid of a small air pump. 2. By placing the subject in a compressed air chamber and connecting the dry cups with the external atmosphere by the aid of small rubber tubing, with an appropriate stopcock in the wall of the chamber was from six to eight pounds above that of the normal atmosphere. (See his work on Pain, pages 265 ct sea.)

Besides these ingenious proposals and devices, Corning also invented appliances for the simultaneous compression of the carotids and faradization of the cervical sympathetics. The first account of these undertakings appeared in this journal nearly twenty-five years ago (New York Medical Journal, February 23, 1884). Neither space nor the specific purposes of this writing, however, permits of their discussion in the present issue. A brief statement of the salient features must suffice.

THE RECENT CHRONOLOGY OF THE ORIENTAL PLAGUE.

A valuable pamphlet entitled The Present Pandemic of Plague, prepared by Assistant Surgeon General J. M. Eager, of the United States Public Health and Marine Hospital Service, traces the progress of the disease in recent years in the form of a chronological record, beginning with the year 1894, when the plague, escaping from an endemic focus in the province of Yunnan, reached the seaport city of Canton. This was the Indo-Chinese variety, or "strain," of the disease, which Dr. Eager thinks has been shown to possess greater power of diffusion than the variety which is endemic in Western Asia. For five years before that there had been annual outbreaks of the plague in localities distant from its endemic centres-places in India, Japan, Arabia, Persia and Russia-but these outbreaks did not lead to a pandemic, if that term can properly be applied to the subsequent widespread prevalence of the disease.

According to a rough estimate, there were 120,-000 deaths from the plague in Canton between March and August, 1894, though there was not a single case in the foreign quarter, with a population of about 300. From Canton the disease spread to Hongkong. In 1895 cases were reported in Hongkong, Amoy, Macao, and Foochoo, but little attention was paid to them. The plague reached Bombay in 1896, probably from southern China, and in the same year it appeared again in Hongkong, where it has ever since been epidemic, and invaded Formosa, in which island also it has continued to prevail. There were a few cases in Japan, Asiatic

Turkey, and Russia. In 1897 there were more than 73,000 cases in India, mostly in the Bombay presidency, though the disease was widely scattered over western and northern India. There was a severe epidemic in Formosa, and there were moderate outbreaks in China, Japan, and Turkey. This was the year of the international conference in Venice, where the preventive measures undertaken by various nations were made uniform.

In 1808 the number of cases in India was more than doubled, and there was an alarming increase in the northeastern and central provinces. In that year the disease reached Calcutta and Madras, also the islands of Madagascar and Mauritius. In 1899 there was a continued increase of the plague in India, though there was a decrease in the Punjab. The disease invaded Egypt, but was confined to Alexandria. It also extended to the French Ivory Coast, the Hawaiian Islands, New Caledonia, Portugal, Russia, Austria, Paraguay, Brazil, and Argentina. In 1900 Cape Colony was attacked, as were also the Philippines and various countries of Australasia. There were a few cases in Scotland, England, Wales, and California (twenty-two fatal cases in San Francisco). In 1901 there was a great increase in India, notably in Bombay. Cases appeared also in the Straits Settlements, in Siam, in European Turkey, in Italy, in Great Britain, and in California.

In 1902 there was a still further increase in India, especially in the presidency of Bombay and in the Punjab, and the disease visited Mexico. There were small outbreaks in the countries that had previously been invaded. In 1903 there was an alarming increase in India, amounting to 1,127,000 cases, with 835,000 deaths. Algeria, British South Africa, Chile, and Peru were the additional scenes of the plague. In 1904 the disease caused more than a million deaths in India. In 1905 there was a slight abatement in India, but the prevalence was fearful in the Punjab. In 1906 there was a great decrease in India, but in 1907 there was another great augmentation; in all India there were about 1,400,000 cases, with 1,200,000 deaths. In that year there were seventy-six deaths in San Francisco and three in Seattle. The narrative, gloomy in the extreme in the case of India, has its warnings for the whole civilized world.

THE SPINAL TREATMENT OF TETANUS WITH MAGNESIUM SULPHATE.

Dr. Griffon and Dr. Lian, who report a case of the successful treatment of tetanus with spinal injections of magnesium sulphate, have summarized our present experience with that plan of treatment (Bulletins et mémoires de la Société médicale des hôpitaux de Paris, July 30th). They find that nine cases have been recorded, with three deaths. As

two of the cases were of the fulminant variety, they think we might say that there had been but one death in seven cases that admitted of a reasonable degree of hope. They are inclined to think it expedient to reduce the amount of the drug employed. The American surgeons, they remark, used a cubic centimetre (about a quarter of a drachm) of a twenty-five per cent. solution for each twenty-five pounds of the patient's weight, but they have produced like results with no more than half that amount. They would begin with the smaller quantity, and increase it if necessary. Atropine sulphate is to be injected in case the respiration becomes embarrassed.

A CORRECTION.

In Dr. Wright's article on The Treatment of Tuberculosis by the Administration of Mercury, which appeared in our issue for August 29th, charts 13 and 14 were accidentally transposed. The legends remaining the same, the cuts themselves should have been shifted.

Obituary.

HENRY FARNUM HOLT, M. D., of Philadelphia

Dr. Holt, who was born in Greenfield, N. H., in 1831, died at his home, in Philadelphia, on Saturday, August 20th, aged seventy-seven years. He was graduated in the class of 1857 from Harvard University, and from the Medical Department of the University of Pennsylvania in the class of 1859. During the civil war he was a surgeon in the Federal army. In 1891 he was surgeon to Peary's Arctic expedition. He was a member of the faculty of the Central High School for forty-one years, first teaching anatomy, physiology, and hygiene, and afterward biology. Dr. Holt was a member of the Philadelphia County Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association.

Rews Items.

Changes of Address.—Dr. George F. Dalton, late house surgeon to the Manhattan Eye and Ear Hospital, New York, has moved to 6 Maple Street, Springfield, Mass.

The New Home for Incurables in Hamilton, Canada. —This institution, erected on the grounds of the House of Refuge, at a cost of \$35,000, was formally opened, with suitable ceremonies, on the afternoon of Wednesday, August 26th.

The Buffalo Medical Clinic.-The first regular menthly meeting of this organization for the year was held on the evening of Thursday, September 3d, Dr. James Stoddart presiding. The chief feature of the programme was a paper on Pain by Dr. Fred Hoffman.

The Gloucester County, N. J., Medical Society will hold its eleventh annual social session at the Woodbury Country Club, Woodbury, N. J., on Thursday, September 17th, from 6 to 11 o'clock. Dr. George Evans Reading, 179 South Broad Street, Woodbury, N. J., is the secretary of this society.

The Third International Conference of the Carers for the Insane.—Dr. Smith Ely Jelliffe, of New York, and Dr. William A. White, of Washington, have been appointed by the Department of State as delegates to represent the United States at this conference, which is to be held in Vienna, October 7 to 11, 1908.

The Medical Society of the County of Richmond, N. Y.—The regular monthly meeting of this society was held at the Staten Island Academy of Medicine on Wednesday, September oth. The paper of the evening was read by Dr. Boleslaw Lapowski, of Manhattan, on Further Progress in the Conception and Management of Syphilis.

The Floating Hospital of St. John's Guild made its last trip for this season on Saturday, September 5th. The guild's Seaside Hospital, at New Dorp, Staten Island, will remain open until the end of the month. It is still crowded to its utmost capacity. Over two thousand mothers and children have been cared for at this hospital during the

Franklin Maternity Hospital, Philadelphia.-This hospital, which is a charitable institution, was opened to receive patients on September 3d. Dr. Edward T. Rosenthal is the physician in charge. The following were elected officers of the hospital: Dr. A. H. Dunn, president; Dr. Edward Rosenthal, vice president; Dr. Joseph Langbord, treasurer; and Mr. J. Simpkins, secretary.

Contagious Diseases in Chicago .- During the week ending August 29, 1908, there were reported to the Department of Health 246 cases of communicable diseases, as follows: Diphtheria, 86 cases; scarlet fever, 37 cases; typholofever, 47 cases; tuberculosis, 41 cases; pneumonia, 5 cases; whooping cough, 13 cases; measles, 12 cases; chickenpox, 2 cases; diseases of minor importance a cases. 2 cases; diseases of minor importance, 3 cases

Physicians' Fees in France.—During the last ten years the number of practising physicians in France has been nearly doubled. There are now nearly 20,000 physicians in the republic, and about 2,000 are graduated from the medical schools each year. As a result of this competi-tion doctors fees are very small in France, in some districts one franc being all that is paid for a doctors call.

Richmond, Va., Academy of Medicine and Surgery. Richmond, Va., Academy of Medicine and Surgery.—
The regular meeting of this organization was held on
Tuesday, September 8th. Dr. George Ben Johnston read
a paper entitled Diagnosis and Treatment of Chronic Pancreatitis, and Dr. G. Paul La Roque read a paper entitled
Differential Diagnosis of Intraabdominal Tumors. The
general discussion which followed was opened by Dr. M.
Pierce Rucker.

Improvements in the Memphis, Tenn., City Hospital. The work of improving the equipment of this hospital has been going steadily on for some months past, and the institution is now one of the most up to date and best equipped in the country. An x ray machine has been purchased, a model sterilizing plant has been installed, and arrangements are being made for the establishing of a bacteriological laboratory in connection with the hospital.

To Prevent the Spread of Tuberculosis in Tennessee.

—A conference was held in Nashville recently in the office of the City Board of Health, for the purpose of devising means to prevent the spread of tuberculosis. Members of the State and county boards of health, the county and city boards of education, the antituberculous league, and any other citizens particularly interested in the problem were invited to attend the meeting and offer suggestions. invited to attend the meeting and offer suggestions.

The Medical Society of the Borough of the Bronx.—
A stated meeting of this society was held on Wednesday, September 9th. Dr. Henry Roth presented reports of cases of sarcoma of the thyreoid, hypernephroma of the right kidney, and carcinoma of the sigmoid. Dr. William H. Kahrs read a paper on the Diagnosis and Treatment of the Toxemias of Pregnancy. Dr. S. S. Graber read a paper on the Diagnostic Significance of Uterine Harmorthage

Scientific Society Meetings in Philadelphia for the Week Ending September 19, 1908:

Monday, September 14th, -Wills Hospital Ophthalmic

Nonday, September 15th.—Dermatological Society; North Branch, Philadelphia County Medical Society.
Wednesday, September 16th.—Association of Clinical Assistants, Wills Hospital; Franklin Institute, Friday, September 18th.—American Philosophical Society.

A Union Meeting of Medical Societies .- A number of medical societies from Vermont, New Hampshire, and Massachusetts will meet at Northfield, Mass., on Tuesday, Natissachusetts will meet at Northneid, Mass., on Tuesday, September 22d. An excellent programme has been prepared, which includes papers by Dr. George G. Sears, Dr. Harry H. Germain, Dr. Herman F. Vickery, Dr. Joel E. Goldthwaite, Dr. John Jenks Thomas, and Dr. Timothy Leary. A general invitation is extended to all members of the medical profession to be present and take part in the discussions. discussions

A New Building for the New York Dispensary.— Plans have been filed for a new building for this institu-tion, to be erected at 145 and 147 Worth Street, to replace the old building on Centre Street which it has occupied for more than a quarter of a century. The new building will be a one story and basement structure, in the style of an Italian renaissance palace, with a large central doorway, and will be lighted by a dome ceiling of paneled glass. will contain a diet kitchen, a drug store, a dentist's office. small isolation wards, and a tuberculosis ward. The estimated cost is \$25,000.

The Rhode Island Medical Society.-The quarterly meeting of this society was held in Providence on Thursday afternoon, September 3d, Dr. F. B. Fuller, of Pawtucket, president of the society, in the chair. A paper entitled Insanity in the Light of History was read by Dr. Fred B. Jewett, and discussed by Dr. Willard H. Greene and Dr. William McDonald, Jr. Tuberculin in Diagnosis was the title of a paper read by Dr. Frederick T. Lord, of Roston. Among those who participated in the discussion Boston. Among those who participated in the discussion of this paper were Dr. Jay Perkins, Dr. Harry L. Barnes, and Dr. Helen C. Putnam.

The National Medical Association.-This association, The National Medical Association.—This association, which is composed of colored physicians, held its tenth annual convention in New York recently, and elected officers for the ensuing year as follows: President, Dr. P. A. Johnson, of New York; vice president, Dr. W. S. Lofton, of Washington, D. C.; general secretary, Dr. J. A. Kenney, of Tuskegee Institute, Alabama; treasurer, Dr. A. Wilberforce Williams, of Chicago; chairman of the Section in Medicine, Dr. C. W. Childs, of Washington, D. C.; chairman of the Section in Surgery, Dr. A. M. Curtis, of Washington, D. C. The association will meet next year in Boston.

Charitable Bequests .- By the will of Mr. Frederick Cooper Hewitt, who died recently in Owego, N. Y., the New York Postgraduate Medical School and Hospital re-New York Postgraduate Medical School and Hospital receives \$2,000,000; Yale University, \$500,000; the Little Missionary Day Nursery, New York, \$200,000; the Free School for Crippled Children, New York, \$100,000; the Netherwood, N. J., Fresh Air Home, \$100,000; American Society for the Prevention of Cruelty to Animals, New York, \$10,000; the Sheltering Arms Society, New York, \$10,000; the Sheltering Arms Society Temperance Industrial and Collegiate Institute, Claremont, Va., \$3,000, and the Coburn Free Library, Owego, N. Y. \$3,000. A few days before his death Mr. Hewitt gave \$22,322 to the R. A. Packer Hospital, Sayre, Pa.

The Medical Association of the Southwest, whose membership is limited to the members of the State associations of Missouri, Arkansas, Texas, Kansas, and Oklaclations of Missouri, Arkansas, Texas, Kansas, and Oklahoma, will hold its third annual meeting in Kansas City, Mo., on October 19, 20, and 21, 1908. The officers of the association are: President, Dr. Thomas E. Holland, of Hot Springs, Ark.; secretary, Dr. F. H. Clark, of El Reno, Okla.; chairman of the Section in Surgery, Dr. Bacon Sanders, of Fort Worth, Tex.; chairman of the Section in Eye and Ear Diseases, Dr. F. Haynes Buxton, of Oklahoma Medicine, Dr. F. Young, of Springdale, Ark.; chairman of the Committee on Arrangements, Dr. John Punton, 532 Altman Building, Kansas City, Mo.

A Joint Meeting of Medical Societies in Frederick, A Joint Meeting of Medical Societies in Frederick, Md.—The medical societies of Frederick and Washington Counties, Md., met in joint session in Frederick recently. The attendance was good, and at the close of the meeting a banquet was served in the Hotel Braddock. The programme included the following papers: A Message to Western Maryland, by Dr. B. W. Goldshoro, president of the Medical and Chirurgical Faculty, Baltimore: State Care of the Insane, by Dr. A. P. Herring, secretary of the Maryland State Lunacy Commission: Prevention of Typhoid Fever, by Dr. C. W. G. Rohrer; When is Rheumatism Not

Rheumatism? by Dr. C. W. R. Crum, of Brunswick; Parasteen by Dr. C. W. R. Crum, of Brunswick; Parasites, by Dr. E. Tracey Bishop, of Smithsburg; Medicine in the Tropics, by Dr. A. T. Poole, of Burkittsville; The Clinical Use of Medical Remedies of Unknown Composition, by Dr. C. R. Miller, of Mason and Dixon; Noblesse Oblige, by Dr. V. M. Reichard, of Fairplay; Sunset in Greece, by Dr. S. S. Davis, of Boonsboro.

The Mortality of New York During the Month of August.-During the month of August, 1908, the total number of deaths was 5,971, which was 1,345 less than in August of last year. The principal causes of death were: Typhoid fever, 73 deaths; measles, 24 deaths; scarlet fever, 23 deaths; whooping cough, 26 deaths; diphtheria, 63 deaths; cancer, 282 deaths; meningitis, 51 deaths; heart diseases, 503 deaths; tuberculosis, 641 deaths; alcoholism, 38 deaths; pneumonia, 381 deaths; diarrhœa, under two years of age, 1,339 deaths; appendicitis, 41 deaths; Bright's disease, 170. There were 461 violent deaths, of which 25 were from sunstroke, 76 from drowning, 29 from railroad accidents, 21 from horses and vehicles, 16 from homicide, 64 from suicide.

The Mortality of Chicago.—According to the Bulletin of the Chicago School of Sanitary Instruction for the week ending August 29, 1908, there were reported to the Department of Health of the City of Chicago during the week 584 deaths from all causes, as compared with 575 for the previous week, and 616 for the corresponding period in 1907. The annual death rate in 1,000 of population was 14.09, as against 15.24 for the corresponding week last year. The principal causes of death were as follows: Apoplexy, 10; Bright's disease, 31; bronchitis, 8; consumption, 65; cancer, 33; convulsions, 1; diphtheria, 9; heart diseases, 47; intestinal diseases, acute, 173; nervous diseases, 16; pneumonia, 25; scarlet fever, 5; suicide, 13; typhoid fever, 9; violence (other than suicide), 35; whooping cough, 1; all other causes, 103.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending September 5. 1008:

| | —-Au | g. 20 | -Se | pt. 5—— |
|--------------------------|-------|---------|--------|---------|
| | | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmonalis | 464 | 141 | 466 | 155 |
| Diphtheria | 140 | 15 | 175 | 22 |
| Measles | 71 | 3 | 57 | 5 |
| Scarlet fever | 85 | 4 | 85 | Q |
| Smallpox | | | | |
| Varicella | 3 | | 8 | |
| Typhoid fever | I.4.4 | T 4 | 138 | 1.1 |
| Whooping cough | 30 | .3 | 7 | 5 |
| Cerebrospinal meningitis | 6 | 0 | 5 | 1 |
| | | | | |
| Totals | 943 | 189 | 941 | 208 |
| | | | | |

Personal.-Sir William Ramsay has had conferred upon him the honorary degree of doctor of medicine by the University of Jena, on the occasion of the elebration of the three hundred and fiftieth anniversary of the found-

of the three housests.

Ing of the university.

Dr. Henry M. Hurd, medical superintendent of Johns
Hopkins Hospital, has been appointed a member of the Maryland State Lunacy Commission.
Dr. S. Weir Mitchell, of Philadelphia, has been elected a

or, L. P. Barclay, at one time a representative of the Bausch & Lomb Optical Company, Rochester, N. Y., died 1 September 1st. Professor E. Kraepelin, of Munich, has been in this

country for the past month, visiting in the West.

Vital Statistics of New York .- During the week ending August 20, 1908, the total number of deaths reported to the Department of Health was 1,284, as compared with 1,385 for the previous week, and 1,472 for the corresponding period in 1007. The annual death rate in 1,000 of population was 15.15, as against 17,02 for the corresponding week last year. Of the total number of deaths 672 were in Manhattan, 100 in the Bronx, 402 in Brooklyn, 75 in Queens, and 35 in Richmond. The death rate in Brooklyn was the lowest for the five boroughs, being 14.05, while that in Richmond was the highest, being 23.81. In Manhattan the death rate was 15.29; in the Bronx, 15.93, and in Queens, 16.82. Of the total number of deaths 5.43 were of children under five years of age, and of these 278 were due to diarrhead diseases. There were 2.650 births, 4.33 marriages, and 132 still births reported during the week.

The Health of Minneapolis .- During the month of July, 1908, the following cases of transmissible diseases were reported to the Department of Health: Diphtheria, 30 cases, 5 deaths; scarlet fever, 14 cases, o deaths; smallpox, 4 cases, o deaths; typhoid fever, 5 cases, 2 deaths; tuberculosis, 26 cases, 22 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 8 deaths; diarrhœa and enteritis, under two years of age, to deaths; two years and over, 3 deaths. There were 9 suicides. The total number over, 3 deaths. There were 9 stitledes. The total number of deaths from all causes was 229, in an estimated population of 300,000, corresponding to an annual death rate in 1,000 of population of 7,02. Of the total number of deaths 54 were of children under five years of age. There were 17 still births, II males and 6 females.

A Decrease in New York's Infant Mortality.—The Report of the Conference for the Summer Care of Babies, recently submitted by Dr. Walter Bensel, chairman of the conference, shows the most encouraging results in the methods employed this year in the work of caring for infants during the summer months. In the thirteen weeks since the work was begun there were 2,868 deaths of children under one year of age and 3,404 under five years of age, as compared with 3,020 and 3,704, respectively, in 1907. The of inspectors, twenty. All told, 26,075 mothers were interviewed and instructed in their homes; 8,747 revisits were made; 4,926 instructions were given to mothers on piers; 318 lectures were given in ninety-two schools; 1,188 instructions were given to mothers attending 318 school lectures, for which an attendance of 10,878 is recorded; sick babies received 1,372 visits at their homes; 1,071 treatments were given sick babies on piers, while 361 treatments were given to sick babies brought to school lectures.

Society Meetings for the Coming Week:

Society Meetings for the Coming Week:

Monday, September 14th.—Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Waterbury, Conn., Medical Association.

Tuesday, September 15th.—Buffalo Academy of Medicine (Section in Pathology); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton N. Y., Academy of Medicine (annual); Syracuse, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Medical Society of the County of Westchester, N. Y.

Weddishay, September 16th.—Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City, N. J.); Buffalo Medical Club; New Haven, Conn., Medical Association.

Thursday, September 15th.—German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

Friday, September 18th.—Clinical Society of the New York Postgraduate Medical Society of the New York Miscroscopical Society; Brooklyn Medical Society.

The New Corps of Women Nurses for the Navy.—

The New Corps of Women Nurses for the Navy.-The first examination for women nurses for the naval hospitals will be held in Washington on Saturday, September 12th, at the Naval Medical School. Twenty positions will be filled from the list of eligibles resulting from this examination. amination. Other examinations will be held later until a corps of a hundred or more capable nurses has been obtained. In addition to the provision to be made for the hospitals at Canacao and Yokohama, the hospital at San Juan will require women nurses. The tour of duty at these foreign ports will be two years. As the corps increases in numbers, it is proposed to form a reserve corps, consisting of nurses who have received an honorable discharge, and who obligate themselves to return to active duty when an emergency requires it. The pay of nurses in the new corps has been fixed as follows: \$40 a month when on duty in the United States, and \$50 a month when serving on hostial ships or honorable the continuated limits of the United pital ships or beyond the continental limits of the United States. Quarters and subsistence will be provided in ad-A nurse when assigned to duty as chief nurse at a hospital, where not less than two nor more than four nurses are stationed, will receive an additional \$5 a month; where not less than five nor more than nine nurses are stationed, \$10 a month, and where ten or more nurses are stationed, \$25 a month, Wiss Esther V. Hassan, of Baltimore, has been appointed chief of the corps at a salary of \$1,500 eyear. Miss Hassan served on the hospital ship Relief during the Spanish War, and on the Isthmus of Panama in IQOI

Bith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

September 3, 1908.

I. The Country Doctor's Relations with the Metropolitan Institutions and Specialists, By GILMAN OSGOOD. Study of One Hundred and Thirty-six Cases of Diarrheea Occurring on the Boston Floating Hospital during the Summer of 1907, By W. T. Lucas.

during the Summer of 1907,

By W. T. Lucas.

Deceptive Condition in the Hippoint,

By Roland Hammond.

Erythema Multiforme with Visceral Lesions,

By J. N. HALL.

2. A Study of One Hundred and Thirty-six Cases of Diarrhœa Occurring on the Boston Floating Hospital during the Summer of 1907 .-Lucas reports 136 cases of diarrhoea, of which eighty-four were infectious diarrhœa and sixty-three were intestinal indigestion. The majority of these cases, on admission to the hospital, had the typical movements of intestinal infection; small, watery green, or yellow, consisting mainly of mucus, frequently with curds. Of all these cases, only twentyfour had blood in their movements while on board, so that of eighty-four cases of the infectious type only twenty-two, or twenty-six per cent., had bloody movements. Initial high temperature was a noticeable feature in these severe cases only by its absence, low or subnormal temperature being more often the rule. Vomiting was a factor of enough moment in 119 cases to require careful attention. There were several distinct types with which the author became perfectly familiar before the season was over: (1) The utterly hopeless cases with severe toxæmia, presenting the picture of "coma vigil," with eyes half open, lustreless, and with a proneness to develop corneal ulcers. (2) The toxic type with or without frequent stools, and very often the infants in this class had no movements without irrigations or only one to three a day, yet they were certainly toxic. It was often noted that the toxicity lessened with the frequency of the stools, thus showing that the number of movements is not always a good criterion from which to judge the severity of the disease. (3) Children between one and two years, active, and in perpetual motion, until completely overwhelmed with toxines, were very trying to treat. (4) The patients with frequent stools that did not appear very sick or toxic, but often dragged on to become numbered with the obstinate chronic cases. The initial cleanser in most cases was castor oil in liberal amounts; one and one half to three drachms for children under one year. Calomel was given only when oil could not be tolerated, and in these cases it was rarely retained. That high irrigations are of value there can be no question, but that too much weight is attached to frequent colon irrigations, the author is convinced. Of far greater value, where there is pronounced vomiting, is the practice of lavage. Of the 119 vomiters, forty-six had repeated stomach washings, frequently three or four times a day. A half hour before feeding was attempted, the stomach was given a thorough washing. Lucas concludes that the best of our present methods of treatment of these cases is starvation, carefully watched, followed by any one of the weak mixtures, low in fat. The guide to starting milk in any form is the general picture the child presents rather than the temperature or any

one symptom. Saline infusions are one of the most valuable aids in carrying out the starvation treatment and supplying the liquid quotient. The benefit of colon irrigation is overestimated, though useful in moderation; once in twenty-four hours being sufficient. The lavage is a very important factor when the infection has reached or attacked the stomach. Stimulation is of little value in extreme cases.

4. Erythema Multiforme with Visceral Lesions.—Hall reports two such cases. It is to be noted that of the fourteen leading phenomena mentioned as occurring in Osler's group of twenty-nine cases, the number present in any given case varied between four and ten. Purpura was noted in twenty-two cases, urticaria in seventeen cases, œdema in five cases, erythema in fourteen cases, fever in fourteen cases, colic in twenty-five cases, vomiting in . fifteen cases, diarrhœa in five cases, hæmorrhages in fourteen cases, nephritis in fourteen cases, albuminuria in fifteen cases, arthralgic pains in seventeen cases, endocarditis in three cases, and enlarged spleen in three cases. Various other manifestations were noted in one or two cases only. In the first case there were ædema, erythema, fever, colic, vomiting, hæmorrhages (from the kidneys), nephritis (including the albuminuria, classified separately in Osler's article), arthralgic pains, and enlarged spleen; in the second case, purpura, cedema, erythema, fever, hæmorrhage, arthralgic pains, and the group of symptoms relating to the nervous system, coma, hyperæsthesia, photophobia, etc. The first case is like many of those heretofore reported, while the second varies in detail from any on record, but the general picture conforms to the type.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. September 5, 1908.

- 1. Artificial Respiration in Its Physiological Aspects.
- Artificial Intrapulmonary Positive Pressure. Experimental Applications in Surgery of the Lungs,
 By Samuel Robinson
 The Positive Pressure Method of Artificial Respiration with Its Experimental Application to the Surgery of
- with its Experimental Application to the Surgery of the Thoracic Esophagus,
 By NATHAN W. GREEN and J. W. DRAPER MAURY.

 4. Present Status of Surgery of the Thorax and the Value of the Sauerbruch Negative Pressure Procedure in the Prevention of Pneumothorax,
 By E. F. SAUERBRUCH.

 5. Laryngeal Crises and Paresis of the Abductors of the Vocal Cords as Important Early Symptoms of Tables
- Vocal Cords as Important Early Symptoms of Tabes,
- with the Report of a Case,
 By Otto T. Freer and Stanton A. Friedberg.
- Formaldehyde Derivatives. A Report to the Council on Pharmacy and Chemistry,
 Serum Diagnosis of Syphilis,
 By WILLIAM J. BUTLER.
- The Nature and Cause of Œdema. By MARTIN H. FISCHER
- The Care of Patients after Abdominal Section; with Special Reference to the Period of Time They Should be Kept Recumbent, By C. C. FREDERICK. Anaphylaxis Induced by Bacterial Proteins
- By D. H. BERGEY. II. The Alleged Urinary Manifestations in Diseases of the Pancreas, By J. Henry Schroeder.
- Artificial Respiration.—These papers were read before the Section in Surgery and Anatomy of the American Medical Association at the fifty-ninth annual session. Schäfer, of Edinburgh, remarked that in cases of drowning the prone pressure method of artificial respiration is always indicated. Its advantages are: 1, That it is fully efficient; 2, that

it can be performed without fatigue by a single individual; 3, that it is simple and easily learned; 4, that it allows the tongue to fall forward and the mucus and water to escape from the mouth, so that the tendency of these to block the passage of air, which is inherent to the supine position, is altogether obviated. It can be applied equally well in attempting to revive a patient whose respiration has ceased in consequence of an overdose of chloroform or other anæsthetic. One of the difficulties and dangers of a general anæsthetic is the excessive secretion of saliva and mucus. This, with the subject in the prone position, would tend to flow out of the mouth. With chloroform another source of danger is the tendency of the heart to undergo fatal inhibition, owing to the influence of the drug on the vagus centre. Both these dangers are obviated by the hypodermic administration, prior to the operation, of a small dose (1/50 grain) of atropine sulphate. Circumstances may arise in surgery in which artificial respiration is called for, but which would not permit of the employment of either of these methods. In these cases the simplest apparatus which can be employed is an ordinary bellows or a piston cylinder. It is not even necessary to introduce the air directly into the trachea, for, as Horvath observed, if the nozzle of a bellows is introduced into one nostril, the other nostril being left open but the mouth kept shut, it is possible by a vigorous movement of the bellows to distend the lungs quite efficiently, and by repeating the movement regularly, to carry on artificial respiration. But in surgical operations which involve the opening of both sides of the chest it would be safer to perform intubation of the larynx, or even temporary tracheotomy. In any case, it is highly desirable in such circumstances to adopt, if possible, the prone position for the patient. Under some circumstances a tendency to dyspnœa is increased by the supine position.—Robinson said that the results of thirty operations under positive pressure with seventy per cent. recoveries were encouraging. Thirty operations and twenty-five experiments proved that emphysema and circulatory changes did not occur with a properly regulated apparatus. In the use of positive pressure the escape of deoxygenated air must be amply provided for.—Sauerbruch described his method. He based his work on the known principles of the difference between the intrabronchial pressure and the pressure at the surface of the pleura, about 7 to 8 mm. Hg, which served to keep the lungs distended. If the normal relationship between these pressures was disturbed, as by opening the thorax, the lungs collapsed, and the result was a pneumothorax, which might be followed by serious disturbances, such as dyspnœa, displacement of the diaphragm and heart, vagus reflexes, etc. Believing that these complications would not occur if the normal relationship of these pressures could be maintained, he was led to carry out the following experiments: The ends of a glass cylinder were sealed with gutta percha paper. One end was perforated by three openings, two small ones and one large one; the opp site end was perforated by a single large opening. The animal was placed in the exlinder, so that the head proteuded from one of the

large openings, and the legs and lower part of the body through the other opening. He passed his hands in through the small openings, endeavoring to keep the cylinder airtight. Next, the cylinder was exhausted sufficiently to reduce the air pressure 10 mm. Hg; then he opened the thorax-and the lungs did not collapse, nor was the respiration disturbed in any way. This primitive apparatus was replaced by a better and a larger one, and then by a small operating room, in which he performed a number of intrathoracic operations, such as resection of the lung and œsophagus and operations on the heart, and always with the same result, total absence of pneumothorax. The result of these experiments was the building of an operating room for practical use. The first operation done in it (resection of œsophagus) proved positively that the results obtained in animal experimentation could be duplicated in the case of the human being-that pneumothorax could be prevented. Having estabfished the correctness of the principle of his method, it became necessary to elaborate the operative technique. Definite rules had been laid down for certain operations. So far as the anæsthetic was concerned, it was remarkable how small a quantity was necessary to produce complete anæsthesia, and then only at the time of opening and closing the thoracic cavity. During the remaining steps of the operation very little of the anæsthetic was required. It had been shown that it was unwise to reduce the pressure more than 3 to 5 mm. Hg. Before concluding the operation it was essential to raise the pressure to 7 or 8 mm. Hg, so that the lungs might become fully expanded, filling the chest cavity completely. The strictest asepsis must be observed, as in abdominal operations, and complete hæmostasis was of the greatest importance, especially when entering the thoracic cavity, so that as little blood as possible would enter. The author described the indications and his technique.

7. Serum Diagnosis of Syphilis .- Butler observes that the serum reaction for syphilis is specific. It is found positive in from ninety to ninetyfive per cent. of all cases with syphilitic manifestations, positive in fifty to sixty per cent. of latent cases, positive in from seventy to eighty per cent. of parasyphilitic diseases. The reaction is in many cases influenced by treatment of the patient, and it is not improbable that this number would be greatly increased if the reaction were pursued throughout prolonged treatment. A positive reaction indicates activity of the specific virus, and is an indication for antisyphilitic treatment. While a positive reaction indicates syphilis, a negative reaction does not have an equal negative value. It is diagnostic of a systemic infection, whether acquired or inherited, and not an organ diagnostic measure. The reaction will be found of enormous advantage in distinctive diagnosis in every department of medi-

8. The Nature and Cause of Œdema.-Fischer calls attention to the fact that dead bodies kept in water become cedematous. This is due to the fact that after death the tissues become acid, and absorb water from their surrounding medium. For the

same reason gangrenous tissues swell if a source of water is furnished them either from without or through the blood and lymph vessels. In gangrene due to occlusion of a vein it is well known that the tissues are ordinarily moist and swollen, while a gangrene due to occlusion of an artery is ordinarily dry. The conception of ædema offered here holds for local as well as generalized cedemas. In fact, one form of local ædema furnishes what amounts to experimental proof of the ideas advanced. Reference is made to the rapidly developing cedema which follows the stings or bites of various animals capable of carrying formic or other acids into the wound produced by them. Formic acid is exceedingly active in increasing the affinity of various colloids for water. This explains why its introduction into the tissues—as through a flea bite—is followed by such a rapidly developing local ædema. That circulatory disturbances are not primarily responsible in this case is indicated very clearly by the fact that the cedematous tissues are initially white, and only after resolution has commenced does an increased flow of blood occur through them. Flea bites can, in fact, be perfectly mimicked with a needle, a little formic acid, and a hydrophilic colloid. If a gelatin plate is pricked with a needle dipped into formic acid, and a little water poured over the gelatin plate, wheals soon develop on the surface of the gelatin, which, in shape and in the rate of development are identical with those which follow the bite of a flea or the prick of a formic acid laden needle in the skin of a human being. As another form of local cedema which finds a ready explanation on the basis of the ideas advanced here, are glaucoma and the imbibition of water by the crystalline lens.

MEDICAL RECORD September 5. 1008

The Influence of Overweight and Underweight on Vi-

The Influence of Overweight and Underweight on Vitality,

By Brandberth Symody.

Congenital Umbilical Hernia, with Report of Case,
By W. Edward Magruer.

Report of a Case of Brain Tumor with Autopsy,
By Morrels J. Karras.

Case of Obstruction of the Bowels, Simulating Appen dicitis,
By J. McPadden Gaston.

By Martin L. Bodkin.

The Narcotic Method of Treating Morphisism.

Sigmoiditis,
The Narcotic Method of Treating Morphinism,
By Charles J. Douglas.
The Effective Treatment of Membranous Colitis,
By David Wark

A Tube for Selfinsufflation of Vapor into the Middle By PERCY R. WOOD.

The Influence of Overweight and Underweight on Vitality.-Symonds gives a table of average weights for men, compiled by the Association of Life Insurance Medical Directors. It can be noted that each added inch in height calls for an addition of 3 per cent. in the weight. This rule will apply, if liberally interpreted, to all but the small man. The weight increases steadily with the age in each horizontal line up to the year forty-five among the little men, the year fifty among the middle sized men, and the year fifty-five and even sixty among the tall men. One is almost tempted to say that the taller the man the longer it takes him to reach full maturity as shown by his weight. In the very tall this rule does not seem to apply.

The largest number of individuals was found at five feet eight inches of height, and this is true for all ages below sixty. The age period showing the largest number of individuals was the decade twenty-five to thirty-four, and this is true for all heights. In the case of women our standard is not yet assured. Dr. Shepherd analyzed the records of 3,016 female applicants accepted for insurance. This number is too small to give accurate results. In general, the record shows that at the age of twenty women are lighter than men by six to nine pounds. This difference gradually diminishes with advancing age. By the time the menopause is reached it becomes one or two pounds only, and after this is may be obliterated. A patient is not considered overweight unless it is more than 20 per cent. above the standard weight for the height and age. For example, at age forty the standard weight of a man five feet six inches tall is 150 pounds. We would not regard him as an overweight until he had passed 180 pounds, which is 20 per cent. in excess of his standard weight. As long as the weight is not below 80 per cent. of the standard-i. e., not more than 20 per cent. below the standard—a patient is not considered of underweight. The differences between overweights and underweights are stated by the author: The mortality among all those, irrespective of age, who are between 20 and 30 per cent. below the standard weight, is 96 per cent., while the mortality of all, irrespective of age, who are between 20 and 30 per cent. above the standard, is 113 per cent. These figures alone would show that overweight is a much more serious condition than underweight. On the other hand, we must take into account the fact that until recent times overweights were accepted more freely by insurance companies than underweights. To put it in another way, underweights were selected with more rigid care than overweights. The old idea that an overweight had a reserve fund to draw upon in case there was a run on his bodily bank was prevalent, although it was recognized that excessive fat might be harmful and should exclude the risk, on the ground, perhaps, that it was a form of capital which was not active. Similarly, an underweight was considered to be undercapitalized, and if his bodily bank had to go through a panic like pneumonia, or hard times like organic heart disease, he would become insolvent and bankrupt. As a result of this method of thought, our underweight mortality is rather better and our overweight mortality rather worse than if both sets had been accepted under exactly the same conditions. But, even if we make full allowance for the difference in selection, he is convinced that the same percentage of overweight is a more serious matter than if it were underweight. The excessive weight, whether it be fat or muscle, is not a storehouse of reserve strength, but it is a burden which has to be nourished if muscle, and which markedly interferes with nutrition and function if fat. This does not apply to the young, those below twenty-five years of age. Here a moderate degree of overweight is much more favorable than underweight. In fact, up to age twenty-five an overweight not to exceed 110 per cent. of the standard is upon the whole good for the individual. It seems to indicate a certain hypernutrition and robustness of physique which is favorable to the subsequent life. Underweight among these young people, on the other hand, is unfavorable, and in some cases indicates commencing disease or the tendency thereto. But when we pass the age of thirty these conditions are reversed, and the difference between overweight and underweight in their influence upon vitality becomes more marked with each year of age. Of course, for the best interests of health, one should be near standard weight, and that is the sermon which we should preach to our patients.

BRITISH MEDICAL JOURNAL.

August 22, 1908.

I. Are Yeast Extracts Justifiable as Substitutes for Extract of Meat?

By A. GAMGEE.

tract of Meat?

Third Report on Clinical Experiences with Spinal

Analgesia; with a Third Series of One Hundred

Cases,

By A. E. BARKER. 3. Some Lessons from Ancient Fractures.

(The Seventy-sixth Annual Meeting of the British

-sixth Annual Medical Association.)

Section of Dental Surgery.

By F. Harrison. 4. President's Address, 4. Trestering Address, By F. HARRISON.
5. Discussion of Antral Disease in Relation to Special and General Surgery, Introduced by H. Tilley.
6. Discussion on Teething and Its Alleged Troubles.

Introduced by L. GUTHRIE.
7. Two Cases of Acute Pyorrhœa Alveolaris Treated by a By K. W. GOADBY. Section of Industrial Diseases.

8. Discussion on Diseases of the Lungs Caused by Dust,
Introduced by H. Scurfield.

9. Dust Removed in the Grinding Trades,

By C. Johnston and S. R. Bennett. 10. Discussion on the Notification of Industrial Diseases, Introduced by A. Scott By F. SHUFFLEBOTHAM.

11. Industrial Dermatitis, Tar and Asphalt Workers' Epithelioma and Chimney Sweepers' Cancer, By T. OLIVER Sweepers' Cancer, By T. OLIVER
13. An International Committee on Industrial Disease,

By L. CAROZZI.

14. Preliminary Observations on a Fatal Case of So Called

By R. P. WHITE. Aniline Poisoning, Section of Physiology.

15. Discussion of the Physiology of Purin Metabolism,

Introduced by J. B. Leathes.

16. The Influence of Oxygen Inhalations on Athletes.

By L. Hill, M. Flack, and T. H. Just.

2. Spinal Analgesia.—Barker reports a third series of one hundred cases of spinal analgesia. The conditions produced by spinal analgesia appear to be, as regards the actual performance of the operation, more favorable for the surgeon and not more disagreeable for the patient than those produced by general anæsthesia. Deaths will unfortunately continue to occur after grave operations under any and every form of anæsthesia. Beginners should not use the method in extremely debilitated patients or severe operations on the abdomen requiring high analgesia. The best results are obtained in operations below the umbilicus, and best of all on the pelvic organs. The head and shoulders should be kept well raised at all times throughout the operation and after, and all shifting or jerking of the patient should be interdicted. A minute on the side after injection seems long enough, and then the patient should be gently rolled over on the back without any sudden movement or lifting of the pelvis. The need

of care in the exact measurement and preparation of the drug cannot be too much insisted on.

5. Antral Disease.—Tilley discusses disease of the antrum in relation to general and special surgery. The general surgeon sees cases of alveolar abscess, dental cysts, malignant disease of the antrum, and necrosis of the upper jaw. Acute and chronic inflammation of the antrum is of special interest to the rhinologist and dental surgeon. Infection of the antrum may arise by way of the nasal cavities or through disease of certain teeth. Acute antral suppuration by the intranasal route is usually due to infection by the organisms of the acute specific diseases. Of these influenza is the commonest, though bad cases follow typhoid and scarlet fever. Many cases recover spontaneously, and failure to do so is usually due to hindrance to free drainage by coincident pathological conditions within the nose. A second common cause of antral suppuration is infection from a diseased tooth, an apical abscess, or suppurative periodontitis. Traumatism is a less frequent cause. Chronic suppuration within the antrum is usually the sequela of an acute attack of inflammation which has failed to undergo resolution. Such failure may be due to the virulence of the initial inflammation, to defective drainage caused by pathological intranasal conditions, or to the continuance of the initial cause of the inflammation—for example, an apical dental abscess which continues to supply infective material to the inside of the antrum. A debilitated state of the patient's general health will be a strong predisposing factor in the formation and continuance of chronic suppuration in one or more of the sinuses. The pus obtained from some cases of antral suppuration may contain organisms similar to those occurring in the mouth. Occasionally bacilli distinctive of dental caries may be isolated from the pus of an antral abscess. In cases of chronic suppuration streptococci are found in eighty per cent., as compared with sixty per cent. in more recent cases. In recent cases virulent organisms are met with twice as often as in cases of chronic suppuration. Clinical evidence supports the view that the antrum is more frequently infected by way of the nasal cavity, and this is corroborated by bacteriological investigation. When the inflammation is the result of dental infection, the offending tooth should be removed and free communication with the antrum made through the alveolus. The sinus should then be gently irrigated with a mild antiseptic solution. The opening should be kept open by means of a plug, and the irrigations performed at intervals. When antral suppuration is of nasal origin, the prognosis is less favorable. The primary constitutional disease must be suitably treated, and the local discomfort caused by the complicating acute sinusitis allayed. Locally, efforts must be chiefly directed to promoting the free and spontaneous discharge of pus from the antrum by way of the natural ostium, by: (a) Directing the patient to lie in bed with the diseased antrum uppermost; (b) the application of cocaine and adrenalin solutions to the regions around the middle meatus, this may be done every four or six hours; (c) scarification of these regions; and (d) inhalation of mentholized steam. If these means fail the antrum should be punctured through its inner wall in the inferior meatus, and irrigated.

LANCET. .lugust 22, 1908.

1. Granular Kidney, By W. B. WARRINGTON. 2. A Case of Gigantic Retroperitoneal Tumor, Intimately
Connected with the Kidney, Which Simulated Ascites
from Tuberculous Peritonitis. With a Report on

from Tuberculous Peritomus.
the Pathology of the Tumor,
By C. A. Morron and E. V. Dunkley.
3. The Alleged Discovery of Syphilis in Prehistoric Egyptians,
By G. E. Smrth.
4. A Digest of Eighty-six Cases of Epidemic Cerebrospinol Meningitis Admitted to the Middle Ward By E. Wart.
Usersital Motherwell, in 1907,
By E. Wart.

4. A Digest of Log spinol Meningitis Admitted to spinol Meningitis Admitted to Hospital, Motherwell, in 1907,

5. Thirty-five Consecutive Cases of Extrauterine Pregnancy Dealt with by Abdominal Section Without By J. Oliver.

Death, St. the Fœtus, By W. W. KING. 6. Generalized Œdema of the Fœtus,7. Case of Double Abdominal Hydrocele,

By O. RICHARDS. 8. A Case of Congenital Hypertrophic Stenosis of the Pylorus Treated Medically, By N. B. CLOWES.
9. Motoring Notes, By C. T. W. Hirsch.

I. Granular Kidney .- Warrington states that the cardinal symptoms on which a diagnosis of granular kidney is made are: (1) Cardiovascular changes; (2) ophthalmoscopic examination; (3) manifestations of chronic or acute renal toxamia; and (4) the urine. The cardiovascular changes come first in importance. In some cases the most pronounced changes fall on the vascular system, general arteriosclerosis being present, and the kidney substance being comparatively slightly affected by fibrosis. In other cases the kidney is profoundly fibrotic and greatly reduced in size and weight. The causes of arteriosclerosis are those of granular kidney-the working of products of defective metabolism, of which the two best known are gout and lead. In granular kidney the thickening of the arteries can almost invariably be recognized. High arterial tension is a normal feature of granular kidney, and when it falls, unless this is brought about by therapeusis, it indicates a condition of failure of compensation. Enlargement of the heart is usually present, and in young subjects can be readily made out, the clinical indications being displacement of the apex beat downwards and outwards, and a well localized and forcible apex beat. In older subjects the hypertrophy is not infrequently masked by the emphysema so often present in the subjects of granular kidney. Auscultation at the apex shows the first sound to be muffled and of low pitch, while the second aortic sound has a characteristic, clear, high pitched, ringing tone. Headache in granular kidnev is often a symptom of chronic toxæmia, but it may be due to the high blood pressure and the disease of the arteries. As regards the urine, the granular, "compensated" kidney behaves like that of a healthy person. A large amount of urine is excreted, and hence the specific gravity is low. Albumin is often absent altogether. Casts, though scanty in number, are nearly always present. At any stage of the disease an acute nephritis may be added to the old standing disease and may be thought to be the primary mischief. A diagnosis of uræmic asthma until the other causes of dyspnæa have been excluded; among these may be mentioned pleural effusion, bronchitis, ædema of the lungs and of the glottis. dilatation of the heart, pericarditis, and hydrops pericardii. The ophthalmoscope often confirms the diagnosis of granular kidney in obscure cases. Only

the arterial changes are absolutely distinctive of renal disease, however. The most characteristic feature is the appearance of small, glistening, woolywhitish patches often arranged in a striate fashion around the macular region. These are degenerative in nature, and are permanent. Hæmorrhages and papillitis occur, but may disappear. From the standpoint of treatment the cases may be grouped as follows: (1) The compensated kidney, where the excretion of urinary products is not greatly interfered with. Here the treatment should be chiefly prophylactic, alcohol, condiments, and strong broths and meat extracts being forbidden. (2) The acute exacerbations, where the treatment resembles that of acute nephritis. (3) The cases with cardiac failure; here the freshly made infusion of digitalis combined with some vasodilator is of special value. (4) The more chronic symptoms of renal toxæmia. (5) The hopeless cases, where the desires and tastes of the patient should be met as far as possible. For toxæmic symptoms hot rectal saline injections at a temperature of 110° F. are of great value. Morphine should not be withheld in these cases; it is invaluable for restless, painful nights with cardiac dyspnœa. It is very doubtful whether the excretion of sodium chloride has anything to do with the production of uræmia or œdema.

3. Prehistoric Syphilis.—Smith has investigated the alleged discovery of syphilis in prehistoric Egyptians by Lortet and Fouquet, based on the presence of "ulcers" on the cranial and long bones. writer holds, however, that there can be no doubt whatever that the injuries described as the result of syphilis were really produced long after death and burial and that the damage was done by small bee-

4. Cerebrospinal Meningitis.-Watt gives a short account of the symptomatology, diagnosis, and treatment of a series of eighty-six cases of epidemic cerebrospinal meningitis. The condition most frequently present was rigidity of the posterior cervical muscles. Vomiting and headache were very constant features, but muscular pains were only present in about one quarter of the cases. Kernig's sign was present in over three quarters of the cases. As regards the rash, an herpetic eruption was present in fourteen cases, a petechial eruption in sixteen cases, and an erythematous in twenty-one cases. Direct examination of the fluid drawn off by lumbar puncture showed meningococci in twenty-six out of seventy-five cases, but cultures showed the specific organism in seventy per cent. of the cases.

6. Generalized Fætal Œdema.-King reports two cases of generalized cedema of the feetus, and reviews the literature of the subject. Such ædematous children are usually born of women of about the ages of from thirty to thirty-five years who have previously had abortions or premature still births. The mother's health is rarely good, but there is no specific disease associated with the condition. Fœtal anasarca may occur in single or twin pregnancies, and may be associated with hydramnios. The labor is usually premature, but the large size of the child often causes obstruction during labor, and the friability of the tissues when present renders artificial aid difficult. While the maternal prognosis is good the children are either stillborn or live only a few hours. Subsequent pregnancies may end either normally or with premature still births, or, in a few cases, with more cedematous children. The causation is very obscure, especially in those cases where no definite mechanical circulatory obstruction exists. Post mortem examination of one of the writer's cases showed marked disorganization of the suprarenal bodies, and it is possible that the cedema can be attributed to the action of certain unneutralized products of metabolism upon the fœtal capillary endothelium.

LA PRESSE MEDICALE

The Soluble Ferments,
Consideration of Hysteria by the Société de Neurologie
de Paris. Concerning Suggestion,
By Henry Meige.

By R. ROMME. The Reactions of Anaphylaxia,

1. The Soluble Ferments.-Roger prefers to retain the term soluble ferments to denote the colloid products of cellular activity which are diffused among the elements which gave them birth and from which they can be separated by a more or less complex procedure if not in a state of purity at least in a condition which permits their study. Other synonymous terms which have been applied to these substances are diastase, enzyme, and zymase.

2. Suggestion.-Meige reports that the discussion revealed a divergence of opinions dependent largely on the interpretation of the word suggestion; some were accustomed to give it an evil signification, others were not. The definition of the word hysteria also evoked a considerable variance of opinion, and the general impression that resulted was that the term hysteria should be employed with extreme care.

July 20, 1908.

I. Acute and Subacute Tuberculosis. Concerning a Subacute Form of Tuberculous Septicæmia with Pulmonary, Pleural, Cutaneous, Periosteal, Articular, and Periarticular, Endocardiac and Pericardiac Foci, By L. LANDOUZY and L. LAEDERICH.

2. Practical Value of Percutaneous Tuberculinization by

By E. Moro. Means of Tuberculin Ointment.

1. Subacute Tuberculous Septicæmia.--Landouzy and Laederich report the case of a boy, sixteen years of age, who suffered from a subacute tubercular septicæmia with lesions in the parts indicated in the title of the paper. The skin lesion was a multiform erythema nodosum, the periosteal consisted of nodosities of the skull and of the elbow. The cardiac conditions are well shown in the accompanying illustrations.

Tuberculinazation by Inunction.—Moro notes the difference between the results obtained by this method and those of von Pirquet's method. In children presenting no clinical evidences of tuberculosis the percentage of positive reactions obtained by inunction is, on the whole, less than those obtained by von Pirquet's method. The absolute harmlessness of this method presents a great advantage over the

opthalmoreaction.

August 1, 1908.

- General Principles of the Blood Pressure and of Its Variations in the Normal Condition, By G. Weiss.
 Internal Secretions and Psychoses, By LAIGNEL-LAVASTINE.
- 1. General Principles of the Blood Pressure. -Weiss divides the oscillations of blood pressure

into three varieties: 1. Those which are periodical and produced by the pulsation of the heart; 2, those which are equally periodical, are due to respiratory movements, and spread into oscillations of the first class; 3, those which are irregular, without fixed rhythm, and spread into oscillations of the second class.

Internal Secretions and Psychoses .- Laignal-Lavastine says that the frequent coincidence of psychic troubles in glandular syndromata is a fact. Sometimes glandular trouble supervening in infancy or adolescence acts upon the development of the brain, and produces psychic troubles from anomalies of structure. Sometimes glandular trouble comparible with the existence of a relative functional capacity of the organism produces correlative modifications of varying intensity in both the organic and psychic life. Sometimes very extensive glandular trouble produces serious results in the way of intense cerebral reactions which through toxic psychoses bring about a type of mental con-The existence of glandular troubles in psychic syndromata has not as yet received the attention it deserves. Yet the presence of these troubles in certain cases cannot be denied.

August 5, 1908.

I. Pure Mitral Stenosis and Nanism, By Marcel Labbe.
2. Viscosity of the Biood and Iodine, By P. Boveri.
3. Measles and the Red Light, By Florea Simionescu.

r. Mitral Stenosis and Nanism.—Labbe says we have endeavored to refer nanism (the condition of being dwarfed) to syphilis and tuberculosis without reference to the influence of the heart, and to say that infection has caused dwarfed cardiac and vascular conditions, dwarfed teeth, malformations of the palate, and dwarfishness of the body. In order to affirm that in certain cases the nanism is the result of the cardiac lesion and not that of a general dystrophic malady this nanism of cardiac origin ought to possess characteristics which would distinguish it from nanism of syphilitic origin, but this has not yet been demonstrated.

2. Viscosity of the Blood and Iodine.—Boveri says that in his opinion one of the causes of the happy effects of iodine in diseases of the cardiovascular system is the fact that iodine diminishes

the viscosity of the blood.

3. Measles and Red Light.—Simionescu asserts that probably the active agent of measles and its toxine lose their pathogenic properties rapidly under the influence of red light. The red light works differently from a serum and has a strong abortive action. The patient presents a simple feverish state that quickly disappears. Even one of the most dreaded complications, bronchopneumonia, is both benefited and cured by this treatment. The reason given is that the bronchopulmonary complication is due to the measles eruption appearing on the tissue and parenchyma of the lungs. Future observation is necessary to give us the solutions of the mechanism of phototherapy.

LA SEMAINE MEDICALE. August 5, 1908.

Proceedings of the French Congress of Alienists and Neurologists, held at Dijon, August 3 and 4, 1908.

. Internal Secretions and Psychoses,

By LAIGNAL-LAVASTINE.

2. Clinical Forms and Diagnosis of Neuralgias,
By Verger.

classifies facial neuralgias thus: 1. The neuralgic pain is continuous with or without paroxysms, and when paroxysms are present they have less intensity and frequency than in the other types. 2. The pain is spontaneous and submits quite readily to the modifying influence of functional excitation or of efforts to move the face and jaws. 3. The pain roused by pressure upon the painful zone, when such a zone exists, is generally slight, with the exception of the neuralgia symptomatic of sinusitis, where one often observes cutaneous hyperæsthesia. It is rarely localized with the precision of the points of Valleix, but is rather a painful zone than points of pain. In the group of chronic neuralgias there is a certain number of cases which have been confounded with tic douloureux. These are obstinate to therapeutical treatment, as is also epileptic neuralgia with which they must never be confounded. Their principal characteristics are: 1, The existence of a continuous pain between neuralgic paroxysms situated in a more limited zone than the territory of the distribution of the corresponding nerve. 2. The likelihood of causing paroxysms by talking and eating. 3. The constant pain produced by pressure upon the painful zone. 4. The frequent existence of pain upon pressure on the points of Valleix. 5. The temporary cure of the pain and paroxysms by the injection of cocaine in the locus Facial neuralgias of radiculoganglionic origin are of two sorts: I. Symptomatic neuralgias from inflamed or neoplastic lesions of the Gasserian ganglion, or of the sensitive root of the trigeminus. 2. Neuralgias corresponding to the clinical type of epileptiform neuralgia, whose character is not yet well known, but it is certain that their organic cause must be sought for beyond the extremities and even beyond the nerve trunks themselves. Verger goes on further to speak at length on neuralgia due to syphilis, tabes, tic douloureux, thoracic neural-gias of peripheral origin, thoracic neuralgias of radiculoganglionic origin, and neuralgias of the lower end of the upper limbs. His article deserves careful reading in the original.

2. Clinical Forms of Neuralgias. - Verger

ZENTRALBLATT FUR INNERE MEDIZIN. August 1, 1908.

The Antifermentative Reaction of the Blood,
By Wiens.

I., Antifermentative Reaction of the Blood.—Wiens concludes that every debilitating disease, such as cancer and tuberculosis, leads to an increase of the antiferment content of the blood and to an increase of the inhibitory power of the serum. As this phenomena occurs in every tissue wasting disease, its occurrence is not specific, and it has no particular diagnostic value. If an improvement takes place in the course of the disease, the antiferment content diminishes, the changes being much more marked in the acute infectious diseases than in the chronic ones. These changes seem to bear a definite relation, in the acute infectious diseases, to the opsonic index.

ZENTRALBLATT FUR CHIRURGIE. August 1, 1908.

I. The Treatment of Septic and Pyæmic General Infections, By P. Sick.

r. Treatment of Sepsis.—Sick highly recommends the use of iodipin as a remedy in general sep-

tic conditions. There is a rapid fall of temperature followed by a rapid improvement in the general condition. These results have been noted especially in cases of puerperal sepsis and phlegmonous inflammations, anthrax, and postoperative pneumonia. Sick does not regard the drug as a specific agent, but thinks it is a valuable adjuvant in the treatment of the septic forms of disease.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of Wednesday, February 26, 1908. The President, Dr. A. M. Eaton, in the Chair.

Hour Glass Contraction of the Stomach.—Dr. JOHN J. GILBRIDE exhibited a specimen which had been removed from the cadaver of a male. contraction had followed the healing of an ulcer. The stomach was divided into two pouches. greater curvature was drawn upward toward the lesser curvature and the opening of communication between the pouches would admit of the introduction of two fingers. The stomach was firmly bound down by adhesions to the posterior abdominal wall on the left side. It was stated, said Dr. Gilbride, that in some instances the viscera might be constricted in two or more places, thus forming two, three, or four pouches. The most common form met with was that in which the stomach was divided into two pouches. Movnihan and others had recorded examples in which the lesser curvature was drawn downward, while the greater curvature was normal in outline.

Ether Anæsthesia.—Dr. Collin Foulkrod believed that the teaching of ether anæsthesia should begin in the second or third year of student life, when groups of two or three men should be trained at the head of the operating table. Ether alone had best stood the test, and it should be given drop by drop on gauze in an insistent manner. The most important factor in preventing shock he believed to be the abolition of fear on the part of the patient. Ether anæsthesia could be made a gradual falling to sleep, and barely enough for the operation should be given. The best guides as to the depth were the breathing and the sensitive pupillary reflex. If the jaw was held forward, shock was eliminated, less ether was required, and the patient was less tired. The abuse of ether and mixed anæsthetics, because of lack of careful, experienced men, he regarded as one of the greatest stigmata upon present day sur-

The Anatomy of the Accessory Sinuses of the Nose, with Special Reference to their Suppuration. Dr. Ross Hall Skillers exhibited a series of lantern slides, the majority of which were photographs of the anatomical preparations of Professor E. Zuckerkandl, now in the Anatomical Institute in Vienna. Dr. Skillern reviewed briefly the anatomy of the lateral wall of the nose in relation to the sinuses. This was followed by the diagnosis between empyema of the sinuses of the first series. The anatomy and suppuration of the sinuses of the second series were then taken up. The demonstration ended with the exhibition of the more common forms of anomalies met with in this region.

Congenital Absence of the Ulna .- Dr. FRANCIS

D. Patterson presented this paper, with the exhibition of the patient and a review of the literature.

The Frequent Necessity of Multiple and Consecutive Operations for Renal Calculi.-Dr. W. WAYNE BABCOCK reported seven cases, indicating the feasibility of operating upon both kidneys at the same time or of doing repeated operations upon the same kidney.' Upon one of the patients bilateral nephrotomy had been done for calculous disease; a year later bilateral nephrolithotomy; at a later time drainage and nephrectomy; finally, from the remaining kidney five stones had been removed. Two years later the patient was active and fairly vigorous. The second patient had six consecutive operations for recurrent calculous disease and pyelonephrosis, and after bilateral nephrostomy, and wore catheters in the kidneys for a year and a half. Finally, the patient came under the author's care. One kidney was removed, the opposite ureter catheterized, and the nephrostomy drainage abolished. Following this the urine cleared and the patient gained over twenty pounds in weight. In all, twenty-five operations were done upon the seven patients for the symptoms produced by stone, with one death. The author concluded that, in the absence of infection, bilateral consecutive operations upon the kidneys were well borne. Nephrolithotomy, especially when done in the presence of pyelitis, for large and crumbly or for multiple calculi, was frequently followed by the renewed formation of stone in the kidney. Nephrotomy gave better late results than pyelotomy. Nephrostomy might not only fail to cure or prevent pyelonephrosis or recurrent nephrolithiasis, but might even favor these conditions. In operating for simple calculous disease of the kidneys, drainage through the loin should, if feasible, be avoided or used only temporarily and with the most rigid aseptic precautions. In bilateral or consecutive operations upon the kidney, spinal anæsthesia by tropacocaine or stovaine was to be preferred.

Meeting of Wednesday, March 25, 1908.
The President, Dr. A. M. EATON, in the Chair.
PSYCHOTHERAPEUTICS.

Psychotherapeutics: its Methods, Scope, and Limitations.—Dr. CHARLES K. MILLS briefly discussed this subject. The story of psychotherapy, he said, was an old one, but was being retold by new raconteurs, with a few additions of value and with many trimmings and adornments. The terms psychic medicine and mystic medicine were not absolutely interchangeable. In a certain sense mystic medicine—the medicine of the savages, of the oracles, of Mrs. Eddy, of the shrine of whatever sorthad in it the psychic element. It appealed to the superstition or the imagination of the individual, playing upon either his normal or his abnormal suggestibility. The psychic medicine in which the doctor should be continuously interested was one in which the use of mental influence for the relief or cure of disease was resorted to on the same scientific principles as was the use of water, medicine, electricity, the surgeon's knife, or the forceps of the obstetrician.

The accepted psychotherapeutic methods of today were considered under the heads of (1) the use of hypnotic procedures, (2) the appeal to suggestibility in the waking state, and (3) the resort to educational or persuasive measures. Dr. Mills was decidedly of the opinion that suggestion in patients in the state of profound hypnosis should not be resorted to, except in a very few extreme cases of hysteria, in which it should be used on the principle that, of two evils we should choose the lesser. The use of suggestion in the waking state was commended, with some qualifications, however, as, like suggestion under hypnosis, it occasionally might result in harm. The suggester, however serviceable he might be to his suffering patient, did not always effect a permanent cure. The truth was not as Du-Bois expressed it, that one was cured as soon as he believed he was cured, but that he was cured when the conditions which had caused and which tended to reproduce his sickness had been removed. In this era of the exploitation of psychic medicine, the community, and even the profession, had been carried beyond the confines of reason. With regard to the admixture of religion and medicine for the purposes of healing, it should be said that in medicine, as in religion, faith was often essential. Harm was done, not alone to the community and to the medical profession, by the psychotherapeutic efforts of enthusiastic but misled clergymen, but eventually to religion itself. Every neurologist of any considerable experience had had pass through his hands many cases of uncured disease in individuals of deep religious sentiments, who had called in their extremity upon Christian Science or some similar healing cult, and, failing to receive the benefit for which they had been led to hope, had lost their faith, not only in the efficacy of the cult to heal, but also in its efficiency in matters purely spiritual. The strongest and wisest opponents of faith cures and divine healing and all similar therapeutic methods or organizations were those who, misled by great promises consciously or unconsciously made, had come back to be cared for and treated by those who only professed for themselves the powers which were given to them by scientific study and by experience with disease.

The Use of the Mental Element in the Treatment of Disease.—Dr. CHARLES W. BURR referred to the value of the personal element in therapeutics, and divided psychotherapeutics into education, encouragement, waking suggestion, suggestion under the hypnotic state, and those occult and mystical and so called religious means of cure. He separated encouragement from suggestion, because in encouragement there was simply a logical talk with the patient, showing him his error in what he thought about himself, showing him that in very truth his condition pointed toward a cure. In waking suggestion the attempt was made to act upon the patient's "unconscious mind," causing him to create in his own mind, without knowing that the physician had caused it, a feeling of well being in the future.

In nervous conditions suggestion was regarded as one of the most valuable agents, but it also was capable of great harm. The case was cited of a patient who was doing well, but who had been receiving suggestions from her nurse toward diseases rather than toward health. Concerning hypnotism in general, it was said that there was no subject in science in which it was more difficult to attain the truth than in this study. Much had been written upon it by people who had not the slightest idea of how to weigh evidence. That the student was en-

tirely at the mercy, not only of the integrity but of the intelligence of the emlpoyer of hypnotism was another difficulty in the study of the subject.

Regarding the occult means of treatment, Dr. Burr believed that there was rapidly growing up in this country a superstition intellectually as gross as had ever appeared in the world's history. The reason for this superstition was too deep a subject for present solution. While the basis of the occult means of treatment was suggestion, they differed from the suggestion used by the physician in that they alleged some power outside the physician himself as being the thing that did the work, and in this in a measure approached the witchcraft of olden times. One evil of the practice of occult means was that persons who could be cured by physical means, if treated promptly, were rendered incapable of cure by the delay. As to the religious element in therapeutics, Dr. Burr believed it would be a very dangerous practice for a religious body to attempt the cure of sick people without constant medical advice.

An Analysis of Psychotherapeutics.—Dr. F. X. DERCUM considered the methods of psychotherapy under the following heads: General methods, including mental rest, mental exercise, and mental gymnastics; special methods, including normal suggestion, direct and indirect; hypnotism and suggestion under hypnotism; and the psychoanalytic method of Breuer and Freud. The advantages of the legitimate use of the general methods and of normal suggestion were dwelt upon and commended. Treatment by hypnotic methods was discountenanced on the ground that hypnotism was simply the artificial induction of an hysterical state, and that the affection from which the patient already suffered was thus compounded with hysteria. The fallacies upon which the psychoanalytic method was based were pointed out, as were also its objectionable features. Freud's theory of the origin of the obsessions through passionate acts of sexual aggression during childhood was considered and its absurdities were dwelt upon. The writer further pointed out that all the functional nervous derangements were characterized by a more or less marked impairment of the general health, that they were more or less the expression of asthenic states, and that improvement in the nervous symptoms ensued upon an improvement of the general health. He also pointed out the advantage of the employment of the general psychotherapeutic measures, such as were embodied in rest, isolation, restraint, etc., while efforts to improve the general health were being carried out.

Book Motices.

III'e publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are I bely to be interested.]

Movable Kidney. Its Pathology, Symptoms, and Treatment. By Harold W. Wilson, M.B., B.S., Lond., F.R.C.S., England, Demonstrator of Anatomy and Chief Assistant in the Surgical Out Patient Department, St. Bartholomew's Hospital, etc., and C. M. Hinds Howell, M.A., M.B., B.Ch. Oxon, M.R.C.P., Lond., Junior Demonstrator of Physiology, Late Casualty Physician, St. Bartholomew's Hospital, etc., With Illustrations. London: Edward Ainold, 1008. Pp. 104.

The authors invite attention to the history of this condition, apparently described first by Mesue, of Venice, in 1561, next by Franciscus Pedemontanus in 1581, then in 1682 by Riolan, who pointed out the important part played in the production of the condition by the rapid diminution of the perinephric fat. In 1839 Pierre Rayer gave a full account of the condition and its symptomatology, and his was followed by Laudan's important work. In 1881 Hahn recorded two successful cases of lumbar fixation of the kidney, naming the operation nephrorrhaphy.

The authors believe that the frequency with which movable kidney occurs has been exaggerated, because the statistics have included kidneys that were palpable, and this was possible in sixty per cent. of the women in the surgical and gynæcological wards at St. Bartholomew's Hospital, although in none of them could abnormal renal mobility be said to exist. The chief characteristics of movable kidney are: I. Increased respiratory excursion. 2. Change of position (accompanied by mobility), including under this heading, a, prolapse, b, rotation of one or other pole, and, c, a combination of a

and b.

The anatomical points are described that are important to maintain the kidneys in proper position; and because the renal fossæ are wider and shallower in women than in men, because women suffer more from chronic constipation, and because of tight lacing, the condition is more frequently found in that sex. The kidney may become movable as a result of the rapid absorption of the capsula adiposa with consequent renal prolapse. Or mobility may be increased, with anterior and inward displacement, either (a) by bulging of the perinephric fascia, or (b) by loosening or stretching of the perinephric attachments to the vertebral column. Or, in traumatic cases, mobility is caused by rupture of the true suspensory ligament of the kidney. The pathological changes in the organ due to either clinical or experimental mobility are described; and the physical examination and symptoms, the diagnosis, and the treatment are reviewed. The authors urge that it is not only desirable but necessary to restrict operations to carefully selected cases, a dictum advanced by Treves and an advisable change from the furor secandi of some operators. The four classes of cases in which nephrorrhaphy is advised have been considered with care, and in each the operation is justified. There is a good description of the method of operation. The text is well illustrated, and the monograph is a valuable addition to the literature of this important condition.

Essentials of Dietetics in Health and Disease. A Textbook for Nurses and a Practical Dietary Guide for the Housefor Nurses and a Practical Dietary Guide for the House-hold. By Amy ELIZABETH POPE, author, with Anna Caroline Maxwell, of Practical Nursing, and Instructor in Practical Nursing and in Dietetics in the Presbyterian Hospital School of Nursing, etc., and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, N. Y. New York and London: G. P. Putnam's Sons, 1908. Pp. x-249.

The really practical part of this book seems to us excellent, including the lists of articles allowed and of those prohibited in various morbid states, also the portion devoted to cookery. There is perhaps rather too much of the didactic, but it is fairly well done. The following passage (page 69) strikes us as a delicious piece of generalizing: "In all animals the parts that have had the most exercise in life, e. g., the neck, the legs, especially the lower part, and around the tail, are the toughest, but have the most nutriment and are the most juicy." A most commendable hint is given in this statement (page 25): "In health a food is not necessarily indigestible because it requires three or three and a half hours for digestion." We are glad to learn that onions are "good blood purifiers," and that letthat onions are "good blood purifiers," and that let-tuce, endive, escarole, chickory, and romaine are "cooling," but we regret that eels are omitted from the list of fishes.

Our authors might have been more careful in the matter of diction. On page 141 we are told that "rickets are due," etc. This reminds us of the professional funny man's question "Have you had the measles, and if so how many?" We were not aware that the title of the S. R. Smith Infirmary had been changed to "Smith's Infirmary" (see the title page).

BOOKS, PAMPHLETS, ETC., RECEIVED

The Problem of Age, Growth, and Death. A Study of Cytomorphosis Based on Lectures at the Lowell Institute, March, 1907. By Charles S. Minot, LL.D. (Yale, Toronto), D. Sc. (Oxford); James Stillman Professor of Comparitive Anatomy in the Harvard Medical School, etc. Illustrated. New York and London: G. P. Putnam's Sons, 1908.

tive Anatomy in the Harvard Medical School, etc. Illustrated. New York and London: G. P. Putnam's Sons, 1908. Pp. x-274

The Law in General Practice. Some Chapters in Every Day Forensic Medicine. By Stanley B. Atkinson, M. A., M. B., B. Sc., of the Inner Temple, Barrister at Law; Justice of the Peace for the County of London, etc. London: Henry Frowde and Hodder & Stoughton (Oxford University Press), 1908. Pp. viii-239.

Textbook of Physiological Chemistry in Thirty Lectures, By Emil Abderhalden, o. Professor für Physiologie des physiologischen Instituts der tierärztlichen Hochschule, Berlin, und Universitäts-Professor. Translated by William T. Hall, Instructor in Chemistry, Massachusetts Institute of Technology, and George Defren. First Edition, First Thousand. New York: John Wiley & Sons, 1908. Pp. xiii-722.

Diseases of the Spinal Cord. By R. T. Williamson, M. D. (Lond.), F. R. C. P., Assistant Physician, Royal Infirmary, and Lecturer in Medicine, Victoria University, Manchester. With One Hundred and Eighty-three Illustrations and Seven Plates. London: Henry Frowde and Hodder & Stoughton (Oxford University Press), 1908. Pp. xi-432.

Glandular Enlargement and Other Diseases of the Lymphatic System. By Arthur Edmunds, M. B., M. S., B. Sc. (Lond.), F. R. C. S. (Eng.), Surgeon to the Great Northern Central Hospital, etc. London: Henry Frowde and Hodder & Stoughton (Oxford University Press), 1908.

and Hodder & Stoughton (Oxford University Press), 1908. Pp. vii-230.

Miscellany.

Postgraduate Medical Classes .- It would appear that the Glasgow Royal Infirmary has exceptional facilities for clinical teaching. The indoor daily residence averages 600 patients, and during the year 1907 over 9,000 indoor cases were treated, while more than 50,000 were dealt with in the outdoor and special departments. Including all the attendances, the enormous number of 187,000 came in view during the year. With this large amount of clinical material, the staff have exceptional facilities for demonstrating disease in all its aspects, and it is thought that when the new hospital buildings are completed, the facilities for practical teaching will be unsurpassed by any institution in the United Kingdom. During the last four years carefully arranged postgraduate classes have been conducted, and that they have been fully appreciated and taken advantage of by the profession is shown by the very satisfactory attendances. The classes have not been made up solely of practitioners in the city and neighborhood of Glasgow, but many have traveled long distances in order to benefit by the teaching.

NEW REMEDIES

In order to satisfy a demand for information regarding the additions to our materia medica, the following notes on new remedies have been compiled from the various journals of medicine and pharmacy published in this country and in Europe. Modern chemical synthesis is constantly adding to the number of extrapharmacopeial remedies, and the sources of information regarding them are not readily accessible to practising physicians, being scattered through a mass of literature and entailing considerable research. It is intended to publish these notes regularly, and in this way keep the medical profession informed regarding remedies of recent introduction.

Iodomenine is an iodoalbumin compound with bismuth, which is said to part readily with its iodine and to remain unaltered in the presence of acid liquids. It is, however, quickly decomposed by alkalies in dilute solution, to form the corresponding alkali iodide and bismuth albumin. It is intended as a substitute for the alkali iodides ordinarily prescribed, and is put up in tablets containing the equivalent of the iodine contained in one grain of potassium iodide, the dose being one to three tablets three times daily.

Menstrual Blood, the antiseptic properties of which have long been known, has recently been recommended as an application for the treatment of chancroid (Petersburger medizinische Wochenschrift, 1907, No. 19, through Pharmazeutische Zentralhalle).

Arterenol Hydrochloride has been introduced to take the place of the various preparations of the suprarenal gland, having, it is asserted, the same therapeutic action as adrenalin and analogous compounds, with considerably less toxic action, which makes it possible to give it in larger doses. It is the hydrochloride of aminoethanol pyrocatechin, and forms small, white, odorless crystals, readily soluble in water, but sparingly so in alcohol. It is marketed in the dry form as well as in that of a one in one thousand solution. The aqueous solution produces a slight anæsthetic effect when placed upon the tongue.

Homorenon Hydrochloride is an analogous compound with arterenol hydrochloride, and is chemically defined as ethylaminoacetpyrocatechin hydrochloride. It forms a white powder readily soluble in water and is intended to be given in five per cent. solution in place of the usual one in one thousand solution of adrenalin hydrochloride.

Quinine Anhydromethylene-Citro-Disalicylate is a compound of quinine and novaspirine which contains more salicylic acid and less quinine than quinine salicylate and quinine acetylsalicylate. There are two chemical combinations of quinine and novaspirine which form white, bitter powders insoluble in water, but easily soluble in alcohol. One is an

acid salt containing thirty-six per cent, of salicylic acid and forty-two per cent. of quinine, while the other, which is made from neutral quinine sulphate, and has the same therapeutical properties as the other, contains a lesser quantity of salicylic acid and a correspondingly higher amount of quinine, the proportions being twenty-five per cent. and fifty-nine per cent. respectively. The quinine salicylate ordinarily employed contains thirty per cent. of salicylic acid and seventy per cent. of quinine, while quinine acetylsalicylate is composed of twenty-seven per cent. of the acid and sixty-four per cent. of the base.

Morphosan is a name that has been recently adopted for morphine methylbromate, a morphine substitute of less toxic and habit forming properties than the natural alkaloid. It is not very soluble in cold water, but dissolves readily in hot water. In five per cent. solution it is given in doses of twenty drops by the mouth. Hypodermically it is administered in doses of one twelfth to one sixth of a grain several times daily.

Allosan has been introduced as a potent succedaneum for sandalwood oil, and is stated to be a solid, crystalline, almost tasteless ester of allophanic acid with santalol. It is understood to have the same therapeutic action as santalol, of which it contains seventy-two per cent., and not to cause eructation.

Sodium Vanillate and Cocaine.-A combination that is reported to be of special service for dental and other minor surgical operations is a combination of sodium vanillate and cocaine in solution. Sodium vanillate acts as a local anæsthetic and exerts a vasodilator effect, while cocaine has a vasoconstrictor action. It has been found that when a solution of sodium vanillate and cocaine is employed, the anæsthetic action of the cocaine is increased and its vasoconstrictor properties are modified. The union of both bodies is said to form a double chemical compound. The following formula for the combination is from a French source, the verbena water ordered in it being intended as a preservative: Cocaine alkaloid, gr. 1/6; sodium vanillate, gr. 1/6; verbena water, minims 15.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending September 4, 1908:

Smalloox—United States.

| Places. | | | | Cases. | 1 |
|-------------------------|--------|--------|-------|---------|---|
| California-San Francis | e | \ug. | 16-22 | - 4 | |
| Indiana-Indianapolis | | Aug. | 17-23 | . 1 | |
| Kansas-Kansas City | | \ug. | 16-22 | . [| |
| Kansas-Topeka | | \ug. | 16-22 | . 1 | |
| Kentucky-Covington | | \ug. | 23-29 | . 1 | |
| Minnesota- Minneapolis. | | July | 1-31 | 4 | |
| Missouri-St. Joseph | | Aug. | 16-22 | . 7 | |
| Montana-Eutte | | Vug. | 12-18 | τ | |
| North Carolina-Greensl | 3 35 1 | \114Y. | 16-22 | . 1 | |
| Ohio-Cincinnati | | 1115 | 22.28 | . 1 | |
| Ohio-Dayton | | | | | |
| Utah-General | | lulv | 1-31 | 10 | |
| Washington-Seattle . | | hily | 1 31 | 1.0 | |
| Wisconsin-La Crosse | | lug. | 16-22 | 5 | |
| Wisconsin-Milwanker | | Ving. | 0.22 | . 3 | |

| Smallpox Poreign. | |
|--|--------------|
| Ca | ses. Deaths. |
| Arabia—Aden July 26-Aug. 3 | 4 |
| Brazil-Rio de Janeiro July 13-20 | |
| Brazil-Pernambuco July 1-15 | 26 |
| Brazil—Santos July 6-19 | 6 |
| China-Horgkong July 12-18 | I I |
| China—Shanghai | 1 |
| Ceylon—Colomboluly 12-18 | 4 |
| Ecuador-Guayaquil July 19 25 | 6 |
| | 28 8 |
| Egypt—CairoJuly 31-Aug. 5 | 2 2 |
| France-ParisAug. 2-8 | 3 |
| Germany—GeneralJuly 19-25 | 5 |
| Germany—Chemnitz | 1 |
| Germany—Konigsburg Aug. 2-8 | 1 |
| Great Britain-LiverpoolAug. 9-15 | 1 |
| India-Calcuttaluly 12-18 | 8 |
| | LI |
| Italy—PalermoJuly 5-Aug. 1 | 7 1 |
| Java—Batavia | |
| Mexico-Mexico CityJune 28-July 11 | 49 |
| Philippine Islands-MamlaJuly 5-11 | 21 3 |
| Spain—Valencia\ug. 9 15 | 1 1 |
| Turkey in Asia-BagdadJuly 13:18 | 20 4 |
| Turkey in Europe-Constantinople. Aug. 3-16 | () |
| ZanzibarJuly 8-21 | 1 1 |
| Chelera—Foreign, | |
| | |
| Ceylon-ColomboJuly 12-18 | 2 2 |
| | 10 0 |
| India—BombayJuly 1-30 | 1.2 |
| India—CalcuttaJuly 12-18 | 10 |
| India—Madras July 18-24 | 1.5 |
| India—RangoonJuly 12-18 | 1 |
| Russia—Astrachan. July 22-31. Russia—Zaritzyne. July 24-Aug. 6 | 1 2 |
| Russia - ZaritzyneJuly 24-Aug. 6 | 96 - 5 |
| Russia - Samara, Sanbusk and | 73 |
| Tamboy government districtsJuly 19-31 | Present |
| Yellow Fever-Foreign. | |
| Brazil-BahiaJuly 16-22 | 3 |
| ()n en Italian back | J |
| Brazil-ParaJune 25-Aug. 6 | 8 7 |
| Equador—Guayaquil July 10.15 | 1 |
| Martinique—Fort de France Aug. 2:8. | 2 1 |
| Martinique—Fort de France Aug. 2-8. Mes aco—Vera Cruz Aug. 22-28. | 1 1 |
| | |
| Pla ,uc—Foreign. | |
| Brazil—Rio de JaneiroJuly 23-29 Brazil—Rio de JaneiroJuly 13-19 | I |
| Brazil-Rio de JaneiroJuly 13-19 | 2 |
| China—HongkongJuly 12-18 | 20 20 |
| India—Generalluly 5-18 | 14 834 |
| India—BengalJune 28-141v 18 | 54 54 |
| India—Bombay. July 8-21. India—Calcutta. June 28-July 18 | 67 |
| India-CalcuttaJune 28-July 18 | 69 |
| India - Rangeon June 28 July 18 | 137 |
| Mauritius May 1-31 | 1 1 |
| Turkey in Asia—BagdadAug. 2-8 | I 2 |
| Venezuela-CaracasJuly 25-Aug. 9 | 7 4 |
| | |
| A T t - 11: | |

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending September 5, 1908:

ARTHUR, W. H., Lieutenant Colonel. Appointed a member of the examining board to meet at Washington, D. C., for promotion of medical officers.

ASHFORD, M., First Lieutenant. Ordered to proceed from Washington Barracks, D. C., to camp of instruction, Fort Benjamin Harrison, Ind., and rejoin Company C, Hospital Corps

BAILY, H. H., Captain. Ordered, in addition to present duties at Fort Myer, Va., to make the necessary sanitation to present duties at Fort Myer, Va., to make the necessary sanitation to the clarifold. tary inspection of the rooms occupied by the clerical force of the War Department, during the absence of Major Paul F. Straub, Medical Corps

BIRMINGHAM, H. P., Lieutenant Colonel. Relieved from duty as a member of the examining board for promotion of medical officers, to meet at Washington, D. C.

Brewer, I. W., First Lieutenant, Medical Reserve Corps. Granted thirteen days' leave of absence.

CARTER, W. F., Major. Leave of absence extended one

COFFIN, J. M., Captain. Leave of absence extended one month.

DAYWALT, G. W., First Lieutenant, Medical Reserve Corps.
Ordered to proceed from the Depot of Recruits and Casuals, Angel Island, Cal., to the Presidio of San

Francisco, Cal., for temporary duty.

Jones, H. W., First Lieutenant. Granted three months' leave of absence, to take effect about January 15, 1909, upon the arrival of the transport Buford at Manila, He is authorized to return to the United States via Asia and Europe.

Mason, C. F., Major. Appointed member of a board of officers to meet at Pittsburgh, Pa., for the purpose of examining the plant for the purification of water by ozone now in operation at the Homeopathic Hospital in that city.

RHOADS, T. L., Captain. Orders for examination for promotion at Manila, P. I., revoked.
ROBERTS, E. E., First Lieutenant, Medical Reserve Corps.

Relieved from duty at Fort Logan H. Roots, Ark., and

will proceed to Fort Sill, Okla., for duty.

Wertenbaker, C. I., First Lieutenant, Medical Reserve
Corps. Relieved from duty at Madison Barracks, N. Y.,
and ordered to Fort Wadsworth, N. Y., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending September 5, 1908:

ELY, C. F., Passed Assistant Surgeon. Detached from the Hartford and ordered to the Charleston.

HAYWARD, A. B., Assistant Surgeon. Detached from the

Marine Recruiting Station, Pittsburgh, Pa., and or-

dered to the National Recruiting Station, Dallas, Tex. MAYERS, G. M., Passed Assistant Surgeon. Granted sick leave for three months, when discharged from treatment at the Naval Medical School Hospital, Washing-

ton, D. C.

Moran, C. L., Assistant Surgeon. Detached from the
Naval Recruiting Station, Dallas, Tex., and ordered to
take a course of instruction at the Naval Medical
School, Washington, D. C.

Births, Marriages, and Deaths.

Koerper.—In Washington, D. C., on Friday, August 28th, to Captain C. E. Koerper, Medical Corps, United States Army, and Mrs. Koerper, a son.

Married.

BLOODGOOD—HOLT.—In New York, on Tuesday, September 1st, Dr. Joseph Colt Bloodgood, of Baltimore, and Miss

LEVINGS-REILLY .- In Milwaukee, Wisconsin, on Sunday, August 27th, Dr. A. Hamilton Levings and Miss Grace Marion Reilly.

Long-Susser.-In Buffalo, on Friday, August 28th, Dr. H. C. Long, of Cleveland, and Miss Lillian L. Susser.

Albright.-In Hatfield, Pennsylvania, on Sunday, August ALBRIGHT.—In Hatheld, Pennsylvania, on Sunday, August 30th, Dr. I'tlus Albright, aged forty-eight years.

Andrew.—In Vineland, New Jersey, on Monday, August 31st, Dr. A. C. Andrew, aged ninety-three years.

Bartholomew.—In Denver, on Thursday, August 24th, Dr. H. B. Bartholomew, aged forty years.

Bowen.—In Chicago, on Tuesday, August 29th, Dr. Mary

H. Bowen, aged seventy-four years.
GARDNER—In Fulton, Kentucky, on Friday, August 25th.
Dr. John L. Gardner, aged sixty years.
Hodge—In London, Ontario, Canada, on Saturday,

August 26th, Dr. George Hodge, aged sixty-eight years.

Honge.—In Henderson, Kentucky, on Sunday, August 27th, Dr. Joseph Anthony Hodge, aged seventy-nine years. Holt.-In Philadelphia, on Monday, August 31st, Dr.

Jacob Farnum Holt, aged seventy-seven years.

Johnson.—In Grand Rapids, Michigan, on Thursday,
September 3d, Dr. George K. Johnson, aged eighty-six

Neel.—In Gloucester, Massachusetts, on Monday, August 31st, Dr. William D. Neel, of Chicago, aged fifty-eight

years.
Phillips.—In Goshen, New York, on Tucsday, September 1st, Dr. Edgar L. Phillips, aged eighty-one years.
Rustin.—In Omaha, Nebraska, on Wednesday, September 2d, Dr. Frederick T. Rustin, aged thirty-seven years.
Saykes.—In Eckman, West Virginia, on Thursday, September 3d, Dr. A. H. Sayres, of Bluefield, West Virginia.
Washburn.—In New York, on Thursday, September 3d, Dr. U. Leroy Washburn, aged fifty-nine years.
Wheelers.—In Wolf Lake, Michigan, on Tucsday, August

WHEELER.-In Wolf Lake, Michigan, on Tuesday, August 20th, Dr. Legrand Wheeler, aged seventy six years

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WHOLE NO. 1555.

Original Communications.

THE EXPLOSION OF THE THEORY OF HEREDITY.

By A. Lapthorn Smith, B. A., M. D., M. K. C. S. (England),

Montreal, Canada,

Surgeon in Chief of the Samaritan Hos ital for Women: Gyn.ecc' gist to the Western General Hospital; Formerly Professor of Gynæcology in the University of Vermont, etc.

It was quite natural that the people of three thousand years ago should have thought that all the qualities and accidents which befell the race were due to hereditary transmission. They saw the offspring of each animal and plant around them resembling its ancestors down to the most minute details, while the changes which took place in any species as the result of altered environment, such, for instance, as the loss of the hind legs of the whale and the seal when they became water animals, occurred so slowly that they were not able to observe them. Even in our own time, when breeding of animals has become a science, and when a colt can be produced with extremely thick, strong legs, for going slowly, or long and thin ones for great speed, and a cow can be produced which will give a large quantity of milk or cream, according to the breed of the father, it is no wonder that people have grown to think that everything depends on heredity, and that little or nothing depends on environment. idea, which is quite correct and of great commercial value when applied to the breeding of plants and animals, is quite erroneous and most unfortunate when applied to mental and physical disease. The idea, for instance, that tuberculosis was hereditary and unavoidable has cost millions of lives which are now being saved because the whole world has discovered that the disease is contagious and preventable. But this change in opinion did not come by chance; indeed, it was opposed by many of the ablest pathologists long after it had been generally accepted by the profession and widely suspected by the public. Those who stoutly maintained that tuberculosis was contagious had to swim against the stream of medical opinion long after Koch had discovered the contagious bacillus. The same thing exists now with regard to cancer as existed twentyfive years ago with regard to consumption. The insurance companies, which employ thousands of doctors to eliminate hazardous lives from their business, have laid great stress on the importance of inquiring into the heredity of the applicant, but have never asked any questions as to their having been

exposed to the contagion of consumption and cancer. While a wonderful and beneficent change has come over public opinion with regard to consumption, the views held as to cancer and insanity have remained almost where they were a hundred or two hundred years ago. And yet I believe that I can prove that cancer is not hereditary at all, any more than insanity and drunkenness are, and to remove the mental suffering of those whose parents have acquired these diseases is the principal object of this paper. Moreover, as long as cancer, insanity, and drunkenness are believed to be hereditary, no efforts will be made to prevent them. Those who have had such parents will simply sit down and fold their hands and wait for the inevitable blow to fall upon them.

Let us, then, begin with an inquiry as to the cause of cancer. That it is worth while inquiring into is evident from the fact that, according to the census of 1890 it destroyed 18,536 lives in the United States alone. Ten years later the number reached 29,475, or nearly one third more. One out of every twelve women who die after forty-five and one out of every twenty-one men are killed by it. In the whole of the United States it killed in the year 1900, 11.346 men and 18.039 women. All over the world, in fact, it has increased about thirty per cent. during one decade. What is responsible for this awful sacrifice of human life? Without hesitation I must say that it is due to the terrible mistake which has been made of considering as hereditary and unpreventable a disease which is highly contagious, and which, consequently, could be eradicated from off the face of the earth within the next ten or twenty years. One of the first steps, therefore, is to educate the public out of this most unfortunate tradition of heredity.

It is strange that the contagiousness of cancer has not made more headway during the last twenty years, for such men as Shrady, of New York, and McEwan, of Glasgow, so long ago as twenty years. said: "Cancer is essentially a local disease, and the opinion that it is a constitutional or hereditary one is productive of the most dire results." The writer, during the last thirty years, whenever he has met with a case of cancer, has taken great pains to ascertain whether the father and mother of the patient had suffered from it; the result of his inquiries has been that it was quite the exception to find any sign of heredity. In order to ascertain whether other practitioners had had the same experience he wrote to several medical journals asking their readers to communicate with him on this point. Fifteen physicians replied, giving reports of over fifty cases of death from cancer in their practice, not one of which had a cancerous father or mother, or even a grandfather or grandmother who had died from cancer. Another doctor wrote: "I do not think one case in ten of mine had an immediate ancestor affected with the disease." I have already said that the insurance companies had done a great deal to propagate the hereditary theory of cancer. And yet it would pay them to recognize its contagiousness and so to see cancer stamped out. Among my correspondents was a medical director of an insurance company, who stated that from 1858 to 1905 the company had lost from cancer 1,361 insured, after having refused from their business all those who had had an ancestor die from it. These deaths represented a loss of at least \$1,361,000. In the year 1904 this company lost 113 persons from cancer. As a result of the writer's letter the medical director of this company has sent the following circular to the physician in care of each case dying from cancer, to answer and return to the office:

1. Have any other members of Mr. ——'s family died of cancer? If so who? 2. Was Mr. —— brought in contact with any one suffering from cancer prior to the beginning of his last

ticulars.

4. As far as you can ascertain, have there been any other cases of cancer on the same street and in the vicinity

of the house in which Mr. — died?

5. Are there any reasons in your mind to suppose that the cancer which caused Mr. — 's illness was caused by an infectious process? If so, kindly state reasons.

The writer cannot too highly commend this circular, which, sent out to several hundred physicians who have attended cancer cases, will at least set them thinking, and they cannot think about it very long without arriving at the conclusion that the heredity of cancer is a fallacy which is no longer tenable. If the medical director of every insurance company in America and Europe would follow this one's example and at the same time have inserted in the application for a policy the question, Did you ever live in a house or come in contact with any one who died of cancer? it would soon become generally known that the disease was contagious, and steps for isolating it would be taken accordingly, thereby saving the insurance companies millions of dollars and the country thousands of lives.

Although Sir James Paget, in his Morton lectures in 1887, just twenty years ago, said: "I believe that microparasites, or substances produced by them, will some day be found in essential relation with cancers and cancerous diseases"; and although since then cancer commissions in different countries have been working steadily on the problem, we are not yet able to state positively, although the writer believes, that cancer is due to the presence of an amœba, a microscopic animal found at the bottom of ditches, ponds, and pools of stagnant water. This would explain why cancer is more prevalent in low lying and badly drained localities. The amœba, when dry, draws in its pseudopodia and shrinks up into a minute speck of dust, but when placed in a warm and damp environment it comes out of its state of hibernation and begins its activities again. These consist in throwing out a sucker or pseudopodium into a neighboring cell, the protoplasm of which it immediately begins to appropriate. By the time the cell is emptied of its contents the amœba has passed entirely into it and is ready to extend its pseudo-podia into other cells to be destroyed in the same way. After having become particularly strong and vigorous it may send out as many as three pseudopodia into as many different cells at the same time.

Eisen, of San Francisco, has called these amœbæ cancriamæbæ macroglossæ. He says they measure from seven to thirty micra in length. These cancriamœbæ having gained entrance to the system, either through the alimentary canal, or, as is more probable, through an abraded surface, may remain a long time in the incubational stage without manifesting their presence. They may be circulating in the blood of many of us, but as long as every cell in our bodies retains its normal vital resisting power they will withstand all attacks from the cancriamœbal forces. But let the vitality of a part be lowered by an injury or a bruise, or subjected to a constant irritation like a clay pipe on the lip, or exhausted by constant warfare against chronic inflammation, the cells become weakened in their vital resisting power to the extent that they cannot longer repel the attacks of the enemy, and the disease has commenced. This is exactly what we know about the behavior of the tubercle bacillus: a rapidly growing boy, anæmic from deprivation of sunlight and proper food, or sufficient time in which to eat it, receives a blow on the hip or knee which lowers the vitality of the part, and at once the tubercle bacilli, which had already entered his blood by his stomach or by his lungs, take on a rapid growth which may destroy the joint or even his life.

Let us now consider what Nature does to resist this invasion of her domain. When any point is threatened she calls her forces to her defense and puts forth her utmost energy to guard her borders. So in this case, as soon as a cancriamceba commences to prey upon an epithelial cell the neighboring cells take on an increased activity, rapidly multiplying and becoming gigantic in their dimensions. This is the cell proliferation so noticeable in the vicinity of malignant tumors. The active and growing cells press on those near the cancer nest from without, while growing and multiplying cancriamcebæ are crowded upon them from within. The result is that they become flattened and lunated; at the same time the cell wall or membrane of those nearest the cancer nest take on a chitinization the more readily to hedge in and prevent the cancriamæbæ from reaching out and penetrating their walls to feed on their contents. Perhaps it would be more proper to say that this chitinization or hardening is part of the life history of the amœba, for it is due to a calcareous secretion thrown out by the amœba itself, for the amœba is frequently covered with it. Thus is formed that stony hardness which is so characteristic of cancer, and, as every one has observed, the harder the cancer the slower the growth, other things being equal. According to Eisen, this cell proliferation, so pronounced in carcinoma, has been called the disease. The mistake has been that we have considered the manifestation which Nature makes to stop the disease as the disease itself.

But, as Eisen says: "The cancriancebæ more often triumph over cell activity. The fortress of chitinization is seldom sufficient to withstand the pseudopodial battering rams of these organisms. Wall after wall of the best fortified cells are penetrated and crumble down, and in the débris thus formed leucocytes begin to appear, as they always do, in the waste tissues of the body if retained in the system. The hitherto hardened mass begins to soften in the centre, and soon the open ulcerative surface appears-the veritable battlefield of microscopic hosts strewn with the dead and dying of both sides, to be consumed by the leucocytal vultures." This, however, is not always the result; sometimes cell life is so vigorous and active that the cancriamebæ are effectually imprisoned in their cornificated walls and die from inanition. The growth then diminishes in size and the hard tumor which we thought was going to be a malignant disease remains stationary as a small tumor for years. This is one of Nature's methods of curing a cancer. It is similar to the cure of tuberculosis of the lungs, where Nature, aided by a well directed therapeutic effort, has succeeded in throwing up a wall of calcareous material around a nest of tubercle bacilli, as is frequently revealed by autopsy years afterward.

To sum up: The bubble of the heredity of consumption has been burst and requires no further argument. Cancer, which has been considered a hereditary disease, is largely on the increase, just as consumption is on the decrease. One of my correspondents, the medical health officer of the model town of Bernardstown, Mass., in which every death has been recorded, with its cause, since 1864, writes me as follows: "From 1864 to 1874, one death from cancer, and forty from tuberculosis. From 1874 to 1884, three deaths from cancer, and twenty-six from tuberculosis. From 1884 to 1894, eight death from cancer, and seventeen from tuberculosis. From 1894 to 1904, twenty deaths from cancer, and seven from tuberculosis." Simply because cancer is still believed to be hereditary and no precautions are taken toward stamping it out, while consumption is recognized to be contagious and is being rapidly stamped out. So that it is of the utmost importance that the popular idea of its heredity should be changed; for until it is, no steps will be taken to isolate it and people will put off having it removed while it is still possible to remove it entirely.

Cancer is an absolutely local disease in the beginning, and should be removed at the earliest possible moment after its presence is *suspected*.

The amœba of cancer may remain dormant a long time in its dry state and take on activity under suitable conditions. A room or a house vacated by a cancer case should be most carefully disinfected before being again occupied. Several of my correspondents have reported cases contracted from a cancer house. Just as in tuberculosis, people may be exposed to the contagion many times without contracting the disease, because their cells are in good condition and able to destroy or resist the amœbæ, but when they get older and their cells are less vigorous, the amoebæ will conquer their cells and the disease will soon be in full blast. As scar tissue and ulcerated surfaces are less able to defend themselves than normal tissues, the possibility of cancer should be kept in view when these conditions are present, especially in people nearing forty. Scar tissue and

chronic ulcers should be removed, when possible, before cancer has had time to infect them. And for the same reason no dietetic sacrifice is too great to be worth while making if it is necessary for the cure of dyspepsia, which is the commonest cause of ulcers and scars in the stomach.

Want of space and other reasons preclude my giving, even in brief detail, the instances of cancer having been acquired by contagion; they have been published in the *International Journal of Surgery* for December, 1906. I do not think anybody could read them without being convinced that cancer is

contagious, for in not one case had either parents or

grandparents suffered from that disease.

Let us now take up another gigantic bubble, the heredity of insanity, which cannot be exploded too soon. What misery has been entailed upon perfectly healthy people by the ever present spectre overshadowing their lives, that their mother or their grandfather or their aunt was insane. This heredity of insanity has been so much abused in making statistics that on this point they are quite unreliable. For instance, the son of a clever man marries, has a large family, quarrels with his wife, leaves her, contracts syphilis, gets a gumatous tumor on the brain, and goes to the asylum. His very clever daughter marries and has uræmic convulsions with her first child and also becomes insane. Evidently these two casees of insanity have absolutely nothing whatever to do with each other, and yet her case would surely be classed as hereditary, because her father died insane. Here, again, insurance companies and the superintendents of insane asylums have handed down this false tradition from generation to generation, so that the profession, and the public through them, have been trained to believe that it is true. On the contrary, I am convinced that a child born of the most clever and most intellectual parents may become insane, if improperly fed or badly brought up, while a child of weak minded, or even insane, parents may grow up to be an intellectual giant if transplanted soon after birth to a highly intellectual environment and if properly fed. Idiots and those having organic disease of the brain are not referred to at all in this paper. As for the brains of the insane, the writer states that our brains are just what we make them by exercising, cultivating, feeding, starving, and poisoning them. If his contention can be proved, a great deal of what has been copied from one textbook into another for the last fifty years will have to be abandoned, with the result that thousands of people who are now regarded as hopelessly insane because of supposed heredity, will be treated and cured and restored to their family and friends.

Taking any hundred women in any asylum at random, an unbiased investigation of the cause of their insanity will enable us to group probably ninety-five of them under one of two headings; first, those caused by defective nutrition of the brain, and second, those caused by poisoning of the brain. Under the first heading we must place those women whose brains are starved by reason of insufficient food or light or air; second, those whose blood cannot nourish the brain because of increased demands upon it, such as lactation, pregnancy, insomnia, or exhausting hæmorrhages; third, those in whom the brain is starved, because some great mental impres-

sion so affects the sympathetic nerve as to take away the inclination for food, and to prevent its digestion if eaten; and fourth, those whose brains are starved because some abnormal pelvic condition is irritating the sympathetic, which irritation is expressed in the brain by contraction of the circular fibres of the arterioles; so that no matter how rich the blood may be, an insufficient supply of it is able to reach the brain cells. In the category of insanity from poisoning, we must include cases of autointoxication by ptomaines and from defective digestion and assimilation, whereby the proteids do not reach the ultimate stage of urea, but stop at the formation of creatin, creatinin, xanthin, or uric acid; second, the cases of defective secretion by the liver and kidneys, so that poisons such as bile and urea accumulate in the blood and inundate the brain cells, instead of being removed as fast as they are produced; third, insanity after operations, which if not due to iodoform should rather be called septic delirium from blood poisoning.

Let us now look a little more carefully into the bearing of each of these conditions as a factor in the

causation of insanity.

Starvation of the brain due to anæmia. Every practitioner of twenty years' experience can recall many cases, mostly in young women, in whom the brain failed to work correctly from this cause. One of the first cases of insanity which came under the writer's care was a young woman who became violently insane owing to a disappointment in love, and who had to be sent to an asylum. How did the brain become starved in this case? The process is easily explained; any all absorbing passion of occupation takes away the appetite and even paralyzes the function of digestion. This young girl was so much in love that for nearly a year before she had had no time or inclination for food, and her blood became anæmic. When the disappointment came she absolutely refused to eat, and a few days later her brain had become so entirely deprived of nourishment that reasoning came to a standstill. Since then the writer has seen many cases of this kind, in varying degree and from different causes. At one time it has been a woman with uncontrollable vomiting, who became more and more anæmic from starvation until the mind wandered. Another time it has been a wife who had been so plunged in grief from the death of her husband that she could not eat. The insanity is only temporary in all these cases, for as soon as food is eaten and digested, the brain rapidly recovers its functions. Under the same heading may be classed the insanity of pregnancy and lactation; the brain cannot work properly without phosphates, but these are taken up to such an extent to provide bones for the child that the mother's brain is deprived of them. As soon as phosphates are furnished in abundance the woman rapidly regains her

The importance of sunlight and fresh air is well known, but its bearing upon insanity is perhaps not so well understood. And yet we may safely say that the brightest and happiest woman would eventually become melancholic and even insane if she were kept in a room from which every ray of sunlight had been excluded. The superintendent of a large and successful sanatorium states that patients who are

despondent almost to the verge of committing suicide, show the most remarkable improvement within a few days after being placed all day in the sun parlor. Many of the mild cases of insanity which are cured in sanatoriums, principally by sunlight, fresh air, and nourishing food, would probably otherwise have found their way to the asylum.

It is interesting to note that Dana attributes the insanity of women at the menopause to starvation of the brain cells, owing to senile degeneration of the arterioles, which diminishes their calibre, and consequently allows less blood to pass through them. If such was the case, little or nothing could be done for these patients. But it bears on our subject to remark that Skene, who has given this subject much attention, states that in his experience the insanity was due to overwork, childbearing, and lactation, with insufficient food and sleep. How often do we find just such conditions among the farmers' wives, who contribute such a large contingent to the insane asylums.

Insanity from poisoning of the brain. It will be convenient to subdivide the causes of the poisoning under four heads: 1, poisoning from defective action of the kindneys; 2, from defective action of the liver and bowels; 3, from defective assimilation or combustion, so that chemical products are formed in large quantities, which should not be formed at all or at most only in very small quantities; and 4, from septic poisoning. Insanity is a well known termina-tion of disease of the kidneys, but the discussion of it is more suited to a technical journal. But the second cause, autointoxication, is so common that it should be better understood. The writer fully believes that the systematic keeping clear of the intestinal tract would save hundreds from the asylum and reclaim hundreds of thousands from that semiinsane state known as melancholia. The word itself expresses the condition. The failure of the liver to keep the blood free from black bile keeps the patient constantly on the border of insanity. Their intense despondency frequently leads them to suicide. A course of cholagogue cathartics, and the correction of the diet so that the intake shall not greatly exceed the output soon makes a marked difference in their mental condition. One patient, who did not know her husband and refused to recognize him, completely regained her sanity after a month of such a treatment, so that she was able to return to her home and take care of her house, although previously she had to be taken care of by a trained nurse.

Contagiousness of insanity. I have already expressed a strong conviction that insanity was not hereditary; if it were so a much larger proportion of those now in the asylum would have had insane parents; not insane uncles and aunts, but insane parents. Moreover, it is not logical to sav that everything which happens to a person is hereditary because it happened to his father and mother. It was also stated that in insanity, as in consumption, the idea that it was hereditary has been one of the greatest obstacles to treatment, so that, insead of being one of the most amenable, it has come to be considered one of the most hopeless. "If it is hereditary," people say, "then it is bound to come no matter what they may do. Therefore why do anything?" Believing that heredity was one of the factors which had least to do with it, the writer was pleased to notice an article by Dr. Vallee, superintendent of the Beauport Asylum, Quebec, that he believes that many cases of insanity are contagious, in the sense that one member of a family may by imitation of the insane actions of another member gradually become as insane as the first one.

Explosion of the theory of the heredity of drunkenness. This too prevalent disease is generally supposed to be hereditary. But the writer is convinced that what has been taken for heredity is simply a matter of imitation. He knows of several families where the father was a confirmed drunkard long before the children were born, and yet not one of those children care for alcohol; in fact, they loathe it. These children were for the most part educated away from home. In another family, where the father only took to drink after all the children were born, the five boys were brought up with the constant example of a drinking father before them, and four out of the five have become drunkards. If drunkenness was recognized as contagious instead of hereditary many a family might be saved from this disease, either by isolating the drunken father or by sending the children away when practicable.

If more attention were paid to training and environment and less to heredity, there would be fewer consumptives, fewer people with cancer, fewer insane, fewer drunkards, and fewer murderers.

238 BISHOP STREET.

ISCHOCHYMIA.*

By Frank Hall Murdoch, M. D., Pittsburgh, Pa.

Ischochymia is an affection characterized by the constant presence of food in the stomach, even in the fasting state (Einhorn). It may be acute or chronic. Whether acute ischochymia or acute dilatation of the stomach, as it is termed by Boaz, Hunter, and others, is due to a paralysis of the gastric muscles, or to a spasmodic contraction of the pylorus, or to both, is as yet undecided. It is usually brought on by some gross error in diet, though it occasionally follows chloroform anæsthesia. Out of sixty-four cases known, forty-seven proved fatal. Of the total number of cases, twenty-nine followed chloroform anæsthesia, and in eleven of these the operation had not involved the abdomen, but was at points remote from it (Neck).

The chronic form is caused (I) by mechanical obstruction of the pylorus, (2) by absolute or relative weakness of the expulsive forces—in other words, atonic conditions of the muscularis. The mechanical factors which lead to stenosis or occlusion of the pylorus are either situated in the wall of the stomach itself or extend to it from without. The most frequent causes of the former are carcinoma and cicatricial contraction from an ulcer situated near the pylorus, or spasmodic contraction of the pylorus from the same cause. There are cases too in which hypersecretion of gastric juice has so to irritated the mucus membrane of the stomach as to cause spasmodic contraction of the pylorus with

temporary stagnation of food in the stomach, and should this condition continue long enough, it may finally lead to muscular hypertrophy.

The causes situated external to the stomach which may produce stenosis or occlusion of the pylorus are tumors arising from the pancreas, the omentum, the retroperitoneal glands or the liver, adhesions of the pylorus to neighboring organs, or cicatricial bands, which make traction or pressure on the pylorus. Bartels was the first to call attention to the joint occurrence of wandering right kidney and dilatation of the stomach, but Oser, Nothnagel, Leube, and Ewald believe that no causal relation exists in the majority of cases, and Kutner has shown that in many cases of so called dilatation with floating kidney, there is no dilatation, but either a megalogastria or a gastroptosis, which has led to erroneous conclusions (1).

Stenosis of the pylorus is always associated with hypertrophy of the muscular wall of the stomach, just as an aortic or mitral stenosis is accompanied by hypertrophy and dilatation of that portion of the heart situated behind the obstruction. Also in the later stages of advanced dilatation, the musculature, though hypertrophied, may become so weakened that all peristaltic movements may cease (2), just as rupture of compensation occurs in long standing cases of dilatation of the heart due to obstruction at

one of its openings.

Most authorities distinguish two degrees of ischochymia. In the morning if food is found in the stomach which had been taken the previous evening, this is considered to be a high degree of ischochymia. If, on the other hand, the stomach is found to empty itself during the night, but contains particles of food seven hours after a test meal, this is said to be a mild degree of ischochymia. Ischochymia due to atony of the stomach walls is comparatively rare, and an exact diagnosis is at times very difficult. If we have a case of ischochymia, where a thickening of the pylorus can be palpated, and also where peristaltic restlessness can be seen, then the case is clear; but if neither of these signs is present it is not easy to say whether we have before us a case of obstruction of the pylorus of long standing with resultant loss of peristaltic movements of the stomach, or whether we have such a loss of motility from atony of the gastric musculature as renders the stomach inadequate to transport its contents through a normal pylorus.

Usually in ischochymia resulting from stenosis of the pylorus, only the coarser particles of food are found in the stomach in the morning before the patient has eaten anything, the finer particles and the liquid contents having passed into the intestines. On the other hand, where stagnation of food is due to atony of the gastric musculature, the coarser particles of food will pass through the pylorus and only a small quantity of the finer particles mixed with liquid chyme will be found in the stomach in the morning before the patient has taken any food. In the treatment of ischochymia due to mechanical obstruction of the pylorus, surgical interference is demanded if the obstruction is due to malign stenosis, to benign stenosis of high degree which will not yield to medical treatment, to adhesions of the pylorus to neighboring organs, to cicatricial bands,

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or to tumors which by pressure obstruct the outlet of the stomach. Formerly operation was considered necessary in all cases of benign stenosis of the pylorus of whatever degree, but now we know that such is not the case, for under proper medical treatment, including diet and lavage, many patients entirely recover. If we have a patient who has a stenosis of the pylorus of such degree that solid food will not pass out of the stomach in the normal time, but will pass out in twelve or fourteen hours, we can allow that patient two meals of solid food each day, one in the morning, the other in the evening, and direct that liquid food be given between meals in sufficient quantity to make up the necessary number of calories. If the stenosis is of such degree that a test meal of solid food remains in the stomach for a longer time than twelve or fourteen hours, then liquid food only should be allowed for a time, the stomach meanwhile being washed out every morning before the patient has taken any food. So long as the patient can, under this treatment, maintain his strength and weight, and is willing to live in this way, operation should not be urged, because there is always a hope of complete recovery without surgical intervention, and should the patient begin to lose ground in spite of these measures, an operation can be done at any time. Stenosis of the pylorus which occurs in wasted infants, at least that due to spasm, also seems quite amenable to medical Bloch has recently reported twelve cases. The first six infants were treated with gastroenterostomy and four died. The last six were treated by medical means and recovered. In the fatal cases the pylorus was always found closely contracted, but the evidence, he thinks, tends to show that when this spasmodic contraction is overcome the normal lumen of the pylorus is permanently restored (3).

Robert Hutchinson also reports nine typical cases of congenital stenosis of the pylorus seen by him during the winter of 1905 and 1906, all of which recovered under medical treatment. In two of the cases the condition seemed at one time to be so desperate that operation was advised, but was not performed because the parents refused to sanction it; yet both children ultimately got well. He therefore states his position as follows: (1) Operation is never justifiable as soon as the diagnosis of congenital pyloric stenosis has been made. (2) One can never be sure that medical treatment is going to fail until the condition of the child is already so bad that the chance of recovery after operation is almost nil. He believes with Bloch, that the stenosis in these cases is the result of spasm which leads to a secondary hypertrophy of the pylorus, and that this hypertrophy disappears as the spasm passes off (4). Miller and Wilcox (5) likewise believe that the medical treatment yields the best results, and are of the opinion that those children who die under medical treatment die with diarrhœa, because the intestine has become too atrophic to deal with the food which passes into it when the pyloric spasm has been relaxed. As additional evidence showing what may be done by medical means for the relief of benign stenosis of the pylorus in adults, I wish to report the following cases. In one case the stenosis followed the healing of a chronic gastric ulcer; in the other case the pathogenesis was obscure:

Case I.—On October 24, 1902, Miss H. N., aged twenty-unconsulted me and gave the following history: In March, 1901, she began having pain in the epigastric region immediately after meals, with nausea but no vomiting. This attack lasted eight months, or until January, 1902. During the winter and spring of 1902 she enoyed good health, excepting that she did not feel very strong. In July of the same year she had an attack of cholera morbus, and has had pain in the epigastrium ten or fifteen minutes after meals ever since.

Present condition: Pain soon after meals made worse by moving about, nausea but no vomiting. Often had a bowel movement after a meal, bad taste after eating, appetite good, but never experienced a sense of having had enough food, felt sleepy during the day, but did not sleep well at night, bowels rather constipated; had lost thirteen pounds in weight, now weighed one hundred and ten pounds.

Examination: Heart, lungs, and liver normal. Stomach splashing to navel, right kidney in third degree of displacement, one tender circumscribed spot, two inches above the navel in median line, also a tender spot in the back to the left of the lower dorsal vertebra. Examination of the stomach content, taken an hour after Ewald's test meal, showed that free hydrochloric acid was absent, total acidity 60. Urine was 1.018 specific gravity and contained neither sugar nor albumin.

Treatment: Rest in bed, liquid food, principally buttermilk, and silver nitrate in pill form.

This patient remained in bed three weeks and lived on liquid food for three months, at the end of which time she was permitted three small meals of solid food each day with liquids between. At this time I also made a second examination of the stomach content after an Ewald test meal and found free hydrochloric acid, + 44, total acidity 64.

ity 04.

In November, 1903, she complained of pelvic pain, and Dr. Werder found that her uterus was retroverted and fitted her with a suitable pessary, which gave her relief.

In July, 1904, a year and eight months after I first saw her and fifteen months after commencing to take solid food, she began to suffer from a stenosis of the pylorus, due evidently to contraction or spasm of the tissues at the site of the ulcer, and in spite of the usual treatment the ischochymia persisted for eleven months, or until June, 1905. The stomach then emptied itself normally for six months, or until January, 1906, when the ischochymia again appearing, an operation was strongly advised, but the patient preferred to go on with medical treatment as long as possible; and this attack also yielded, for in June, 1906, she wrote that she had taken a test meal of beefsteak, potatoes, bread, and butter, and on washing out the stomach seven hours afterwards, had found it entirely empty. In February of this year Dr. J. B. Neale, her family physician, informed me that the patient's health was good and that there had been no return of the stenosis.

In regard to the frequency with which stenosis of the pylorus occurs as a result of chronic gastric ulcer, Brinton has computed that severe stenosis occurs in one out of every two hundred cases, and Fenwick believes that the pylorus becomes partially occluded in sixteen to twenty per cent. of all cases; but that in only about two per cent. of these is the stenosis extreme. The case I have related is one of thirty-two cases of chronic gastric ulcer previously reported, and the only one in which stenosis of the pylorus occurred, being 3.1 per cent. (6).

Case II.—On July II, 1904, Mr. C., aged sixty-two, bookkeeper, was referred to me by Dr. R. W. Stewart, who had diagnosticated stenosis of the pylorus, but the patient wished to avoid operation if possible. The history of the case is as follows: Two years ago he began to be troubled with bloating and belching coming on soon after meals, and also distress in the epigastrium about an hour before each meal, which was relieved by eating. He also suffered from severe attacks of pain in the abdomen, which came on about 4 o'clock in the morning. He had never taken morphine to relieve these pains, but was in the habit

of drinking hot water and applying a mustard plaster to obtain relief. He had lost twenty-five pounds in weight, and felt weak and discouraged. His appetite was good, his bowels regular, and he slept well when free from attacks of pain. Inflation of the stomach showed that lower border extended three and one half inches below the umbilicus. Free hydrochloric acid was present in normal amount. The specific gravity of the urine was 1.010, and it contained neither sugar nor albumin. He took a test meal in the evening, and the next morning before he had eaten anything I washed out his stomach and found part of the food he had taken the previous evening, together with numerous berry seeds he had eaten the day before. Lavage was practised every morning after this and berry seeds appeared in the wash water until the 15th inst., that is, four days after they had entered the stomach. addition to lavage the treatment consisted in allowing the addition to lavage the treatment consisted in allowing the patient only liquid food, and the method proved so satisfactory that on December 6, 1905, about five months after I had first seen him, he had gained nineteen pounds in weight and felt strong and well. He was then taking two meals of solid food a day, one in the morning and the other in the evening, with liquids between to make up the necessary number of calories. He occasionally washed out his stomach in the morning, and always found it empty. I saw this patient in January, 1906, a year and a half after he first consulted me, and he was then in good-health; I also heard directly from him three weeks ago, and he was still in good health and so far had not required surgical aid.

There is no doubt that gastroenterostomy would be the ideal treatment for all cases of benign stenosis of the pylorus if it were entirely free from danger, but so long as even a small percentage of patients die as a result of this operation it is the duty of the physician to employ every available means for the patient's relief before advising surgical intervention.

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CANCER OF THE RECTUM.

A Study of One Hundred Consecutive Operations for Malignant Growth of the Rectum and Sigmoid.

BY JAMES P. TUTTLE, M. D., New York.

(Continued from page 504.)

CASE XXXVI.-March 14, 1901. Mrs. G. H. A., age thirty-two

Family history was clear.

Eight or nine months ago noticed passage of a little blood at stool; morning passages of mucus; six to ten passages a day. Cutting pain when bowels move. Anus normal. Three and one half inches above the anus a hard protruding tumor extended up beyond reach, on the anterior wall of the gut, posterior wall clear. Adeno-

March 21st. Bone flap operation; resection six inches end to end suture of cut ends; sutured peritonæum and boneflap. Posterior drainage. Very little hæmorrhage. March 25th. Highest temperature, 100.5° F.; doing well. April 10th. Left hospital well, except for slight posterior

May 15th. Fistula almost healed; had gained ten pounds, and felt well.

March 30, 1903. Fistula healed in August, and patient went to country to live. Felt well up to one month ago, when she began to suffer from indigestion and pain in the back. Growth recurred in situ and in liver. No further operation advised

Died about six months later; condition very sad.

CASE XXXVII.-January 3, 1901. Mr. J. H. K., age Family history clear, except a sister and an uncle died of

tuberculosis

Personal history: Patient is a wiry, nervous, thin individual; weight 140, which had been his average. Constipated, no pain; had typical morning diarrhæa; no mucus or blood at stool. Sigmoidoscope showed tumor ten inches up, easily felt, in the left inguinal region. Is sausage shaped and about three inches in length.

January 10th. Operation. Resected six inches of the sigmoid, by abdominal route, Murphy button reinforced. Uneventful recovery.

Living three years after. February, 1908. Brother reports that he died in 1906, with recurrence in liver and stomach.

CASE XXXVIII.-May 16, 1902. Mrs. J. C., age thirty

Family history clear.

Patient had lost twenty-five pounds in weight in six onths. Constipated up to six months ago, since which time she had had bearing down pains and passages of mucus; morning diarrhœa or stool of mucus. Anus normal. Three and one half inches from the anus is a large, friable, nodular, ulcerating mass, extending two and one half inches up, and movable. Adenocarcinoma. Ordered salines; peroxide irrigations, and dietary preparation.

May 21st. Operated. Perineal excision. Growth large

and difficult to bring down. Vagina opened by accident.

Posterior drainage.

May 30th. Patient did well; was out of bed to-day. June 15th. Patient went home to-day; well, except for slight discharge from posterior drainage.

March 10, 1906. Marked recurrence in liver and in situ. June, 1906. Patient died. No secondary operations.

CASE XXXIX.-January 15, 1901. Mr. G. K., age fortyeight.

Family history: Sister died of tuberculosis and brother had carcinoma.

Personal history was clear. Present illness began in slight aching and frequent desire to go to stool about two months ago. Was operated upon for hæmorrhoids December 10, 1900: Now loses a little blood and mucus at stool and had morning diarrhœa. Aching and shooting pains more or less constantly. Protrusion at stool. Anus normal except for protruding mass of hæmorrhoids, one of which is polypoid, hard, nodular, and ulcerated.

January 17th. Operated, amputating lower end of rectum for about two inches. Brought gut down and sutured to skin. Pathological report, adenocarcinoma.

January 20th. Primary union.

January 27th. Left hospital well; functions perfect.

February 24, 1908. Perfectly well.

CASE XL .- April 14, 1901. Mrs. N. L. A., age forty.

Family history clear

Patient was formerly constipated. In June, 1899, passed considerable blood at stool; no pain; after several weeks bloody discharge returned, accompanied by mucus at stool; since this time bowels had been loose and constipated alternately. Early morning stools consisted of blood and mucus; pain over the lower abdomen; none on defæcation. For three months the discharge of blood and mucus had been controlled by laxatives and oil enemas. In December, 1900, was examined by a prominent practitioner in New York, who reported no rectal disease, but fæcal accumula-Advised laceration of the cervix to be repaired. During this operation rectal examination showed shaggy tumor, the size of a child's fist, surrounding the rectum and lessening its calibre. Rest in bed seemed to improve the condition, although an elevation of temperature continued, without sufficient reason in the operative field.

Examination showed no discharge or unnatural moisture about anus; sphincter tight; rectum normal for four inches; at four and one half inches up one could feel a soft, velvety tumor, which bulged out into the calibre of the gut; it was attached by a broad base, very vascular, and not indurated. Microscopical examination showed benign

papilloma. Patient deferred operation.

September 4, 1901. Tumor showed rapid progression, marked induration about base, great encroachment upon calibre of the gut.

September 10, 1901 Operation. Resection of growth by combined method. Considerable adhesions of the sigmoid to broad ligament and uterus. Operation prolonged and difficult; eight inches removed; end to end union. Patient never rallied and died from shock on the third day. Pathological report, adenocarcinoma, very malignant type.

This case illustrates very forcibly, 1, the inadequacy of digital examinations in rectal diseases; 2, the unreliability of microscopical examination of small sections of tumors; and, 3, the folly of delay in the removal of tumors of the rectum, whether benign or malignant.

CASE XLI.—November I, 1900. Mrs. M. A. F., age forty-five.

Family history was negative.

Eighteen months ago patient began to suffer from frequent stool and discharge from rectum; this continued. The discharge was dark, bloody, fætid; pain increased during the past few months and she had lost much flesh. Anus normal. Friable, nodular constriction of the rectum one inch up, extending about three inches, and contracting calibre to the size of the little finger; barely movable, if at all.

November 7th. Perineal excision. Upper part of the gut brought down and sutured to the skin. Pathological report, adenocarcinoma. Parts did not unite well; some

granulation and incontinence.

November 19th. Patient refused further treatment. Had recurrence in about nine months. Date of death unknown.

CASE XLII.-February 15, 1902. Mrs. M. M., age sixty.

Family history, clear.

Patient had had dysentery and typhoid when forty-five. Childbirths were very difficult; always constipated. Present illness began nine months ago in increasing frequency of stools; loss of blood began two months later; very little pain. Anus normal. Three and one half inches up friable, ulcerating mass, on indurated base, entirely surrounding the rectum and extending beyond the reach of the finger; easily movable, but attached to the uterus.

February 20th. Vaginal resection, seven inches of gut

removed; attachments to uterus were inflammatory and easily broken up; posterior drainage; peritonæum closed

by catgut sutures

February 21st. No shock; patient in fine condition. February 23d. Temperature, 103° F.; pulse, 120. Posterior drainage removed; considerable serum discharged.

February 24th. Temperature, 99.6° F.; pulse, 105. February 28th. Continued improvement; small posterior

fistula.

April 4th. Left hospital well, except for small posterior fistulous tract, through which no fæces escaped.

January 1, 1903. Entirely well; functions good. April 6, 1906. Still well. April, 1908. Letter of inquiry returned.

CASE XLIII.-October 10, 1901. Mr. W. G. P., age forty-two

Family history, clear.

Patient thin and aniemic; operated for piles two months ago. For three years had suffered from indigestion and loss of flesh; frequent stools with mucus; constant desire to stool; burning pain in the rectum. Skin tabs about anus, calibre normal. Rectum normal for four inches, where a hard, nodular, ulcerating tumor surrounded the gut; slightly movable; could not reach the top. Adenocarcinoma.

October 14th. Bone flap operation; resected eight inches; Murphy button reinforced; peritonæum closed; flap sutured

with silkworm gut.

Much oozing; temperature, 103.2° F. October 16th. October 17th. Much obzing; temperature, 103.22 Fr., pulse, 130; packing removed; a large amount of bloody serum dammed up above gauze. Transfused.
October 17th. Temperature 100° F.; pulse 124, better

October 10th. Temperature 99.5° F.; pulse 115. Free drainage; distinct gain.

October 20th. Continued improvement; button taken out through the anus, but fæcal fistula through posterior wound. November 25th. Patient left the hospital feeling well; fistula still losing thin fæcal matter.

February, 1904. Had been treated at outdoor clinic; fistula no longer fæcal; had gained in weight and felt well.

May 20, 1908. Remained well three and one half years, then ceased to attend clinic. Has moved and left no

CASE XLIV.-June 12, 1900. Mr. S. H., age twenty-two.

Family history was clear. Patient complained of a bloody diarrhœa, which was painless and had continued for the past two years; fifteen to twenty stools per day. Within the rectum, beginning about two inches from the anus, was a soft, lobulated tumor, which felt almost cystic, with a hard base below, and filled the rectal cavity so that it was almost impossible to

pass the finger through it. Movable.

June 13, 1900. Operated. Temporary inguinal colostomy.
Maydl method. Removed specimen. Under an anæsthetic
was able to reach the top of the growth with finger; it was

movable. Pathological report, colloid carcinoma.

June 22. Artificial anus acted well. Removed growth in rectum, boneflap method. Resected nine inches, and found I was able to bring the sigmoid down to the end of the rectum, which had been cut; end to end suture. Restored boneflap with silkworm gut sutures.

June 24th. No complications; parts seemed to be uniting

July 15th. Union complete; calibre of the rectum somewhat contracted. Closed colostomy opening, extraperitoneal method.

Patient left hospital, much improved in August' 1st. health.

July 20, 1901. Mass in abdomen suggested recurrence. July 29, 1901. Opened abdomen and found nothing but a mass of adhesions. Stricture of the rectum four inches

up. Divided by posterior proctotomy.

August 17, 1901. Stricture kept dilated; bowels now

moved freely.

August 11, 1903. Readmitted. Hernia at sight of old abdominal wound. Closed by Dr. Wellbrock; infection and prolonged convalescence; wound finally healed; no

March 1, 1908. Patient had gained ninety pounds since operation, nearly eight years ago; no recurrence.

This case is remarkable, both on account of the youth of the patient and of the colloid nature of the

Case XLV.—November 14, 1902. Mrs. M. A., age sixty-

Family history was clear.

Patient had had good health for years, except for attacks of rheumatism. Had lost much flesh in the past six months; suffered from flatulence and indigestion; for the past year had suffered from constipation; frequent call to stool, passing only "slime" and blood. Symptoms of indi-gestion and alternating diarrhœa and constipation began mine months ago. Pain in sacrum and left inguinal region. External hæmorrhoids about anus; sphincter relaxed; rectal nucous membrane congested; pelvis practically filled with a large nodular mass involving the whole circumference; movable; calibre insufficient to admit finger; mass outlined by abdominal palpation.

November 24th. Patient had been given saline every morning; liquid diet; peroxide enemas t. i. d. resection; abdominal route; tumor taken out through the abdomen; sigmoid invaginated through anus; end to end

winon accomplished. Over fifteen inches removed.

November 26th. No complications; temperature never above 100° F.; pulse highest, 95.

December 23d. Patient left the hospital.

February I, 1903. Fibrous stricture at site of union;

October 19, 1903. Patient had gained fifty pounds. Dilated stricture once a month; had a tendency to contract; no recurrence

June 1, 1908. Patient had remained perfectly well.

The specimen in this case showed a lateral anastomosis between the upper rectum and the middle loop of the sigmoid, through which all the fæces were sidetracked, leaving eight inches of the gut out of use.

CASE XLVI.-July 23, 1902. Mr. F. J., age thirty-seven. Family and personal history was clear.

Slight burning, itching, pain at the lower end of the rec tum for the past two months; had to strain a great deal when he went to stool. Anus showed large protruding hæmorrhoids; upon the upper surface of one, in the right anterior quadrant, was a hard, nodular, granular mass, elevated above the mucous membrane, and bleeding easily on touch. Rectum apparently healthy above this mass.

August 1, 1902. Local applications failed to have any effect. Operation. Excised the whole lower end of the rectum, leaving the external sphincter. Took out one and one half inches, and brought the gut down, suturing it to the skin. Induration at the base of the granular mass did not seem to involve the muscular wall. Pathological report, squamous epithelium.

August 10th. Union practically primary, no com-

August 17th. Patient left for home, practically well. April, 1906. Absolutely perfect results. May, 1908. Patient had remained perfectly well.

CASE XLVII.-July 21, 1902. Mr. W. J. S., age fifty-

Pale, grayish complexion; strident voice. No cough; always thin. Height six feet, weight 135, no recent loss of weight. Operated ten years ago for polypus of rectum. Constipated, had diarrhea and bleeding, stools flattened, required straining with solid stool; passed material resembling flaky shreds; no particular pain. Anus normal. Rectum normal for three inches, at which point was found a round, firm tumor, rather smooth, almost surrounding the gut; mucous membrane slided over it. Calibre of gut reduced to about one half.

July 27th. Operation. Extirpation by boneflap method. Resected four inches; end to end union. Very slight hæmorrhage. Closed off peritoneal cavity by sutures before opening the gut. Sutured flap in place by silkworm gut. Pathological report, small round celled sarcoma.

July 30th. Removed packing, considerable discharge of serum and blood; otherwise patient was doing well.

August 5th. Fæcal discharge largely through posterior wound.

August 15th. Fistula gradually closing. Patient left for

April, 1903. Reported himself well.

December, 1907. Still well.

CASE XLVIII.-January 28, 1903. Mr. S. K., age fortysix.

Family history was clear.

Personal history: Dark, well preserved, but tired looking man. Diarrhoeal tendency. Hæmorrhoids for many years. Present illness began after excessive exercise seven years ago. Protrusion, pain, and bleeding at stool, some swelling, which had disappeared. Large discharge of blood, mucus, and pus. Pain and a hard protrusion at stool, which was reduced by hand. External hæmorrhoids about the anus; the sphincter was hypertrophied and spasmodic. Large prolapsing hæmorrhoids in rectum; ulcerated; on the left side there was a small, hard mass above internal sphincter, very movable and easily dragged down outside the rectum. No induration at base

February 2d. Removed by clamp and cautery. Specimen sent to laboratory. Pathological report, melanosarcoma. February 25th. Parts entirely heaied; patient well.

February 25th. Parts entirely heaied; patient well. January, 1905. Patient continued to be in good condition. 1906. Lost sight of patient.

Case XLIX.—April 1, 1903. Mr. R. T. J., age sixty-five. Good color and well preserved. Had had heart trouble and morning diarrhea for a year and a half. Frequent, thin, watery stools with constant desire to defæcate. Anus normal. A small nodular mass, about the size of an English walnut, one and one half inches inside the rectum, attached to the posterior wall, movable and almost pedunculated.

April 7th. method. Ope Removed by modified Quenu (perineal) Operation very easy. Sutured the musculature of the rectum to the gut and the mucous membrane to the Removed two and three quarter inches. Pathological

report, adenocarcinoma.
April 10th. Mucous Mucous membrane sloughed, but deeper

April 20th. Parts granulating; sphincter regaining

May 12th. Parts healed; fair continence. 1908. Had no recurrence two years later. Had moved

and left no address.

CASE L .- April 7, 1903. Mr. A. E. G., age fifty-six. Family history was clear.

Ten years ago was operated upon for piles: six months later for carcinoma; Kraske.

Constipated; slight discharge of blood and mucus; no Anus normal except for cicatrix. A nodular hard growth surrounds the rectum for one and one half inches above the anus. Microscope showed same to be colloid carcinoma.

April 14th. Perineal operation. The growth involved the anal margin and extended two and one half inches up, also extended around the urethra, requiring excision of about three quarters of an inch of this organ; end to end about three quarters of an inter of this organ, the to che sturre of same. Dissection very difficult, owing to anomalous condition of parts, due to old operation. Little glandular involvement. Outer fibres of the external sphincter left and sutured around gut. Mucous membrane sutured to skin. Permanent catheter.

April 19th. Catheter removed yesterday; no leakage;

patient urinates with difficulty.

April 23d. Rectal wound practically healed; very small perineal fistula, with loss of a few drops of urine, developed; began passing sound.

May 10th. Patient went home, practically well; some incontinence. June 1, 1904. Patient still well; continence much improved.

February, 1908. Patient still well and attending to business.

CASE LI.-May 15, 1903.-Mr. H. H. W., age seventyeight.

Family and personal history clear.

Patient was a strong and well developed man. Constantly decreasing size of stool and increasing difficulty in defæcation for the past six months. Smarting pain in rectum; much flatulence. Anus normal externally, but just within the external sphincter was a lobular, soft, ulcerating growth, involving the entire circumference and extending three and one half inches up the gut. Pathological report, colloid cancer.

May 18th. Perineal excision; removed seven inches; sutured musculature to gut; mucous membrane to skin.

Peritonæum and dead space closed by sutures.

May 20th. Patient doing well.

June 21st. Patient left hospital; wound closed; partial incontinence.

October 17th. Recurrence, left anterior quadrant, one and one half inches.

December 1st. Recurrence in liver. Patient died about two months later.

CASE LII.-November 7, 1898. Mrs. L. B. A., age thirty-

Family history negative.

Patient had always been constipated until one year ago, when she began to have griping and alternating diarrhœa; frequent stools with loss of blood and mucus. Loss of flesh. Anus normal. Mucous membrane smooth in the rectum up to three inches, where was felt a large cauliflower growth, entirely surrounding the rectum and firmly attached to the sacrum. Section removed. Pathological report, adenocarcinoma.

November 12th. Bone flap operation. Removed six inches of the bowel; tied only four vessels; some difficulty in loosening the bowel from the sacrum, but bone did not seem to be involved. Vagina was cut into and sutured; peritonæum sutured; end to end suture of gut.

November 20th. Patient progressed well. Bowels moved

yesterday, and to-day there was a slight fistulous opening into the posterior wound.

November 30th. Attempted to sew up fistula; rest of the wound healthy.

December 7th. Stitches gave way; still leaking. December 15th. Patient left the hospital, well but for

March 1, 1899. Patient felt well and had gained in flesh. Fistula closed

October 15, 1899. Recurrence in situ and in liver. Patient died about four months later, chiefly from liver

symptoms. Suffered very little pain.

CASE LIII .- October 28, 1903. Mrs. H. I., age forty-five. History of cancer in family.

Personal history clear. Increasing constipation for years.
Headache and backache, worse at night. Dragging across the lower portion of the abdomen. Discharged a great deal of gas. Constipation relieved by enemas, catharties produce a diarrhea. Small external hemorrhoids about the

| Number: Age: | Sex: | Period of symptoms existing before operation | Pathological condition: | Location of disease: | Extent of disease: | Organs involved: | Operation performed | Treatment of intestinal ends: | Immediate result of operation: |
|-----------------|-------|--|---|--|---|------------------------------------|--|--|--------------------------------------|
| 303 | | nine months | Adenocarcinoma | three and one half inches above anus | anterior wall, one inch | rectum | bone flap resection | end to end | recovery, fistula |
| 3753 | 3 M | . ? | Adenocarcinoma | ten inches | four inches | sigmoid | abdommal resec- | Murphy button re- enforced | recovery |
| 3836 | \$ F. | six months | Adenocarcinoma | above anus three and one half inches above anus | two and one half inches, entire cir- cumference | rectum only | Termeal excision | gut sutured in anus | recovery |
| 394 | 8 M | . two months | Adenocarcinoma | just inside the | one half inch | anal canal | perineal excision | sutured to anus | recovery |
| 404 | o F | eighteen months | Adenocarcinoma | four and one half inches above anus | four inches, entire circumference | rectum and sigmoid | abdominoperineal | invagination through anus | death |
| 414 | 5 F | eighteen | Adenocarcinoma | one inch above anus | three inches, en- tire circumference | rectum | perineal excision | sutured gut in anus | recovery |
| 126 | 0 F | months nine months | Adenocarcinoma | three and one half inches above anus | four inches, entire circumference | rectum, attach- ment to uterus | vaginal resection | end to end suture | fistula |
| 434 | 2 M | three years | Adenocarcinoma | four inches above anus | three inches, re- sected eight inches | rectum only | bone flap resection | end to end, Mur- phy button | recovery, fistula |
| 442 | 2 N | . two years | Colloid cancer | two inches above anus | five inches | rectum only | preliminary colos- tomy, boneflap re- section | end to end suture | recovery, stricture |
| | | one year | Adenocarcinoma | four inches above anus | sected fifteen | rectum and sigmoid | abdominal route | colon invaginated and sutured out- side anus | stricture (cut) |
| 4'1 3 | 7 M | . two months | Epithelioma | one half inch above anus | three quarter inch | | perineal excision | sutured to anus | recovery |
| 4,75 | 9 M | . Polyp ten | Sarcoma | three inches above anus | three inches, en- tire circumference | rectum only | bone flap resection | end to end suture | fistula |
| 4 4 | | . indefinite | Melanosarcoma | just above anal margin | | rectum only | dissected out and burnt off with Paquelin | | recovery |
| | | . thirteen months | Adenocarcinoma | one and one half inches above anys | about one inch | rectum, pos- terior wall | permear excision | sutured into anus | |
| 05 | b M | . ten years | Colloid carcinoma; recurrent after ten | margin of anus | two and one half inches, entire cir- cumference | rectum, anus | perineal excision | sutured into anus | recovery |
| 51 7 | s N | . six months | years Adenocarcinoma, colloid | just above mar- gin of anus all round | three inches | rectum only | perineal excision | sutured into anus | recovery |
| 523 | 5 F | one year | Adenocarcinoma | three inches above anus | four inches | rectum only | bone flap resection | end to end suture | recovery, fistula |
| 53 4 | 5 F | indefinite | Adenocarcinoma | three quarters inch above anus | one inch, rectum posterior wall | rectum only | posterior coccy- geal excision | edges sutured | recovery |
| 54 41 | , M | . one year | Adenocarcinoma | seven and one half inches above anus | eight inches re- sected | | abdominal resec- | colorectostomy | recovery |
| 5554 | 4 M | . three years | Adenocarcinoma | middle loop of sigmoid | six inches resected | | abdominal resec- tion | end to end suture | recovery |
| 5650 | o M | . six months | Adenocarcinoma | three and one half inches above anus | two and one half inches, entire cir- cumference | | perineal excision | gut sutured in anus | recovery |
| 57 · · · · 4 | 2 N | . one year | Adenocarcinoma | three inches above anus | one inch, anterior wall | | perineal excision | gut sutured in anus | recovery |
| 586 | 9 N | , about one year | Adenocarcinoma | three and one half inches above anus one and one | nine inches ampu- tated | | hone flap amputa- | gut invaginated through anus and sutured | death |
| 592 | | more | Adenocarcinoma | half inches above anus | two and one half inches, entire cir- cumference | | perineal excision | gut sutured in anus | recovery |
| 603 | | stricture for years | Incipient cancer | just above anal margin | five inches, entire circumference | | perineal excision | gut sutured in anus | recovery |
| 516 | 0 3 | I, four years | Papilloma, carcino- matous | seven and one half inches, and nine inches above anus | | sigmoid | excised and cau- terized through proctoscope | ************* | recovery |
| 63 | 7 F | . ore year | Adenocarcinoma | just above mar- gin of anus | three and one half inches, entire cir- cumference | | perineal excision | sutured gut to | recovery |
| 634 | 12] | f. not noted | Adenocarcinoma | one half inch above anus | three and one half inches, entire cir- cumference | | perineal excision | sutured gut to anus | recovery, primary union |
| 61 . | 10 2 | 1. we year | Adenocarcinoma | one and one half inches | one and one half inches, posterior wall | | perineal excision | sutured gut to anus | recovery |
| , , (| 3 1 | A. H e venrs | Adenocarcinoma | above anus three and one half inches above anus | six inches, entire circumference | seminal vesi- cles | bone flap resection | | fistula |
| 11 | 15 I | nine months | Adenocarcinoma | two inches | three inches, en- tire circumference | | bone flap amputa- | anus | recovery |
| 672 | 34 I | three months | Adenocarcinoma | above anus | one inch, poster- | | perineal excision | gut sutured in | recovery |
| ((| | | Adenocarcinoma | at anus | three and one haif | | combined opera- tion, colostomy excised with elec- | | death |
| | 38 J | | Adequatements | four and one half inches above anus | three quarters inch anterior wall | | trocautery through | | recovery |
| | | 1. six months | Adenocaten oma | three and one half inches above anus | two inches | rectum, adher- ent to bladder | | ured to anus | recovery |
| | | three years | Adenocarcinoma | at anus | two inches | rectum, vagina | cantery (O'Beirne) | gut sutured in | recovery |
| | | f. rarmath | Adenocarcinoma | at anus | four inches | rectum and glands rectum and | permeal excision | anus | death. |
| 72. | 41 | M. ex vest | Adenocarcinoma | four inches above anus | five inches | prostate | Mochel & Tesection | · · · | eleventh day |

| Cause of death: | Functional result: | Period of recurrence: | Site of recurrence: | Result of recurrence: | Length of life following operation: | State of friends operation: |
|---|--|-------------------------------------|---|--|-------------------------------------|--|
| | good | | ın situ | death about six | | well up to recurrency. |
| | perfect | tour years | in liver and | death one year | five years | well for four years or more. |
| *************************************** | good for three and one half years | three and one half to four years | m situ and in liver | later death | four years, one | excellent for nearly four years. |
| | perfect | none | | | seven years | still living and well. |
| shock and infec- | | | •••••• | | , | |
| •••••••• | incontinence | nine months | in situ | not known | nine months | no improvement. |
| • | perfect | none | | ***************** | four years | well when last heard from, two years since. |
| | perfect | none | | | three and one half | , , , |
| **************** | poor at first, now good | none | | | seven years, eleven months | excellent, still living, has gained ninety pounds in weight. |
| ••••• | perfect after stric- ture was cured | none | | | five years, six months | excellent, still living, in perfect health. |
| •••••• | perfect | none | | | five years, nine | still well and in perfect health. |
| ••••• | good after fistula healed | none | • | | months | in good health up to 1907. |
| *************************************** | partial incontinence | none | | | two years | *************************************** |
| ************* | rerfect | none | | | two years | left district about two and one half years after operation, well when last seen. |
| | partial meontinence | none | | | four years | still well and without recurrence. |
| | partial incontinence | in nine months | in situ and in liver | death | one year | comfortable for nine months. |
| • | good | in twelve months | in situ and in . | death | eighteen months | good for twelve months. |
| *************** | erfect | none | | | three years | excellent, |
| | good | six months | liver | death | ten months | comfortable for six months. |
| | good | : one | | | five years | excellent. |
| | partial incontinence | eighteen months | prostate and blad- der | death in seven | two years | fair for eighteen months, after that miserable. |
| nneumonia. | good | none | | | eighteen months | excellent up to time last heard from, three years since. |
| eleventh day | | | | | | |
| ••••• | good | n-ne | | | one year | excellent, not able to trace her after one year. |
| | partial incontinence | none | | • | four years | excellent. |
| •••••• | perfect | none | | | three years, eleven months | excellent. |
| | good, stricture | nine months, eleven months later | in situ, finally in liver | removed three times: did colos- | three years | very comfortable for two years. |
| | rerfect | six months later | postrectal glands, | times; did colos- tomy; death removed; death in eleven months | thirteen months | never good. |
| | · · rfect | | | | three years | living and comfortable when last heard from. |
| | erfect | in about two years | ın bladder | death | two years, six months | excellent for two years. |
| | e and, except for | twelve months | in situ and in | death | about eighteen | well for nearly one year. |
| | | one year | liver postrectal glands and liver | death | months eighteen months | never very good |
| embolism | | | | | | |
| ••••• | | | | | three and one half years | excellent so far as rectum is concerned, still living. |
| | good, except for wind | | | | eighteen months | excellent when last heard from. |
| | | not entirely | | death | | great suffering after about ten months. |
| | partial | ? | | | | left hospital before complete healing and never returned |
| ressure slough of interior pubic ar- | | | | | eleven days | ••••••• |

anus, otherwise normal. Small nodular mass in the left posterior quadrant of the rectum, three quarter inch above the anus.

ne anus. Movable, not painful; no glands enlarged. November 3d. Split rectum open posteriorly, excised the growth, and sutured the parts together, leaving postrectal wound open for drainage. Pathological report, adenocar-

November 15th. Small postrectal sinus, but does not enter rectum. Patient leaves hospital for home.

Doctor reported no recurrence three years later.

CASE LIV.—September 3, 1903. Mr. O. S. R., age forty-

Family history negative.

Hard drinker. Always constipated. About one year ago had griping, flatulence, and loss of appetite, followed by alternating diarrhea and constipation. Now passes mucus tinged with blood. Ten to fifteen stools a day. Anus normal. Rectum normal up to rectosigmoidal juncture. Proctoscope showed granular ulcerating mass, occluding the calibre at this point. Tumor could be felt through the abdominal wall when lifted up with the tube.

September 21st. Abdominal resection; eight inches re-

moved; colorectostomy. Liver hard, but not nodular.

Pathological report, adenocarcinoma.
September 25th. Nothing unusual; bowels moved on the second day; guy strings still hanging.

September 30th. Guy strings all away. Surgically the patient is doing well, but does not gain strength.

October 15th. Doing better; wound healed; opening at

junction of rectum and sigmoid ample.

November 26th. Patient gained strength and some weight, but color is not good. Left to-day for Canada.

March 5, 1904. Recurrence in liver; gradually losing. Patient died July, 1904, nine months after operation. CASE LV .- May 8, 1903. Mr. H. F. R., age fifty-four.

Family history clear.
Pneumonia once. Social drinker. Three years ago began to have pain in the left side. Ischiorectal abscess about six months ago. Was operated upon for hæmorrhoids about a year ago; successful. Constipated for years; slight discharge of blood and mucus at stool. Anus normal. tum normal up to the junction with sigmoid; here the folds were thickened and duplicated. Stricture eight inches from the anus; the proctoscope would not pass; unable to inflate by artificial or atmospheric pressure, bowels forced air out along tube. Hard, sausagelike mass in the left iliac fossa.

May 12th. Operation. Abdominal resection. Malignant stricture (scirrhus), involving the lower loop of the sigmoid, three and one half inches in extent. Removed six

inches; end to end suture; no drainage

September 20th. Convalescence uneventful. December, 1907. Patient well.

CASE LVI.—December 14, 1903. J. P. W., age fifty.

Family and personal history clear.

Seven years ago had nervous prostration. Numb pain in the lower part of back for a year or more. Six months ago had difficulty in having stool; much pain; could feel a tumor in the rectum with his finger. Had bleeding then, but not since. Alternate diarrhœa and constipation; discharged mucus at stool. Anus normal. A hard, nodular mass could be felt, movable, three inches up the rectum, and extending two and one half inches upward; top could be reached by dragging the mass down. Index finger fitted tight in calibre.

December 16th. Perineal operation; removed nine and one half inches; comparatively little hæmorrhage; sphincter preserved. Pathologist's report, adenocarcinoma.

January 2, 1904. Patient left hospital. Posterior fistula still

discharging.

February 10th. Rectum well; patient at work; some cystitis.

June 30, 1905. Recurrence in prostate, and small nodules in gut; removed, but found bladder wall involved. Parts healed, but cystic symptoms continued. Bright's disease developed.

Patient died December 1, 1905, two years after the first operation. Comparatively comfortable, and able to work

CASE LVII.-January 10, 1904. Mr. A. L., age forty-two.

Family history, clear. One year are began to have griping cramps, relieved by cold water injections; a feeling of unfinished business after

stool; cramps in the transverse colon. No pain in the stoot, clamps in the tansverse cools. No pain in recetum; recently some discomfort in the sacral region. Anus normal. A small, hard, nodular plaque was felt in the anterior wall of the rectum, three inches up; movable; nothing visible higher up; no glands enlarged. Pathological report, adenocarcinoma.

January 25th. Perineal extirpation, whole circumference removed; no complications. Convalescence uneventful. Continence restored.

December 15, 1905. Patient reported himself well.

No news later.

CASE LVIII.-November 18, 1903. Mr. M. O., age sixty-

Family and personal history, negative.

Constipated for years. Began to go to stool without adequate results a year ago. Blood first passed six or seven months ago. Flatulence and loss of appetite. Urgent morning stool, followed by ten or twelve movements a day, with blood and mucus. Pain in the sacrum, not acute. Anus normal. A large, friable nodular mass, three and one half inches up the rectum, extending beyond the reach of the finger, but movable. Pathological report, adenocarcinoma.

November 24th. Bone flap amputation; nine inches resected: anus denuded, and gut invaginated and sutured to the mucocutaneous margin. Guy strings through the meso-rectum and edge of the wound. Posterior drainage. rectum and edge of the wound.

November 30th. Patient did well until to-day, when he had a chill, and sepsis seemed to be developing; the wound and peritonæum seemed to be in good condition.

December 1st. Patient had double pneumonia; temperature, 104° F.; respiration, 42.

December 2d. No improvement.

December 4th. Patient died; wound in good condition.

Case LIX.—June 20, 1904. Miss M. J., age twenty-two. Patient was first seen in March, 1904; operation advised, but refused. Returned on June 13th; operated upon on June 21st. History unobtainable, as the patient spoke only Syrian, which we could not understand. Had diarrhoea, loss of blood and mucus from rectum; extreme pallor. Anus normal. Large cauliflowerlike tumor, friable, at about one and one half inches from the margin of the anus; freely movable; calibre barely admitted index finger; the growth extended about two inches upward into the rectum.

June 21st. Excised tumor by perineal method. Removed six and one half inches. Musculature sutured to bowel, mucous membrane to skin; no drainage whatever introduced

July 22d. Patient left the hospital perfectly well. Good continence. She never returned for examination; we were able to trace her for one year, the report being that she was perfectly well. Since this time no information has been received.

CASE LX.-February 18, 1904. Mrs. R. P. A., age thirty-

Began to menstruate at twelve. Born constipated, and had suffered from prolapse; pain on defæcation. Imperative demand for stool followed operation for stricture and hæmorrhoids. Considerable discharge of mucus. Right kidney movable. The anus was relaxed and moist. The rectum was irregularly narrow for five inches up, apparently congenital, but nodular. Sphincter hardly ap-

February 23d. Operation performed. Vaginal excision: posterior drainage; gut easily brought down; seven inches amputated. Circulation good. Sutured musculature to gut, and mucous membrane to skin.

March 1st. Primary union; functions good. Patholo-

gist's report, incipient carcinoma. January 5, 1005. Slight constriction at anus, otherwise

perfect.

March 29, 1908. Still well.

CASE LXI.-June 28, 1904. Mr. A. I. C., age sixty.

Family history, clear.

Four years ago had diarrhoea and passage of blood; blood less now than two or three years ago. Imperative diarrhea, three to ten stools per day, with blood and mucus; no discharge except at stool. Anus normal. The rectum is bright red, creded, and congested throughout Marked papilloma at the junction of the sigmoid; stricture at this point, but it does not feel hard or fibrous. There

was a cracked, irritated, bleeding appearance to the mucous

membrane above and below the papilloma.

June 30th. Removed papilloma with alligator and specimen forceps; no anæsthetic; cauterized with an electric cautery through an operating speculum, No. 1. No hæmorrhage, but packed. Pathological report, adenocarcinoma.

July 10th. Diarrhea had ceased; was able to pass proctoscope through the stricture to-day

April 5, 1908. Patient continued well.

Case LXII May 27, 1904 Mrs. S. W. C., age thirty-

Family history, negative.

Patient had always been constipated. A year ago she began to have increasing frequency of desire to stool; pain at the end of spine on defæcation. Bowels moved from ten to fifteen times a day; normal solidity after morning stool of blood and mucus. Smarting and aching pain in the rectum after stool. Anus normal; sphincter tight. Just within the anus a hard, ulcerating, nodular mass, extending all around the rectum, and two and one half inches up; calibre not materially lessened. Bled easily on touch; no glands to be felt.

June 9th. Perineal operation. Very difficult; broke

through into gut in dissection. Great prostration.

June 10th. Had suffered greatly from shock. Had in-

fection about wound.

June 20th. During my absence two abscesses broke, and there were now two cavities, anterior and posterior, discharging freely. Am afraid to lay them open lest the gut be loosened from its attachments. Patient gaining.

October 1st. Patient was kept under care all summer;

finally laid abscesses open, and they are now healed. March 17, 1905. Small nodular recurrence in margin; removed.

January 19, 1906. Recurrence in situ; removed two and

one half inches

November 5th. Marked recurrence. Colostomy done after finding prevertebral glands enlarged, and involvement of the liver.

May, 1907. Died, three years after operation.

CASE LXIII.-July 8, 1904. Mr. S. J. H., age forty-two.

Family history, negative

Personal history, negative. Always constipated. Three months ago had a feeling of bearing down, except when sitting or lying; desire to go to stool on rising in the morning. Flatulence and indigestion; stools are now thin and bloody, with occasionally a discharge of mucus. A hard, lumpy protrusion at stool, reduced by hand. Gedematous skin tabs about the anus. The rectum was filled by a large, hard, nodular, cauliflowerlike growth, beginning one half inch above the external sphincter, and extending three and one half inches up. Admitted the first finger.

July 15th. Operation. Perineal method; removed five inches; apparently a most complete operation. Gut easily brought down and sutured to the anal margin. External sphincter preserved. Pathological report, adenocarcinoma,

malignant type

July 20th. Union primary; not a complication, July 28th. Patient well; went home to-day.

December 3d. Recurrence in margin and in posterior glands, one inch above anus. Removed under cocaine: severe hæmorrhage from superior artery in removing the glands, controlled by leaving clamp on.

February 1, 1905. Recovered and feeling very well, except for cystitis; going South for recreation.

August 20th. "Liver trouble" developed in June, and

patient died August 12th.

CASE LXIV.-July 15, 1004 Mr. T. M. R., age forty

Suffered from pain and bleeding for one year: had an operation for harvorrhoids eleven months ago; bleeding stopped, pain never entirely relieved; soreness increasing normal. There was a hard, nodular mass one and one half inches above the anus in the posterior wall. Movable, no constriction. Adenocarcinoma.

Operated, perineal method; removed four July 20th.

and one half inches

August 30th. Convalescence uninterrupted. January, 1907. Patient well.

1908. Loss sight of, supposedly well.

CASE LXV.-August 29, 1904. Mr. T. D. J., age sixtythree

Always rugged and healthy; had syphilis forty years ago. Began to lose flesh in 1900, when in the Spanish-American war. Frequent and small stools, occasionally streaked with blood, no mucus; bad odor; morning diarrhœa. Anus normal. In the rectum, three and one half inches up, was a large, nodular mass, slightly movable; calibre almost obliterated, felt by upward pressure and deep palpation of the abdomen.

September 9th. Bone flap operation; removed seven and one half inches. Resection; end to end suture. Seminal vesicles removed; peritoneal cavity opened and sutured. October 1st. Left hospital well, except for a small pos-

terior fistula.

January 1, 1906. Reported well.

March, 1908. Died in March, 1907, recurrence in bladder.

CASE LXVI.—September 2, 1904. Mrs. E. L., age fifty. Family and personal history, negative.

Nine months ago began to have a nagging desire to go to stool. Losing in weight. Formerly constipated, now has morning diarrhea; discharge of blood and mucus at stool. Anus practically normal; sphincter relaxed. Two mehes within the rectum was a hard, nodular, sloughing tumor, barely admitting the finger, but was easily dilated; extended three inches up, and have very recepble.

extended three inches up, and was very movable.
September 12th. Bone flap operation. No complications. Anus denuded, and upper end of gut invaginated; musculature sutured around the gut; mucous membrane sutured to the skin. Pathological report, adenocarcinoma.

October 12th. Patient sent home, apparently well. June, 1905. Recurrence in situ and in liver; no further report.

CASE LXVII - September 6, 1004. Mrs A N, age thirty-four.

Family and personal history, negative.

Indefinable sensation in rectum. Sometimes dull, aching pain. Formerly constipated, but bowels now move four or five times a day, with urgent morning stool, discharge of nucus, tinged with blood. Anus normal. A small nodu-lar growth in the posterior wall of the rectum, movable, and producing no constriction, one and one half inches up, extended about one inch.

September 12th. Operated. Perineal method. Removed four and one half inches.

October 1st. Patient left the hospital to-day. Posterior fistula persisted, otherwise well.

January 26, 1905. Patient returned for an examination, feeling fairly well, but fistula had never healed. There seemed to be some induration at its upper end, but it felt more cicatricial than neoplastic. Advised irrigation.

September, 1906. Recurrence in liver. Patient died about eighteen months after the operation. CASE LXVIII.—October 7, 1904. Mr. N. W., age sixty. Tuberculosis in father.

Three years ago fistula developed. Operated upon ten months ago. Discharge from rectum and difficulty in retention continued. Bowels were regular, and there was very little pain. A protruding cauliflowerlike growth extended up the rectum five and one half inches. Lymphatics not

October 12th. Combined operation, making inguinal colostomy. Removed ten inches of the lower end of the rectum through the perineal floor; introduced drainage

October 17th. Patient did well until to-night, when he was found in a collapse, and died three hours later. Autopsy revealed no cause for his death unless coronary embolism. Pulse 72 and temperature 98.8° F. one hour before collapse.

CASE LXIX.-November 25, 1904. Miss L. S., age thirty-eight.

Father had indistinct history of neoplasm of rectum. Old history of retroversion and use of pessary. Operated

for fissure and hamorrhoids nine months ago; no relief. Irregular diarrhea; discharge of blood and pus. Internal blind fistula with pocket at anterior quadrant of anus. Sphineter normal. Rectum empty, catarrhal; small, broad based tumor, four and one half inches above the anus, on the anterior wall.

November 20th. Excised tumor and cauterized base with

an electrocautery. Incised fistula. Pathological report, adenocarcinoma

September, 1906. Very small growth, three and one half

inches in, similar to the first; removed in the same way.

March 30, 1908. No recurrence, patient perfectly well.

CASE LXX.—January 2, 1905. Mr. J. D., age twenty-

Family history, clear.

Personal history, doubtful venereal. Lost twenty pounds in six months, began in hot weather; previously constipated. Now has constant desire to go to stool. No pain; iregular diarrhœa; discharge of "slime." Anus normal. Rectum catarrhal. Hard, nodular mass three and one half inches up, barely admitted the finger; very slightly movable; extended five and one half inches.

January 8th. Bone flap operation; very difficult and prolonged; removed many glands, difficult to detach from the bladder. Brought the gut down and sutured to anus, Hoch-

enegg's method.

January 10th. Patient reacting well. Temperature, 101° F.; pulse, 110.

January 15th. Patient continued to do well; bowels had not moved; there was considerable suppuration from posterior wound.

January 20th. Bowels moved; some leakage. February 1st. Patient up and about; fistulous tract dis-

charging freely, and faceal discharge through it.

April 10th. Patient well except for slight posterior fistula, which is growing smaller all the time.

Patient reported well eighteen months later. Left the city, and address unknown.

CASE LXXI.-April 14, 1905. Mrs. A. T. F., age fifty-

Patient had had a tuberculous fistula for thirty years, but process in abeyance. In January, 1902, had a severe hæmorrhage from the rectum, followed by a nagging diarrhoa, and a smaller hæmorrhage six months ago, since which time she suffered from more or less bleeding and purulent discharge from the rectum. Recurrent headaches; rectovaginal fistula established three or four months since. Bowels moved frequently; cutting pain after bowels move, preceded by blood and mucus. Carcinoma occluding the anus, opening into the vagina; tuberculous fistula on left Carcinoma involved the rectum two and one half inches and the vaginal wall.

April 15th. Scraped out and cauterized. October 1st. Patient had used radium pencil all summer. Tumor remained about the same in density, but there was no extension or increase since it was cauterized. The fistula, the inner opening of which was burned out, had entirely healed.

December, 1907. Patient died from general peritoneal

and liver involvement; great suffering.

CASE LXXII.—April 30, 1905. Mrs. A. P., age fifty-

Family history negative.

Patient had been operated upon four years ago for rectal abscess. For the past four months she had noticed an enlargement in the left groin; severe pain in the abdomen; stools had been painful; always constipated. Anus very contracted, hard, and indurated; finger could hardly be introduced into the rectum, which was filled with a large carcinomatous mass, friable and nodular, and extending two

May 6th. Operated. Perineal excision of growth: five inches removed; gut brought down and sutured; inguinal

glands removed on both sides

May 10th. Rectal wound healing very nicely; some of the sutures in the mucous membrane had cut through, however. Pathological report, adenocarcinoma. May 15th. Dressing removed. Inguinal wounds healed

by primary union; rectum healing, but some granulation

around the anterior margin

May 25th. Patient left the hospital; some granulation around the margin of the wound. Never returned; no doubt, however, she had a recurrence.

Case LXXIII.—May 6, 1905. Mr. D. G., age forty-one. Always constipated; began to lose blood a year ago; frequent desire to go to stool, but without effect; very little pain and no discharge except when bowels moved. Anus normal. In the rectum, four inches above the anus, was a large, movable cancer. Calibre admitted index finger.

May 10th. Bone flap operation. Strong idnesions of the tumor to the sacrum and the prostate. Resected seven inches of the bowel; considerable hæmorrhage.

May 20th. Patient did well until to-day, when he had a large secondary hæmorrhage and died. Autopsy showed slough in the side of internal pudic artery, probably due to too tight packing.

(To be concluded.)

PSYCHOTHERAPY.*

BY ANNA M. STUART, M. D., Elmira, N. Y.

Whether the title of this paper will awaken any interest among a body of physicians or not, is uncertain, but if the same subject is discussed in a lay company, the interest is intense, and every one is agog like the ancient Gallilæans, for signs and wonders.

The religion of Mrs. Eddy has cut a swath through the world like that of Mahomet; Mahomet promised his followers a sensual paradise in the next life, but Mrs. Eddy promises hers one in thisbodily comfort and riches, and freedom from all responsibility for the sick, the poor, or the sinful. No wonder she makes proselytes by the thousand. More than this, in spite of her absurdities, her dynamic character has set in motion a hundred kindred movements that strive to be more rational, and yet follow along the same path. Nothing is more firmly fixed in the minds of the laity than their belief that psychotherapy is to be the coming wonder, that it is now only in its infancy, like ærial navigation and wireless telegraphy.

That such a power exists is true beyond dis-cussion, but that it is an infant with a great future is a matter for grave doubt. My belief is that they have not an infant but a changeling in the cradle—a little old dwarf, old as the Middle Ages, old as Homer, old as Egypt, old as Job, and the Chaldean pasture lands. He has been well tried. We know all about him, his power and his limitations.

Every skillful physician is a mind healer, if he is not that, he does not succeed no matter how great his knowledge of disease. He considers the mind of his patient in everything he says and does, in his choice of attendants, and in his instructions to the family. Every word spoken in the sick room is as carefully weighed as the medicines, and he will at once discharge a nurse whose mental atmosphere is not healing to the patient. He seldom tells the names of his medicines because his best remedy will play him false if the patient has a groundless prejudice against it.

The physician may be ill himself or in grief; you may wound him, anger him, or even discharge him. but he will bear everything with a placid smile in the sick room. He has built a wall of tranquillity. courage, and hope, about his patient, and he will never break it down. He knows that he must make frequent calls in self limited diseases, also even in hopeless diseases, because the steadying presence of the one who knows will bear the ship better through the storm, or quietly down to its last port. This is the art of medicine, not taught in our schools,

[&]quot;Read before the Chemung County Medical Society.

but handed down from man to man—the mantle of Hippocrates.

Now the science of medicine is a very different old lady. She is suspicious of everything which borders on the mysterious and occult. She does not wish to investigate anything which is im-She classes all inexplicable phenommaterial. ena together under the head of therapeutic suggestions, then draws her skirts carefully away. One cannot blame her. She has suffered much at the hands of sorcerers, magic mongers, and charlatans. She has been for centuries extricating herself from the superstitions of the Middle Ages. There was a time when her pathology was confounded with the movements of the stars. There was thought to be a vast image of each man called his archetype, projected on the highest heaven of the empyrean—the man's diseases were caused by the action of angels and demons, together with that of constellations and planets on the organs of this archetype. A survival of this teaching is still seen in the man on the front of the almanac. Her therapeutics has at last dropped out amulets, charms, relics of saints, pilgrimages, etc. She says, "I am an inductive reasoner-you can make no rule for me, and bring me no remedy that you cannot hand over to the staffs of a hundred great hospitals, and prove by volumes of statistics." Nevertheless, in her sadder moods she bewails her own inexactitude.

Astronomy has shaken off astrology forever, and walks hand in hand with mathematics; and her sister chemistry is freed from the old alchemy and steps accurately with numbers. But medicine, poor medicine, is always helped or thwarted, by an unknown quantity in all her calculations, the mind of man which cannot be taken out while his body is being mended. She gets a new fad or discovers a new remedy. Her professors rush after it, and the sick and crippled follow with a shout. But soon, some one's faith fails, and no more sick are healed after the troubling of the waters. Then we say to medicine, "How was it that the treatment you now disown, actually healed in the days of your enthusiasm?" and shamefacedly, the "old lady" confesses it was the same then as in the Middle Ages, mere therapeutic suggestion. The sacred Bambino, or the relics of St. Ursula, would have done as well.

The first to present mental healing, as such, to the scientific world, was Mesmer in the eighteenth century. He was inspired by the writings of Paracelsus. That brilliant but aborted genius thought he saw a great light in the idea of the unity of man with the universe, and was dazzled by the vision. The evolutionists have since shown to the smallest detail, this unity of man and the uinverse. But Paracelsus thought he had reached with a bound the source of all knowledge; the answer to the ancient Hindu question, "What is that, knowing which all things are known?" He wasted his energies and destroyed the value of his discoveries by disregarding the small, but still precious accumulation of scientific observation. He publicly burned the books of Galen. And at the last gave himself up to the study of mystic Hebrew writings called the Caballa. Mesmer evolved the theory of animal magnetism. He went to Paris and threw that city into wild excitement by his startling cures of dis-

ease. The medical men scoffed at him, but he believed in himself and asked for an investigation by the Academy; which was granted him. There was an American present as member of that commission, Benjamin Franklin, who was our minister to France. The commission admitted his facts but denied his theories, and two years afterward Mesmer was driven from Paris in disgrace. Not until Charcot made public his experiments in the Salpêtrière, was this strange power recognized by science under its new name, hypnotism. It is to the point here to quote the late writings of Charcot after all his experiments. He says the hypnotic state is accompanied with grave dangers to the subject, and should never be induced except under great necessity. Coming now to our present time, we find a host of eloquent lay writers spreading themselves gloriously in the train of Mis. Eddy's comet. The peo-ple call them all "new thought." There is even a journal by this name. There is nothing new however, in their philosophy, it is all borrowed from the modern German school of idealism, and that, in turn, is evolved from the neoplatonists, and can be traced back through Plotinus Porphysy and Plato. and one could still use as good textbooks the most ancient Hindu scriptures, the Bhagaradgita and the Upamshads. In fact there is a little gift book of extracts from the Upamshad, in fancy binding. All this, however, is in no way interesting to the physician. Quite in contrast, however, is the book of Paul Dubois, professor in the University of Bern, you have received an advertisement of last week, telling of the Emanuel Church movement and of their endorsement of this book. You must realize in reading that folder, that probably it has been sent, not only to every physician, but to every minister, in the United States, as well as to laymen, and when you read the book you must think of the effect upon all these many readers.

Dubois does not at all assert that he can cure physical disease by mental means. The originality of his work lies in his rather arbitrary classification of a number of neuroses as purely mental diseases, not dependent in any way upon any physical disease which may accompany them. He calls them psychoneuroses, and includes all kinds of nervousness from neurasthenia, hysteria, melancholia to degeneracy, digestive troubles, emotional diarrhœa, habitual constipation, polyuria, insomnia. The insanities are a step further, and he does not touch them. He mercilessly scores physicians for treating these cases on a physical basis, making analysis of the stomach, repairing uterine tears, etc. He firmly, pleasantly, and persuasively explains to these patients that they are not sick people, but fools, that they must take themselves in hand and reform. He speaks constantly of the necessity of being patient and persuasive. He has an eye for just one thing—a neurosis. He admits that even if he discovers tuberculosis, he ignores it, because otherwise he would weaken his power of cheerful suggestion. See what it is to be a specialist. He cures his specialty, and takes no further responsibility. He objects to methods of exact diagnosis, on the ground of their increasing the fixed ideas of the patients. He admits the necessity of surgery for appendicitis, and similarly serious troubles, but he scoffs at medication,

calling it a bungling form of suggestion, practised because the public has been trained to it. He says "we are like the Roman augurs, who could not

think of themselves without laughing.

Imagine the effect of all this on the minds of the public already bitten with the superstitions of wonder working. When we begin to laugh at ourselves, to throw stones at our own art, we deserve the sneers we receive. Whoever is so discouraged, lazy, or cynical as to lose his faith in his therapeutics, let him read the ringing article of Jacobi in the New York State Journal against Therapeutical Nihilism. Read it over twice and highly resolve that none shall die because of his slackness. The public —alas, the dear public, as many a disappointed man has called it-makes no nice distinctions; all medicines will cure or none; if any diseases yield to mental treatment, why not all. The public is a deductive reasoner. "Why," it says, "if," then "so and so, that is reasonable"; forgetting there may be a flaw in the premises. The public is being rapidly educated—flying machines and wonderworking—no more tedious methods—just as scientific medicine is emerging with real trophies-diphtheria, typhoid fever, tuberculosis, malaria, all in hand to be wiped out for the near future generations. Think of a happy world in which the young do not die. Then, too, the solution of cancer may not be far off. For all this, we need the cooperation of society—only a society that believes in germs and disease, will buy watersheds, will police milk districts, drain marshes. segregate tuberculosis patients, build model tenements, stop the traffic in child labor, pay for cancer laboratories.

Just as we are on the eve of these great victories this cloud appears on the horizon, this wave of superstition from the Middle Ages, that will blot out our advance as the ashes blotted out Pompeii.

You think I am extreme; just wait ten years until this leaven has leavened the mass of public sentiment, you will see a great falling off in the endowments to hospitals, medical schools, and laboratories. People have always grudged their pity, and will soon have a good excuse for withholding it. Hear what the English divine, Mr. Chesterton, says of Christian Science. I quote it here because it applies equally well to the popular idea of the new thought and therapeutic suggestion. "I say Christian science is a mean and disgusting philosophy, preached by people who are quite nice-preached, in fact, by my personal friends. They are all right,it is only their creed that comes from hell. I use the phrase quite calmly and quite literally. The doctrine that pain and death are not real at all except in so far as their victims are cowardly enough to submit to them is a diabolical doctrine, obviously calculated to produce all the purely diabolical qualities, such as intellectual cruelty and contempt for the weak. . . Ever since the crucifixion a certain actuality, and therefore a certain sanctity, has clung around the hard pain of prosaic men. Men in misery were sometimes dismissed as nuisances who could not be cured, but they were never despised as cowards who ought to have cured themselves.

If a minister was really anxious to ameliorate the suffering of humanity, I could educate him in a week I should like him to spend that week in a large children's hospital and live among the little crippled bodies and wizened vellow faces of those innocents slain from their birth, who shall never come out of tribulation, for they are destined to bear the burden of all the sins and ignorance and greed of our society. There let the minister ask and answer his questions as to the actuality of disease.

Did any of you, you who have walked these hospitals, ever try to sleep with a limb in a plaster cast? If you had my experience you did not sleep, but you saw visions; visions of long vistas, interminable vistas of little white beds, with little bodies stretched on hard boards, and little old patient faces, and thin white fingers. You felt ashamed to groan, but you seemed to hear a bell intoning, not for those who go down to the sea in ships, but for all little children sleeping in plaster this night, in all the hospitals in

all our great cities.

Let the minister remain a week, and I trust he will not come out ready to amuse himself or his surfeited parishioners with experiments on neurotics, but he will manfully put on the cloak of his own calling and from his vantage of the pulpit thunder against the wrongs of the world. He will have sermons for a hundred years and he will never have to change his text—"In Rama there is a voice heard, Rachel weeping for her children.'

656 PARK PLACE.

A CASE OF TUBERCULOUS PERICARDITIS; EMBOLIC HEMIPLEGIA THREE DAYS AFTER PARACENTESIS OF THE PERICARDIUM.*

BY MORRIS MANGES, M. D., New York, Visiting Physician, Mount Smar Hospital.

The patient, Michael P., aged nineteen, occupation porter, was admitted to my service at Mt. Sinai Hospital on September 6, 1907, after five days illness of sudden onset. He complained of fever, pains in the head, chest, and epigastrium, and a cough. On admission his fever was 104° F. respiration 32, pulse 120. The examination was absolutely negative except for a few moist râles in the chest and a marked enlargement and tenderness of the liver, the latter reaching four fingers below the free border. The heart was absolutely normal. Leucocytosis was 13,000; urine negative; Widal negative.

For ten days the patient's condition remained practically the same, the main complaint being referred to the region of the liver. There was marked rigidity over it; there was considerable abdominal distension. The fever was high, moderately remitting temperature; respirations kept between 32 and 36; leucocytosis ranged between 14,000 and 25,000. He also had a vague macular rash resembling a roseola. No positive diagnosis could be made

September 16th: Cyanosis was noted, and it was found that the heart area had increased moderately to the right;

but there was no evidence of pericarditis or endocarditis. September 24th: During the past week the condition remained as before, with the exception that the liver was now beginning to diminish in size and was less tender. was less cyanosis. There were many râles at the right base. The leucocytosis was down to 10,000. The heart area was somewhat larger, especially to the right; no murmurs or pericardial signs; the apex beat was distinctly felt.

October 2d: Besides having had sharp, sticking pains in the left hypochondrium for a few days it was noted that the cyanosis was more marked. For the first time distinct signs of paricardial effusion of moderate size could be made out. The apex beat could not be felt. For the borders of the heart, see diagram. Paradoxical pulse was felt for the

^{&#}x27;Read at the twenty lifth annual meeting of the American Clima tological Visconation, at Boston, June 9 and in, 1998.

Blood pressure was 110 (systolic). Leucocyfirst time. tosis 6,600.

October 4th: The amount of pericardial effusion increasing (see diagram). The general condition was better; no dyspnœa (respiration for the past two weeks being 24).

October 9th: General condition practically the same, but signs of effusion were increasing; apex beat could be felt in the fourth space, ten centimetres from the middle line. There was marked change in pericardial dullness on change of position; dullness at the base of the left lung with a few râles. Liver still enlarged four fingers, but not tender; spleen palpable two fingers below free border. There was an irregular, moderately remitting fever; pulse irregular

and 80, paradoxical; respiration 24.

October 11th: A sudden and severe attack of dyspnœa during the night rendered aspiration advisable for the first time. A fine aspirating needle was introduced to the fourth space, five and a half centimetres to the right of the middle line; ten cubic centimetres of serosanguineous fluid were withdrawn. The needle was again introduced into the left fifth intercostal space, thirteen centimetres to the left of the middle line in an upward and inward direction for about four centimetres; ten cubic centimetres of similar fluid were obtained. This needle was then withdrawn and a trocar and cannula were inserted in the same spot and in the same direction, and connected with a Kroenig aspirating same direction, and connected with a Kroenig aspirating siphon and 600 c.c of serosanguineous fluid were withdrawn. Great relief was afforded by this, the pain in the liver and the dyspnœa ceasing almost immediately. It was to be noted that the paradoxical pulse disappeared after 100 c.c. had been withdrawn. No pericardial friction rub was heard after the withdrawal of the fluid.

October 14th: Although the fluid had reaccumulated moderately, the patient's general condition continued to improve very much. In the afternoon while eating the patient was suddenly attacked with a complete right hemiplegia; no con-

suddenly attacked with a complete right learning as a vulsion or loss of consciousness.

October 17th: General condition fair; the right facial paralysis was disappearing, but the paralysis of the right extremities continued unchanged.

October 28th: Involuntary defæcation and urination; patient more apathetic; cyanosis and dyspnæa increasing. pericardial effusion was increasing so that he was again aspirated, this time by Dr. Albert Kohn, in the fifth space eleven centimetres to the left of the middle line, but nothing was obtained. The needle was then inserted in the fourth space, six and one half centimetres to the right of the mid-dle line and three cubic centimetres of clear strawcolored fluid were obtained. As the patient's condition became bad, no further attempts were made to withdraw any more fluid. November 2d: Over the entire back of the nape of the

neck to the sacrum is a large area of even, dark brownish pigmentation. Fluid in right chest; no change in heart.

November 22d: The loss of power of the upper and lower extremities remained unchanged. The paralysis was a flaccid one. The deep reflexes are missing.

November 27th: The pericardial fluid having been reported to be tuberglous in critical fluid having been reported to be tuberglous in critical fluid having been reported to be tuberglous in critical fluid having been resident.

november 27th: The pericardial hind naving been reported to be tuberculous in origin, von Pirquet's reaction was tried with a slight positive result.

December 7th: Heart unchanged; the patient's general condition was better. There had been very little fever for the past month. Pulse and respiration normal. In the af-

ternoon the patient had an epileptiform convulsion involving the left half of the body, lasting thirty seconds.

December 13th: Patient still had a complete right hemiplegia with slight evidences of right facial paralysis. Reflexes on the right side were absent in the upper and lower extremities and also on the left side, the condition of paralysis being flaccid rather than spastic. Patient had similar convulsions of a somewhat more severe type on December 17th, 25th, and January 4th and 6th. A small amount of fluid was noted in both chests on December 21st.

January 6th: Had hallucinations and delusions, this mental confusion lasting for two days.

January 15th: The heart area unchanged; but the fluid in

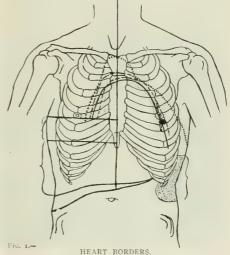
January 15th: The heart area dischanged, out the hind in the left chest increased and was there aspirated.

January 17th: Pericardial shuffle was to be heard in the third and fourth spaces to the right and over the lower sternum. This persisted for the remainder of the month.

The patient's general condition was practically the same until April 15th, when the dyspnœa and cyanosis suddenly increased. There was dysphagia; the heart borders again began to move out; leucocytes were 15,000, polynuclears ninety-one per cent. The temperature rose, the pulse became very irregular, and the patient died suddenly on the 20th of April, 1908, with increasing cyanosis and dyspnæa.
Autopsy performed by Dr. B. B. Crohn, April 21, 1908:
General: Rigor mortis marked except in right upper and

lower extremities (this side had been paralyzed). The circumference of the left thigh at its middle was 27.5 cm., the right thigh is 30 cm. Typical brownish pigmentation present over the body, not marked on hands and forearms, feet, or legs.

teet, or legs.
Thymus: Only remnants present. Diaphragm on the right and left side in the fifth space.
Lungs: Right, densely adherent; congested. Full of miliary tubercles. Bronchial nodes enlarged and pigmented. Left, very densely adherent. Changes the same as in right lung. Rather old, reddish thrombus was found in one of the medium sized pulmonary veins, the area drained by which looked somewhat like infarcted lung. Between the lower lobe and the diaphragm there was a large, sacculated collection of clear fluid. The wall was made up of thick, dense mass of fibrous tissue lined on the inner side by fibrin. The wall did not present any features that were typically tuberculous. Heart: Pericardium contained 300 c.c. of straw colored,



September 17 —.... September 12, 16, 24 = --October 1, 2 = ---October 9

— apex beat 10 cm. from median line.

clear fluid. This fluid was mostly to the left of the heart. The entire paricardial sac was converted into a thick mass of recent and old fibrous tissue varying from 0.5 to 1.5 cm. in thickness, lined on the inner side by a layer apparently in thickness, lined on the inner side by a layer apparently of fibrin of different thickness in different parts. No distinct tuberculous lesions were present. (Fluid from the pericardium had been inoculated into a guinea pig during life and tuberculosis proved.) In the mediastinum, just above the pericardial sac to the left, there was found adherent to the pericardial sac a lymph node about the size of a bean, which showed marked cheesy tuberculosis. Vena cava superior was somewhat constricted where it emerged from the pericardium. Inferior vena cava negative. Both auricles of the heart were dilated. The muscle of the heart looked cloudy. There was some old thickening of the mitral and aortic valves (at their insertion) and slight thickening of the tricuspid valve. The aorta and coronaries

Abdomen: Between 50 and 75 c.c. of clear fluid present.
Spleen: About three times the normal size. On section pulp dark in color, very easily scraped off.
Liver: Very much enlarged, fatty.

Kidney: Capsule somewhat adherent. Few cysts on surface. On section firm, congested, looked somewhat fatty.

Mesenteric and lymph nodes: No evident tuberculosis.

In the distal half of the transverse colon and descending colon there were some small, healing ulcers, apparently of tuberculous origin.

No important changes in the other viscera.

Brain: Dura, pia, and convolutions showed no abnormal-The putamen of the left lenticular nucleus was necrotic, with an area of yellow softening in its centre, about 12 mm. in diameter. The remainder of this part was in the stage of red softening. The branch of the middle cerebral supplying the putamen was not obliterated although smaller in calibre than that in the opposite hemisphere. The portion of the brain surrounding the putamen appeared to be unaffected.

Of this history of seven months' standing, many of the details have necessarily been omitted. Undoubtedly the most striking feature is the hemiplegia. Indeed, so far as a careful search of the literature shows, it is unique, for this complication has never been reported before in a case of peri-

paracentesis which was performed three days before the occurrence of the hemiplegia. Twelve hours after tapping or washing the pleural cavity was the longest interval noted in Leichtenstern's series. Still it is possible that the paracentesis and the removal of the fluid may have loosened a portion of the thrombus in the pulmonary vein when the lesser circulation was improved and rendered freer by the relief afforded by the removal of the fluid from the pericardial cavity. Then later on possibly some extra exertion while he was eating may have caused a bit of thrombus to be detached and thus cause cerebral embolism.

Mechanical causes, such as were supposed to explain the action of pleural effusion by Bartels, Rosenbach, and others (twisting of the heart, bending of the superior cava, etc.) cannot be invoked



i ray porture taken on October 9, 1967. The lower part of the plate was unfortunately damaged during the development, the marked enlargement of the cardiac area to the left and the right angle formed by the upper left border at the junction he great vessels. This shows very beautifully the "chimney pot shape" of pericardial effusions. with the great vessels.

cardial effusion. That it is possible is shown by the fact that a few cases have been reported as complicating pleural effusions both serous and purulent. Some of these pleural cases are directly connected with tapping or washing the pleural cavity, others may be explained as being metastatic pyæmic abscesses in the brain rather than being truly embolic in origin. Still there remains a small number of cases of hemiplegia (Cases XI, XII, XIII, XV, and XXI of Leichtenstern's series2) which occurred in patients with pleural effusions, but which were in no way associated with the mechanical emptying of the pleural cavity.

I believe the present case must be considered analogous to the last group, for it is hardly possible that the embolism was directly associated with the here since the heart cannot be displaced so much, and furthermore the only change found at the autopsy—the compressing band over the superior cava -merely contributed to the marked cyanosis.

That the hemiplegia was embolic is clearly proved by the condition of the blood vessels supplying the area of softening in the putamen, and by the fact that the brain and blood vessels are otherwise absolutely normal. Furthermore the source of the embolus was demonstrated in the thrombosis in the pulmonary vein.

Another feature which deserves mention is the fact that the hemiplegia was flaccid rather than spastic, that the reflexes disappeared, and that a partial reaction of degeneration developed. These are undoubted evidences of cord or peripheral disease. Unfortunately at the autopsy this point was left unsettled. Possibly the case might be included under the flaccid paralyses which are described by Bouchard as occurring in children, but this must remain a matter of conjecture on account of the

absence of anatomical data. Whether the psychic phenomena were due to the softening as were the epileptiform convulsions, or whether they were associated with the pericarditis as described by Da

Costa, must also remain doubtful.

As a case of tuberculous pericarditis its onset was most unusual: what were the exact relations of the early abdominal symptoms which were so markedly manifested in the enlargement and tenderness of the liver, were at no time explained, not even at the autopsy. How pronounced these symptoms were may be shown from the fact that for the first few weeks the case was regarded (so far as the diagnosis was possible) as some obscure form of disease of the liver, and it was not until the effusion had reached some size that the true nature of the condition became apparent. This obscurity was further increased by the fact that the effusion developed insidiously without any pericardial murmur. The enlargement of the heart was regarded as being a simple myocardial dilatation, for endocardial murmurs were also absent. It is also to be noted that it was not until very near the patient's death that any pericardial shuffle was heard and then in an atypical place, low down under the sternum and in the adjacent fourth and fifth spaces.

The tuberculous nature of the disease was not established by the cytology of the fluid nor by the finding of tubercle bacilli, but only as the result of inoculation of the fluid into a guinea pig.

It is also to be noted that neither hemiplegia nor pericarditis caused death, since this was due to mili-

ary tuberculosis.

It may seem strange that nothing further was done to treat the pericardial effusion. Further aspiration was deemed dangerous since it was feared that further embolism might be caused by aspiration. To attempt pericardial drainage by incision in this weak tuberculous hemiplegic seemed to be

a hazard which was unwarranted.

As regards the site for puncture, my experience in this case (see the diagram and x ray picture) and the findings at the autopsy confirm the statements of Curschmann, Shattuck, and Sears, that the best site is on the left side a short distance within the left lateral horder of the effusion. Here there is the least danger of injuring the heart. The specimen showed most beautifully that the major portion of the effusion lies to the left of the heart. It is needless to discuss this and other points on the topography of the effusion since this entire subject has been fully considered in Curschmann's monograph, pages 411-448.

Furthermore I would also corroborate Curschmann's preference for siphonage in tapping pericardial effusions, for my experience in paracentesis of the pleural and pericardial cavities favors the siphon rather than the aspirator, especially now that we have so simple and perfect an instrument as Kroenig's siphon bottle.6 Kroenig's needle I have discarded, since it is too large for ordinary use.

72 EAST SEVENTY-NINTH STREET.

SKIAGRAMS OF FOREIGN BODIES. DETAILS OF EXPERIMENTS.*

> By B. ALEXANDER, M. D., Budapest, Hungary.

Some time ago Dr. B. Alexander, of "plastic radiographic" fame, began a series of experiments with the object of demonstrating that simple skiagraphy alone offers a better means of distinguishing foreign bodies (as to position, situation, shape, distance, depth, etc.) than any other method now in vogue. Because of the importance of the subject and the great possibilities it involves, the instructive and interesting results of those experiments are worthy of being brought to the notice of the Amer-

ican medical profession.

There are various methods of locating foreign bodies, but each one of them, with possibly the exception of the stereoscopic method, is open to many errors, and on account of the complicated technique is not practical. The interpretations of Alexander's skiagrams, as shown in Figure 1 and Figure 2, marks a distinct advance in the scientific methods of localizing and distinguishing foreign bodies. By means of his skiagram Alexander proves that we may infer the distance of the foreign body from the plate or its exact position and situation within the tissues, and their relation to each other, if there be more than one; furthermore, his radiogram admits of an inference as to whether the foreign bodies are above or under the bone, and whether they are simply radiographed through the tissues or whether their image is projected upon the sensitive plate.

These skiagrams, Figs. 1 and 2, are those of a hand after amputation, containing various foreign bodies, as pins, needles, small shot, pieces of lead

from a pencil, etc.

The small shot marked No. 1 have been fastened to the skin of the wrist by means of rubber adhesive plaster, and marks the condyles of the scaphoid. Being outside of the skin, their picture is very distinct, uniform, and even the adhesive band can be distinguished as a white patch causing the uniform-

ity of the shot's picture (No. 1).

No. 2 marks shot fastened to the back of the hand; the picture appears to be more opaque and confluent in its shading; its dullness is more pronounced on account of the picture of the adhesive plaster together with that of the shot being projected through the soft tissues and bones upon the sensitive film of the plate. These two pictures offer interesting data for comprehending and correctly interpreting the rest of the pictures as to position and relation to each other.

No. 3 marks the shot near the basal phalanx of the little finger. This picture is very distinct and sharp, but is not uniform; with a little magnification we are able to distinguish a plasticity with all its shadings, as the attempt of reproducing the same in the sketch given later indicates. We see, besides the very sharp outlines, a narrow and bright zone which is unevenly shaded in its circular course, that is, darker at a point looking toward the epiphysis

^{**}Curschmann Zui Beurtheilung und operativen Pehandlung susser Herzheitelergusse, Peutsche Klinik, iv. 1art 2.
**Shattuck: Beston Medical and Surgical Journal, Ixxxvii, No. 16.

Sears: Boston Medical and Surgical Journal IXXXII, No. 16, November 22, 1997. "Keosenig: Die Pleura Punktion, Medizinische Klimk, 1906, No. 6.

^{*}Read before the Hungarian Surgical Association at Budapest. lune t, 1907, and published to the 172 Green Translated from the Hungarian, with permission of the author, by Dr. E. Rosenberg, of Cleveland, Ohio

of the basal phalanx and gradually fading as it approaches the metacarpal of the fourth finger, and thus, by the different gradations of this shading, a spherical form or bullet mold, i. e., the plastic picture, is formed, which is more conspicuous on the negatives than on the printed positive or printed copy of the latter. Accordingly we infer that of all the shot contained in the tissues the one under discussion (marked No. 3) is nearest to the plate (in the subcutaneous connective tissue of the palm).

and that the x rays were capable of producing its plastic image through the soft tissues. The rest of the shot pictures do not exhibit such plasticity nor any such striking brightness with the exception of possibly No. 4, proving that this shot is under the bone and has been radiographed through the soft tissues and bone. No. 5 is uniform and sharply outlined, being located in somewhat deeper soft tissues. No. 6 is beginning to lose its sharpness, indicating its still deeper location. In No. 7 there is still a



To a skineram of a left hand a few hours after amputation, with special reference to the foreign bodies.

pretty good brightness of the picture, though the sharp outlines are entirely gone, hinting that its location is still farther from the plate, in the neighborhood of the basal phalanx of the thumb, and covered by the thick antimanus, has been skiaand graphed through the bone. Nos. 8 and 9 are dull and indicate that they originate from a proportionately wide distance, that is, from the dorsal subcutaneous region. No. 10 is still duller, indicating that the shot is not only located very far from the plate-dorsal subcutaneous connective tissue -but is also projected through bone tissue. (Compare with Nos. 4, 5, and 8.) Nos. 11 and 12 will not be very hard to determine after what has been thus far demonstrated; the former one (No. 11) originates from the shot in the palm of the hand (under the hamatum), while the latter (No. 12) is in the dorsal connective tissue of the hand (behind the scaphoid), and accordingly No. 11 has been radiographed through soft and bony tissues, and its picture is therefore uniform and sharply outlined, while No. 12, being projected through soft and bony tissues, has therefore lost the sharp outlines, and appears to be faded and indistinct (distance and obstruction); the same relation is here shown as in shot marked Nos. 4 and 10. The

last shot picture, No. 13, will also be easily located; the sharp outlines are absent, it is a little dull, therefore is originating from the dorsal part of the phalanx and accordingly has been projected through the bone (compare with No. 4, which has been radiographed through the bone); its picture is somewhat brighter than Nos. 10 and 12, because the diameter of the phalanx is less than the one of the metacarpus or carpus.

With reference to the pictures of the needles, we will consider at first No. 14. We can read from this picture that the part corresponding to the eye of the needle lies farther than the point (the needle entered from the dorsal tissue of the little finger's basal phalanx and passed behind the fourth metacarpal head of the little finger into the volar tissues, but did not quite reach the subcutaneous palmar connective tissue). In accordance with its course through the tissues, we find the picture of the needle is most distinct at the point, the shadow of the needle gradually becoming more dull, until at the distal end (eye) it is entirely flat and indistinct.

Nos. 15 and 16 are the pictures of parts of one fine needle and do not seem to differ much; the thinner part, No. 15, is in the volar tissue just beside the end phalanx of the fourth finger, while the thicker part (No. 16) is close under the nail; it appears that the latter's picture is more distinct than the former one, but considering that this part of the needle, No. 16, is thicker, while the one lying more in a median line is thinner, we may infer that those needle parts are not in the same plane. Nos. 17 and 18 interestingly illustrate the relation of the needle's position. The needle part marked No. 17 is in the soft volar tissues, while the one marked No. 18, running obliquely over the os capitatum, is inserted into the dorsal tissues (compare with shot pictures). As to No. 17, we notice that its thicker end is more sharply outlined than its thinner end, which is more dull and faded, and accordingly the picture alone is explanatory of the relation as to position, i. e., the pointed end of the needle fragment lies deeper (farther from the plate) than its thicker end, which is in the subcutaneous adipose tissue. The pictures of the two pins crossing each other, Nos. 19 and 20, are still better illustrations of the relations as to position. No. 19 clearly indicates that the head of the pin is closest to the plate, and in proportion as the sharpness of the outlines are gradually diminishing, we may infer the distance from the plate is growing wider. Ouite the reverse is to be seen in No. 20; the pin enters the back of the hand and passes between two bones into the palm. The picture of the pin's head is dull and

indistinct, because it lies far from the plate, and is above the bones under the dorsal skin; while in proportion as the pin draws nearer to the tissues of the palm under the bone the picture grows more distinct, thus clearly indicating its course and position. The same relation is seen in Nos. 21 and 22. It is clearly seen that the brighter picture marked No. 21 is from the needle lying in the palmar tissues, while the duller picture (No. 22) answers to the needle imbedded in the dorsal tissues above the bone.



Fig. 2—Skiagram of a man's left hand, oblique and perpendice by a stadiation Primary and secondary pictures combined on one plate.

We also notice that the needle in No. 21 is not quite horizontal, i. e., its pointed end appears to lie deeper, being fainter, while its thick end is shown to be nearer the plate (more distinct).

More interesting data are offered by the pictures of different colored lead pencils, as seen in Nos. 23, 24, 25, and 26. The ingredients in the lead pencils are almost the same, only the pigment and the clay are different. The latter may account for getting different picture values.1 No. 23 is the picture of a piece of red lead pencil, the coloring matter is supposed to contain cinnabar, red sulphuret of mercury; its picture on the plate is very bright, clear, with sharp outlines; its uniform dark picture on the photographic print also shows sharp outlines, though it has been radiographed through the bone. Just as much obstruction as the red lead piece offers to the x rays as easily do the latter penetrate blue lead pencil. No. 24 demonstrates this fact, being the picture of a piece of blue lead. It appears as a very pale shadow on the print, its picture on the plate is dull and darkly shaded. Comparing No. 23 and No. 25 (both are pictures of red lead pieces), their pictures show which piece lies under (volar) and which one above the bone (dorsal); and accordingly No. 23 appears bright and sharply outlined, whereas No. 25 is dull and faded at the border, having been projected through the tissues. Nos. 24 and 26 are pictures of blue lead pieces, and we see the one, located in the volar tissues, as a pale shadow (24), while the other one, placed in the dorsal tissues of the hand, presents a still paler shadow than the bone picture next to it (26).

Nos. 27, 28, and 29 represent sesamoids in the sheaths of the tendons.

Considering that this skiagram of the hand (Fig. 1) had been made with the object of but illustrating the relations of the foreign bodies placed in the tissues of the hand, with reference to their location and to each other as well as to the behavior of the x rays in making radiograms of foreign bodies placed at different distances from the sensitive plate, we should not be surprised at seeing the incomplete radiogram of the hand itself, as to illustrating soft tissues or structural relations of the bones. On the other hand, if our aim has been to obtain a good print of the bones, then the pictures of the foreign bodies will not present so many and instructive illustrations, owing to the prolonged exposure required, thus sacrificing the fine and very important detailings of the foreign body. At the same time a study of Fig. 1 in many respects obviates the necessity of resorting to stereoscopic pictures, since in many places the relations as to distance are so striking and conspicuous that autosuggestion is entirely out of the question. Of course, the eye of the skiag-rapher or observer viewing the different relations on the negative must be trained for a long time before being enabled to correctly interpret such negatives.

To what an extent the skiagrams of the foreign bodies are changed if we aim at getting good bone pictures is shown in the following, Fig. 2, a skiagram of the same hand.

The skiagram as depicted in Fig. 2 differs from the former one (Fig. 1)in many ways. The hand is the same, the foreign bodies imbedded in it are, with slight omissions, the same; the outlines, the shading of the soft tissues, and even its details, are visible; the picture of the osseous structure is sharp and distinct, and yet this radiogram is not the simple result of a single skiagraphic examination, but is obtained by the use of one tube and exposing in two directions, and thus producing two shadows upon one plate projected upon each other. This experiment was made in the hope of obtaining additional data of information as to position, location of the foreign bodies; accordingly the hand was skiagraphed obliquely and perpendicularly. This procedure destroyed the first picture with reference to bones and soft tissues as seen in Fig. 2 (it is a matter of course that the time of exposure must vary, brief, for the oblique; and longer, for the perpendicular direction), while the pictures of the foreign bodies remain visible. It is true that not every foreign body is reproduced by a double image, but the explanation of this would take a too wide range and will be considered at a future date in a separate paper.

Viewing Fig. 2 in general, we cannot see the first picture of the bones at all, because it is destroyed by the second picture originating from the perpendicular rays, and accordingly the picture of the bones appears to be very distinct and sharp. If we consider how much emphasis is laid upon the necessity of immobilizing the parts to be skiagraphed and of having the tube remain stationary in its original place (many devices and procedures are described for attaining this end2) in order to obtain good negatives, the findings as described before may prove of some interest. Even the soft tissues are fairly distinguishable. With reference to the details of Fig. 2, we will consider first the picture of the two pins crossing each other (between the metacarpi of the fourth and little finger). The respective distances of the pins from the plate can be easily differentiated by their skiagraphical appearance. Thus we see that the head of the longer pin is depicted sharper (i. e., nearer to the plate) than its pointed end; furthermore, we notice that the head of the second pin, considerably foreshortened, appears to be faded and indistinctly outlined, which means that the head of this pin is located behind the bone in the dorsal soft tissues, far from the plate, and its shadow is projected upon the plate through the bone; we can also see that the bone itself somewhat dulls that part of the pin which is farthest from the plate, since as soon as its picture emerges from under the bone picture it grows darker, i. e., brighter, until finally the pointed end appears very distinct and sharply outlined, showing its approach to the plate.

Besides the secondary sharp picture of the two pins under discussion, we see on the metacarpal bone of the fourth finger the most important part of the primary picture.

If we extend the primary picture of the longer pin in a distal direction (a) it will strike the head of that pin, consequently the primary and secondary

The author's paper On the Relation of the X-Rays to Differ out Dyss read at the Third Congress of the Deutsche Röntgen Gewilselaft at Berlin (1907) will shortly be published.

²Some of which are carried to extremes; thus, for instance, the compression diaphragm is sometimes used when not indicated. ²Only econogly longer, hecause it does not lie as obliquely as the other

pictures meet at one point (at another place on Fig. 2 it can be plainly seen how the two heads in the pins primary and secondary picture remain united). From this we may draw the inference that the head of the pin is located very close to the plate. The picture of these heads remain united, no matter in what degree of obliquity or from what direction the x rays fall upon the hand, and thus enabling us to correctly interpret the accurate localization.

The primary, faint picture of the pointed end (b) appears to be far away from the pointed end of the secondary picture (b), proving that its location is farther from the plate in the deeper tissues and more remote than the pointed end of the other (shortened) pin (c), but not as far away as the head of the same pin (d), which appears to be very far off. That this is so can be indubitably seen if the converging primary and secondary pictures are extended by a line; the extended line will meet at X.

The primary picture of the apparently shorter pin is not complete, but the part presented is sufficient to demonstrate that the pictures of the pointed end cannot meet; in its diverging course it may be traced even on the picture of the blue pencil, also indicative of the difference of obstruction offered

by the blue lead and needle.

In reference to the picture of the whole needle (crossing the metacarpus and basal phalanx of the little finger in an oblique direction), it appears to be very distinct and to take the course from the dorsum into the vola; its distal end (eye) is not as sharp as its proximal half. Now, if we want to estimate the distance of the point of the needle (shown to be in the palmar tissues) from the plate, i. e., its depth in the tissues, we have to look again for the primary picture of the needle, which is to be found in the soft tissues beside the basal phalanx of the fourth finger.

The two pictures do not meet, only their extended lines; if compared to the pictures already described it may be said that the point of the needle is closer to the plate—i. e., the surface of the skin—than the point of that pin, whose much shortened picture we have seen and considered previously and which also runs from the back to the palm of the hand (see

Fig. 2 and sketch of pins).

The course of the primary picture is not visible owing to a very delicate and faint depicting of the shadow of the needle, but would not be visible even with a sharp picture of the needle, as the small shot representing a relatively large obstruction, does not allow the primary picture to show to advantage.

On the end phalanx of the fourth finger we also see the primary and secondary picture of the externally located needle; the very faint primary picture runs almost parallel to the secondary (sharply outlined) one, indicating that the position of this needle approximates the horizontal line. Finally we see a double picture on the distal end of the ulnardiaphysis, the distinct outline of which point to a position under the bone. The two pictures meet at their distal points, and their diverging course can be followed up to their ends, and in the primary picture even up into the shadings of the soft tissues. This picture resembles much the one we have seen (a)

in the crossing pins, and, just as we inferred there, from the meeting of the primary and secondary picture, that the head of the pin must be close to the plate, i. e., not deep in the soft tissues, we may also say the same thing regarding the distal end of this needle under discussion; in reference to its pointed end, however, we see that it is more deeply located, and consequently the position of the needle must be oblique. As to the rest of the pictures of the foreign bodies, there is nothing of importance to add to the data obtained from interpreting the pictures analyzed so far. Distance, position, and location can all be nicely differentiated from a correct interpretation and reading of the pictures.

Fig. 2 has been presented, as before mentioned, with the only object of conveying a clear idea of the behavior of the sensitive plate upon making a skiagram from two different directions, i. e., if two pictures are projected upon each other; the question is whether the data thus obtained really improve our ability of drawing an inference as to the position, location, and distance from the plate of the foreign bodies contained in the tissues, and if they do, to what extent do they add to the information already

obtained from Fig. 1.

Fig. 2 is the result of a number of experiments, but not a complete result, since not every foreign body shows a double picture (the explanation of which will be given at some other occasion). One point, however, should be emphasized, namely, that the anticathod should always move in one plane when skiagraphing for a double picture, otherwise

we may get altogether different effects.

Furthermore we learned from these experiments that the sensitive plate, after having been once acted upon by the x rays, is still capable of producing another skiagram. This experience is especially of importance in skiagraphing children, who are often very restless, and especially at the beginning of an exposure. In such cases we did not remove the plate, but instead protracted the time of exposure, and, as a result, we got a definite, sharply outlined picture. If, however, that restlessness should begin after exposing for some time, when the chemical action of the rays upon the sensitive film has been protracted and therefore too intense, the picture thus produced will be faded and blurred, and no method of intensifying can correct it. It might also be mentioned that the length of the excursion in moving the tube should be great, and that the moving should not be done carelessly, for we may thus get pictures entirely misleading.

Conclusion.

In conclusion, we wish to mention one more point. The hand under discussion contains many different foreign bodies scattered all over and not of the same kind; in such cases it is very hard to obtain a picture satisfactory in every respect. Ordinarily we have to deal only with but one foreign body, or, if with many, they are usually of the same kind, and thus facilitates our ability to interpret the plate.

This paper, to repeat it, presents the product of an experiment, and is not theory, but a statement of facts based upon experiences which are instructive

and worthy of consideration.

BACTERIAL TREATMENT OF ERYSIPELAS.

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Almost every worker in bacterial treatment of disease who has contributed to the literature of that subject has laid more or less emphasis upon the fact that good results are achieved in a large proportion of the chronic cases, such as acne, tuberculosis, etc., but that little can be expected of such treatment in acute infections. Acute gonorrhea is the most mentioned example.

In an article recently published we noted some encouraging results in the treatment of boils and carbuncles with dead microorganisms. Erysipelas has vielded so little to treatment in the past that it is not wholly strange that many medical men have abandoned therapeutic remedies, used supportive treatment, and hoped for a living patient after the disease had "run its course"—i. e., developed sufficient specific resistance in the body to check further spread of the disease.

We have treated three cases of erysipelas by the injection of dead streptococci with apparently uniformly good results. We realize the futility of attempting to draw lessons from three lonesome cases, and only report them for their "face value." In this manner we hope to hear from other cases.

The dose in these cases varied from 30,000,000 to 60,000,000 dead streptococci. Dr. Leedom and Dr. Gradess have kindly furnished us with the following brief case reports. The first two cases are Dr. Lee-

dom's; Case III is that of Dr. Gradess:

CASE I .- Miss B., age twenty-five. Sent to the Samaritan CASE I.—Miss B., age twenty-five. Sent to the Samaritan Hospital on March 29, 1908, for the removal of retained placenta. On the second day a bright red spot developed on her nose, which during the next twelve hours had spread over the right side of her face and forehead. Simultaneously with the appearance of the red spot there was a rise of temperature to 101.4° to 102° F. This local infection was plainly erysipelatous and rapidly spread to the left side of the face and scalp. The temperature climbed to 103° F. Quinine sulphate, gr. v, and Tr. ferri chlor., m xx, every four hours, with local applications of ichthyol ointment hought to improvement either in condition or temperature. brought no improvement either in condition or temperature. I asked Dr. Duncan to see her on the fifth or sixth day, and

I asked Dr. Duncan to see her on the fifth or sixth day, and he suggested sterilized streptococi. A dose of 50 million was given. Twelve hours later the temperature dropped, and from that time the recovery was uneventful.

CASE IL.—W. H., age nincteen, was referred to the Samaritan Hospital with the diagnosis of typhoid fever. His face was swollen and fierry red; eyelids edematous; temperature on admission, 100.6° F., which advanced to 103.4°

F. He was nauseated, and suffered from chills and fever. He was isolated and given the routine treatment for ery-He was isolated and given the routine treatment for erysipelas, viz., quinine and iron, with no benefit. I had seen such good results from Dr. Duncan's treatment that I asked him to give this young man a dose of sterilized cocci. He was given the treatment on the third day of the disease, and on the morning of the following day his temperature. ture was very nearly normal and a marked improvement noted in his condition. He felt so much better that he in-

noted in his condition. He felt so much better that he insisted on going home.

Case III.—B. C., female, aged twenty. I called to see her on May 12, 1008, and found her suffering from general aches and pains, commonly called "a cold." There was some tonsillar and pharyngeal injection. I called the following day and found a well marked tonsillitis. I prescribed and did not call on the following day. On the 15th I was seen all call on the following day. On the 15th I was seen all call on the following day.

right lower eyelid, with a bullous eruption on the right side of the nose, extending somewhat downward toward the nasolabial fold and slightly on the left side of the nose near the inner canthus. A diagnosis of erysipelas was made, and the usual treatment given, viz., ichthyol locally, which was later changed to a saturated solution of magnesium sul-The temperature ranged to 104.2° F. The patient seemed to improve for two or three days. There was no extension of the inflammation, and there was considerable remission in temperature.

Toward the end of the first week I noticed a slight chemosis of the left lower eyelid, which later took on the characteristic appearance. This spread to beneath the chin, to the

istic appearance. This spread to beneath the chin, to the ear, and merging on the opposite cheek passed completely around the neck. The temperature ranged to 104.1° F.

For the better part of the following week no progress was noted in the arrest of the disease. The inflammation spread continuously down the chest, reaching to below the mamma, and on both arms. The temperature ranged to 105.2° F, and the patient was frequently delirious.

In the latter part of the second week I called in Dr. Harry Duncan, who injected dead streptococci. Some reaching was noted on the day following the injection. There

tion was noted on the day following the injection. was a considerable remission in temperature on the second was a considerable remission in temperature on the second day. No further extension of the inflammation occurred on the chest, and there was a marked drop in the temperature, with no subsequent rise. The temperature was 99.2° F, on the third day. Some extension of the inflammation occurred on the arms, but no further rise of temperature was noted. The temperature was normal on the fourth day, and there was no further extension of the inflammation. Recovery was uneventful.

2721 WEST LEHIGH AVENUE.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVII.—How do you treat varicose ulcer? (Closed

LXXVII.—How as you treat curte coryza? (Closed September 15, 1508.)
LXXVIII.—How do you treat acute coryza? (Closed September 15, 1508.)
LXXIX.—How do you treat sick headache? (Answers

LXXIX.—How do you treat sick headache? (Answers due not later than October 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$2.5. No importance volutever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not recurrent) that the answers be short; if practicable, no one answer to contain more than six hundred reports.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded anether subscrivers or not. Into prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. The prize of \$25 for the best essay submitted in answer to question LXXVI has been awarded to Dr. Bewerley Behinson of New York whose articles the agent of the property of th

Robinson, of New York, whose article appeared on page

PRIZE QUESTION LXXVI.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

(Concluded from page 511.)

Dr. Alfred S. Jaeger, of Indianapolis, Ind., writes: Although diagnosis is without the scope of this paper, it is so all important we cannot refrain from emphasizing the fact that upon an accurate diag-

nosis depends primarily the success of whatever line of treatment may be followed. Therefore be-

fore instituting any treatment we should be reasonably sure that it is acute articular rheumatism and not one of the multitudinous conditions frequently mistaken for it.

The first step in the treatment should be absolute rest. The patient must be put to bed and kept there regardless of what special joint or joints are involved. This is not insisted upon solely to keep the affected joints quiet, which, of course, is necessary—and in restless or nervous patients it may at times be advisable to lightly splint the parts to insure this—but in a great percentage of cases this absolute rest in bed undoubtedly lessens the tendency to progressive joint involvement, and is our greatest safeguard against cardiac complications.

At the onset the entire gastrointestinal tract should be thoroughly purged, preferably with sa-lines, to be repeated frequently enough to insure soft stools throughout the course of the disease. Heat should be used in whatever form available. My patients are put to bed between blankets, and from six to eight hot water bags or glass bottles, suitably protected, are distributed in the bed. If these are not obtainable hot bricks, irons, or bran bags, or anything which will retain heat, is used instead. The object is to keep the patient as hot as can be comfortably endured. A hot bath may be given once or twice daily, the patient remaining in about fifteen minutes, when the general condition does not counterindicate it; but it must be given with caution, as collapse in the bath may occur when least expected. In hospitals the hot air treatment is available, and daily treatments of one hour duration at a temperature of from 250° to 400° F. may be given with good results. essential point is that heat must be applied continuously, as it greatly aids in the rapid elimination of toxic materials, besides abating pain and inflammation. Bier's hyperæmia method has been also used by me with decidedly good results.

The affected joints should be dressed with some of the following solution:

Gauze should be saturated with this mixture and laid entirely around the parts, over which is placed absorbent cotton or wool, and the whole covered with oil silk, rubber sheeting, or newspaper, if nothing else is obtainable, to make an impermeable dressing, and applied three times daily or oftener. When the pain is extremely severe, tincture of opium, 4 drachms, may be added to the solution; but, on the whole, opium in any form is counterindicated, though in some cases we are compelled to use it to control pain. The above mixture has eased a patient more quickly than any application the writer has ever used.

As in malaria quinine is our specific, so in the treatment of acute articular rheumatism do we find our sheet anchor in salicylic acid or one of its derivatives. Which form of the drug is used is a matter of personal preference. My own experience has been mainly with sodium salicylate and acctosalicylic acid, commonly known as aspirin. I feel that

the best results are gained by getting the patient saturated with the drug as quickly as possible. To gain this result I give doses which to some may seem dangerous, but I have yet to see bad results when a pure drug is used. The patient is, however, always carefully watched for idiosyncrasy. Sodium salicylate is usually prescribed in 15 grain doses hourly for four to six doses, and then every two to three hours, repeating the same daily until the patient is completely under its influence, when the dose is reduced. Aspirin is given in 10 to 15 grain doses every two hours. The latter is perhaps the preferable of the two, as it may be given for a longer period of time without producing tinnitus and nausea. When symptoms subside the dose and frequency are lessened. It is naturally understood that the form, frequency, and amount of the drug used is governed by the demands of the individual case. In fact, throughout the treatment of this disease, individualism is an important factor. The point in giving salicylates is to give enough, and to give them for weeks after all symptoms have disappeared.

The diet should be bland. As this disease is an acute infectious disorder, we see no reason why the diet should be any different than that given in other like conditions. The object should be to give easily assimilated and nourishing foods. Personally I have depended mainly on milk, buttermilk, and kumyss; but here again the individual case must be considered, and such diet given as best agrees with the patient. As much pure water as possible is to be given, but alcohol internally we believe is harmful in this disease at all times.

Electricity, massage, or rubbing of any kind are most certainly counterindicated until all pain and swelling has subsided. Such treatment only tends to further irritate a part already inflamed. It is well known that stimulation is bad for any acutely inflamed joint, and we cannot see why it would be less harmful to an acutely inflamed rheumatic joint. In a few cases during convalescence passive motion may be indicated, but when this is done it should be performed most delicately.

Alkalines may be given with the salicylates if desired. The writer does not use them as a routine. When they are prescribed, the bicarbonate or benzoate of soda or potassium acetate is given in three to five grain doses, two or three times daily or oftener, and the urine watched for excessive alkalinity. The so called alkaline treatment of acute articular rheumatism has not proved itself of special value in the writer's experience.

Cardiac involvement cannot be discussed here as carefully as its importance demands. It will occur at times in spite of the most approved and careful treatment. The heart must be closely watched throughout the course of the disease, and the slightest variation considered as a possible forerunner of serious trouble and treated accordingly. As before mentioned complete rest is our greatest safeguard, and in the writer's practice it has not been common to encounter cardiac involvement in a previously healthy heart, when his orders have been conscientiously carried out. When it does occur the treatment must be such as the individual case demands. Endocarditis and myocarditis are the most frequent.

An ice bag to the left chest and absolute rest has proved most effective, although blisters and the remedies usually recommended for these conditions have also given good results. When heart involvement occurs the salicylates are usually stopped, but the writer does not believe that salicylate medication has a tendency to increase the frequency of cardiac involvement, or make it more serious when it does occur.

Hyperthermia is rare, as the salicylates usually control the temperature. When there is fever of over 104.5° F., not reducible within twenty-four hours, associated with delirium or muttering, it is reasonable to presume that there is cerebral involvement, and the ice cap, etc., should be used. Happily this is rare, as it usually ends fatally.

During convalescence the patient is usually given from three to fifteen grains of potassium iodide in combination with iron, quinine, strychnine, and

arsenic, three times daily.

In summing up the successful treatment of acute articular rheumatism, I would say that rest, heat, and the administration of some salicylic acid preparation in sufficient quantity are of paramount im-The individualism of the case must alportance. ways be borne in mind. The patient should not be permitted to leave the bed for a least a week after all symptoms have subsided, and not for four weeks or longer if there has been any cardiac involvement. If he disregards this advice he should be given emphatically to understand that he does so at his own risk. The salicylates should be given for weeks after the patient seems to be apparently well, and he must be continuously warned of the serious remote effects which may follow a too early return to normal activity.

Dr. H. F. and Dr. C. L. Sigler, of Pinckney, Mich., remark:

Our experience with the treatment which we will discuss has been so uniformly successful that we have discarded practically all other remedies in its favor

It is not in the least an exaggeration to say that all the acute cases we have treated by this method were cured, the subacute cases either cured or greatly relieved, and the chronic cases much relieved or

in a fair number of instances cured.

The method consists in the application of dry, hot air, either to the affected joint or preferably to the whole body. The apparatus used is one manufactured by a well known firm and is heated by gasoline burners. The body apparatus consists of a large asbestos lined drum or oven, capable of being heated to 500° F., or even higher, although this intense heat is seldom used, the general custom being to maintain the temperature between 350° and 400° F.

The patient clothed in a bath robe, heavy stockings and mittens, is well wrapped in blankets and placed on a carriage which is then rolled in so that

only the patient's head remains outside.

As soon as he begins to feel the heat or commences to perspire, iced cloths are placed across the forehead and copious drinks of cold water are administered, thus inducing free perspiration. This

is evaporated so very rapidly on account of the dryness of the air, that the bodily temperature is raised but slightly if at all.

After the treatment, which continues from thirty to sixty minutes, each day, the patient is quickly sponged with warm water and soap, and after drying is rubbed with alcohol or some liniment. An application frequently used contains menthol, oil of wintergreen, and salicylic acid. The patient is then returned to bed where he continues to perspire profusely for one hour or more, when he has a drying rub and if permissible is dressed.

This treatment literally "washes the blood," removing the poisonous material responsible for the symptoms, as is evidenced by the reduced temperature, cessation of pain, and the restored normal appearance of the joint. The beneficial effect of the treatment is usually noticed after the initial "baking," although of course the result is not so quickly

shown in subacute or chronic cases.

A week's treatment frequently suffices in acute cases, although the treatment is usually continued for a few days after the disappearance of the symptoms. Drugs are seldom used in the acute cases, although some mixture of potassium iodide is occasionally given in the more chronic cases, especially if accompanied by deposits in the joints. When the disease is confined to one joint, as the ankle or knee, a smaller apparatus accommodating only this part may be used, but the results are not so striking as when the large apparatus is used.

These conclusions are not based upon a small number of cases, but from a rather extended experience during a number of years, in which period we have almost entirely abandoned the drug treat-

ment of acute articular rheumatism.

Dr. Charles S. James, of New York, writes:

A patient suffering from acute articular rheumatism should be placed in a suitable apartment which is well supplied with fresh air having a temperature of 70° F. The bed should be of narrow pattern and easily accessible from both sides. All draughts should be avoided and the patient should wear flannel underwear and use flannel sheets for covering.

Nitrogenous food and alcoholic stimulants must be discontinued.

A limited diet, consisting of milk and carbonated water or butter milk should be given until the acute stage is passed. If the temperature is over 105° F, a cold sponge or tub bath is indicated, and can be repeated every two hours until the temperature has been reduced. Local applications of hot packs covered with oil silk applied to the affected joints are very comforting to the patient.

Medicinal treatment is commenced by giving calomel, gr. 10; pulv. jalap cc., gr. 15; followed by a saline cathartic in a few hours. Sodium salicylate is the most satisfactory drug, and is used in doses of 10 grains to 20 grains every two hours until the pain has subsided. If the stomach does not tolerate the salicylate it may be given by rectum in larger doses as an aqueous solution. Infusion digitalis can be added to the salicylate if there is heart complications. For the severe pain a hypo-

dermic injection of morphine sulphate, ½ grain, can be used but not repeated unless absolutely

necessary

Encourage the drinking of large quantities of pure water to which has been added an alkaline as potassium acetate to the amount of one drachm per

Massage is beneficial and soothing even if painful at first, whereby the function of the muscles and joints may be gradually restored to normal. Oil of gaultheria, one part, to five parts of olive oil may

be used for massage.

Following the acute stage tincture of iron chloride in half drachm doses three times a day is used as a tonic, also potassium iodide, gr. 10, three times a day in milk which aids in the absorption of the exudate around the joints. Electricity is commonly used at the present time but has no effect on the rheumatism but acts as a stimulant to the muscles and nerves.

Dr. W. M. Burwell, of Chincoteague, Va., remarks:

Put the patient to bed in the best located and best ventilated room in the house, but free from draughts, and keep him there from one to two weeks after fever, pain, and swelling have disappeared, and have a gentle and capable person to act as nurse. The bed should have a smooth and moderately soft mattress. A flannel nightgown is most suitable. He may lie between blankets or sheets as he prefers, but one or more blankets should be used for cover, as the temperature of the weather may demand. He should be allowed pure water freely at all times. The diet during the febrile stage should be pure milk, broths, and soups, but meat should be interdicted. Food should be given at stated intervals four or five times in the twenty-four hours. As convalescence is established a more liberal yet simple and easily digested diet should be allowed.

The affected joint or joints should be wrapped in absorbent cotton or cloths saturated with lead water and opium, and the whole covered with oiled silk

or oiled muslin.

In case of hyperpyrexia there is but one treatment; the application of cold. As soon as the temperature begins to rise rapidly above 105° F., a large ice cap should be placed against the head and kept there until the temperature is sufficiently reduced and a general sponge bath with ice cold water be given every one or two hours.

When necessary for acute pain, but only when necessary, a sufficient dose of morphine sulphate and atropine sulphate, say a quarter of a grain of the former and 1/150 of a grain of the latter, should be given hypodermically to afford relief. It will be unnecessary to repeat this often if the subsequent

treatment is properly carried out.

At the commencement of the treatment unload the bowels by the administration of calomel, 4 grains; sodium bicarbonate, 4 grains; and podophyllin, two thirds of a grain, at one dose, or by a liberal dose of magnesium sulphate. And during the whole course of treatment keep the bowels open by aromatic fluidextract of cascara sagrada or by a pill of aloine, one quarter of a grain; belladonna, one eighth of a grain; strychnine, one sixtieth of a grain; ipecac, one sixteenth of a grain; given best at night, but two or three times a day if necessary.

Give sodium salicylate in from fifteen to twenty grain doses, best in solution, with a liberal quantity of water every two hours till pain is relieved; then eight or ten grains every four or five hours, till fever and swelling are relieved; after which time continue the drug in four or five grain doses three times a day for a week or ten days. After fever and pain have subsided a tonic treatment should be added consisting of elixir of iron, calisaya, and strychnine, and continued as long as the case demands, which must be determined by the judgment of the physician.

Correspondence.

LETTER FROM TORONTO.

The American Public Health Association.—A Revised List of Officers.

TORONTO, September 5, 1908.

In my last letter I did not include the transactions of the last day of the meeting, and it was an error to state that Dr. Hodgetts, of Toronto, was elected president. The election of officers took place on the last day of the meeting, and the place of meeting in 1909 was declared to be Richmond, Va. The officers are: President, Dr. Gardner T. Swartz. of Providence, R. I.; first vice-president, Dr. R. M. Simpson, of Winnipeg, Man.; second vice-president, Dr. Jesus Chico, of Mexico; third vice-president, Major Charles F. Mason, of the U. S. Army; secretary, Dr. Charles O. Probst, of Columbus, O.; treasurer, Dr. Frank W. Wright, of New Haven, Conn. At this session of the meeting the following resolution was unanimously passed:

Resolved by the American Public Health Association that it heartily recommends to the American Congress the passage of such legislation as may be intended to enlarge the scope and increase the efficiency of the Public Health and Marine Hospital Service. To this end the association believes the power of the service should be increased, that provision should be made for the retirement under pay of the members of the service, and that the salaries of the said members should be made commensurate with those of the medical service of the army. The secretary shall send a copy of this resolution to the chairman of the House Committee on Interstate and Foreign Commerce and to the corresponding

committee in the Senate.

Typhoid Fever in the Middle West was the title of a very interesting paper contributed by Dr. S. J. S. Pierce, of Winnipeg. The facts were collected from the experience of the Winnipeg General Hospital, which was incorporated in 1875 with fewer than forty beds. It now has three hundred beds and has received 35,000 patients, of whom 4,800 had typhoid fever, 3,500 coming from the city of Winnipeg proper. Out of 4,605 cases, the statistical reports of which were examined, 3,530 were in males and 1,075 in females. As there was no such disproportion in the population, the conclusion drawn was that men had been more exposed to the disease. The average age of these 4,605 patients was: Males, twenty-six years; females, twenty-one

The month in which the greater number of cases developed was September, one fourth of all the cases in a year being recorded in that month. It has been a matter of common observation that typhoid fever is most prevalent among recent arrivals. In 3,170 recorded cases, thirty per cent. of the patients had been in the country less than a year; fifty per cent. had been in the country less than two years. The patient usually entered the hospital on the ninth day, and the temperature was then at the maximum in half the number of cases. The average of the maximum in 779 cases was 103° F. In cases of moderate severity, fifty-three per cent., the temperature remained high for eight or nine days after admission, reaching normal twenty-five days after the onset of the disease. The average duration of fever in 628 cases was found to be twenty-eight days. In twenty-six years, out of 4,605 cases, 573 ended fatally. In the early years at the hospital the mortality was high. In 1884 it was twenty-eight per cent. In 1892, however, it was only five per cent. For the past three years it has been ten per cent. The mortality among the females has been slightly less than among the males. Of patients under ten years of age, eight per cent. died; under twenty, ten per cent.; under thirty, eleven per cent. The mortality rate has been high in the winter and spring months, when the number of cases is the smallest.

Dr. R. M. Simpson, chairman of the Manitoba Board of Health, and Dr. A. J. Douglas, M. H. O., Winnipeg, contributed a paper on Typhoid in Winnipeg. This paper went at length into the steps taken to deal with epidemics. In the late nineties the water company's plant was bought out and the present system of artesian wells adopted by the municipality. In spite of the fact that the water supply was above suspicion, the typhoid rate rose, and Winnipeg presented the somewhat anomalous picture of a city with a pure water supply and a high typhoid rate. In 1902 began what might be called Winnipeg's second boom. The population doubled in three years. Again, in an aggravated form, were repeated the experiences of 1881 and 1882. In 1902 there were 356 cases; in 1903, 489; in 1904, 1,275; in 1905, 1,606; in 1906, 1,174; in 1907, 307 cases. In 1904 the abolition of box closets took place, and for them were substituted brick and water tight pits where sewers were not laid. January, 1905, there were in the city 6,153 box closets and 189 pits. At the present time there was one box closet is old Winnipeg and about sixteen in the old suburbs. There were yet 1,650 brick pits. In the present year there had been only 160

A paper was read by special request of the programme committee on The Mortality and Mortality Statistics of Typhoid in the Middle West States. This had been especially prepared by Dr. White at the request of the programme committee, and showed the greater prevalence of typhoid in the Middle States than anywhere else except in the Southern States.

A study of typhoid in Richmond, Va., was presented by Dr. Ernest Levy, and Dr. James T. Bowles, chemist of the State Hygienic Laboratory,

dealt with the investigation of an epidemic of typhoid fever at Sheboygan, Wis.

In discussing the typhoid fever patients, Dr. Macdonald, of Brandon, Man., emphasized the dangers of the common house fly in spreading the disease. Dr. Wood said that the latest movement in Washington to study the disease was the rigorous registration of all places where food was prepared, so that they might be regularly inspected. There was also to be a systematic inspection of laundries and stables. Dr. Swartz pointed out that health officers need not be disappointed if it was not always possible to trace the source of the disease, as it might have started from the farm and been carried in the milk supply, although the disease might not have shown itself there. In Minnesota, Dr. Hill said, without waiting to trace the source of the outbreak, they threw a tourniquet around the area where the disease appeared and started on a campaign of education in the town or district where the outbreak occurred.

Poverty and Tuberculosis was the title of a paper read by Eugene T. Lies, general secretary of the Associated Charities, Minneapolis, Minn. He dwelt on the evils of quack advertising and the fact that the better newspapers were now excluding this from their columns. In one case in Minneapolis, one of these quack scoundrels offered to give a written guarantee to cure a poor man of tuberculosis for \$50 cash paid in advance. The offer was not accepted, and the man died nine hours afterward.

Therapeutical Hotes.

Treatment of Tuberculous Laryngitis.—In the Annual Report of E. Merck for 1907, Barwell's method of treating tuberculous laryngitis by carbolic acid in combination with lactic acid and formaldehyde is cited. It consists in painting with the following solution:

| B | Carbolic acid, | 3x; |
|---|---------------------------|-----------|
| | Lactic acid, | 3vi, 3ii; |
| | Solution of formaldehyde, | 3vii. |
| M | | |

The quantities are to be taken by weight.

Induration in Lupus Erythematosus.—Kanoky (Medical Record), in such cases, favors salicylic or pyrogallic acid, suspended in collodion:

| ĺŝ | Salicylic acid. | | | | |
|----|------------------|-----------|----------|----------|-------------|
| | Pyrogallic acid | , | | IO.O | grammes; |
| | Collodion, | | | 100.0 | grammes. |
| M. | et sig.: Shake a | and apply | at night | with a c | amel's hair |
| 1. | | | | | |

If this causes too much irritation it should be temporarily discontinued and a soothing application substituted, such as:

| \mathbf{R} | Zinc | oxide, | , | | | | | | | ٠ | | | | | 60.0 | grammes | |
|--------------|-------|--------|---|------|--|---|--|---|---|-------|--|---|---|---|-------|---------|--|
| M | Olive | oil, . | | | | ٠ | | ٠ | ٠ | | | ٠ | ٠ | ٠ | .40.0 | grammes | |

If the lesions are in the noninflammatory, pale, and anemic state he advises painting them with a strong iodine preparation, repeating it three times each week. Internally he administers salicin, alternating with quinine, commencing with 1.0 gramme after each meal, and gradually increasing.

Cichiaman the share

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NEW YORK, SATURDAY, SEPTEMBER 19, 1908.

THE OYSTER AS A DISTRIBUTOR OF DISEASE.

Now that the oyster season has fairly opened, many apprehensive people are doubtless refraining from eating oysters in the raw state, pending authoritative and conclusive assurance that the oysters supplied to our markets at the present time have incurred no chance of contamination with the germs of disease, especially with the germ of typhoid fever. A few of these people—those who do not like cooked oysters-are subjecting themselves to a real deprivation. They have lost what little brief faith they may once have had in the alleged corrective virtue of lemon juice, and they have simply resigned themselves to bearing their loss with whatever equanimity they may. In the interest of such persons, as, indeed, in that of the entire community, there should be forthcoming some ample guarantee of the freedom of our oysters from pollution.

The purveying of oysters must be largely a matter of interstate commerce, and we think the people are entitled to the intervention of the Federal authorities in regulation of the trade on the score of care for the public health. As regards our supplies in New York, it is understood that the sanitary officials of the city have given out a general statement to the effect that our oysters may be eaten raw without fear of their being contaminated with pathogenic germs. It would prove more satisfactory, we think, if certain specific measures were enforced to prevent

or overcome such contamination. This course has been adopted in Paris, as we learn by the *Progrès médical* for August 29th. Acting on the strength of a sanitary report by M. Chatin, vice-president of the Council of Public Hygiene and Salubrity of the Department of the Seine, the Paris prefect of police has issued certain specific decrees.

One of the prefect's decrees forbids the exposure for sale or the delivery to consumers of oysters until after the exterior of the shells has been freed of animals, vegetables, and detritus by brushing or by some other means. This procedure, with all its vagueness in the matter of "some other means" (tout autre moyen), applies, we take it, only to the freeing of the shells from gross adventitious substances, and does not touch intimately the matter of getting rid of pathogenic microorganisms; but the decree is good so far as it goes.

More to the point is the second article of the prefect's proclamation. It ordains that dealers in ovsters must not employ, either in the soaking ("fattening"?) or cleansing of oysters, any other water than that which is potable, such as is used by the public for drinking purposes, but that, in case of need, they may salt the water. In the third article the prefect expressly forbids the employment of salt which has been used in the transportation or preservation of fish or any other article of food for the purpose of salting the water used in the soaking or cleansing of oysters. In article 4 dealers who open oysters for delivery to consumers are forbidden to make use of utensils which are not constantly kept clean, and they are forbidden to wash oysters already taken from the shell. These requirements do not appear to be very far reaching; indeed, they might be intensified to the general advantage.

THE ÆTIOLOGY OF HÆMOGLOBINURIC FEVER.

M'Cay (Indian Medical Gazette, December, 1907) publishes the results of some studies on the ætiology of hæmoglobinuric fever which were undertaken from the point of view of hæmolysis. He found that in health the action of sulphates upset, for a time at least, the osmotic equilibrium that normally exists between the red blood cells and the plasma in which they float. When quinine sulphate, magnesium sulphate, or dilute sulphuric acid was added to the blood plasma, a very serious decrease was obtained in the total amount of inorganic salts in the plasma, implying in turn a serious decrease in its osmotic tension. The red cells being impermeable, no change takes place in the number of their inorganic molecules; but by endosmosis water

passes into them and causes them to swell up, and, if the decrease in the plasma is sufficient, eventually to burst and extrude their hæmoglobin. Dr. M'Cay offers the following hypothesis, which appears to be reasonable and tenable: In blackwater fever the hæmolysis is due, first, to the injury to the stroma of the red blood corpuscles by the malarial parasites; second, to the presence of an hæmolysin; and, third, to the administration of sulphates. The first two factors may precipitate the attack if they are severe enough, but in other cases the third factor will have to be added to produce the attack. According to this hypothesis and the observations recorded, it would be possible for quinine, if given in the form of the sulphate, to produce an attack of hæmoglobinuria if the amount administered was great enough and the red corpuscles were injured otherwise than by the presence of an intracorpuscular parasite. Dr. M'Cay found on further search that, while the sulphates caused a lowering of the resisting power of the red blood corpuscles to hæmolysis, the chlorides caused an increased resistance to hæmolysis. In every experiment in which quinine hydrochloride was used, particularly when combined with sodium chloride and dilute hydrochloric acid, no fall was noted in the salts of the plasma; but usually there was a marked rise of the inorganic salts in that fluid. As malaria is the underlying factor in the ætiology of blackwater fever and as quinine must be given to remove that cause, it is rational to avoid giving sulphates and to administer quinine in the form of the hydrochloride or the acid hydrochloride. In addition to the sulphates, large quantities of alkaline carbonates or compounds of alkalies with vegetable acids, also potassium salts, should be avoided. These substances all tend to lower the number of inorganic molecules in the blood plasma, and, therefore, to bring the red corpuscles nearer to the hæmolytic point. On the other hand, the chlorides have the opposite effect, and tend to raise the resisting power of the red blood corpuscles.

In a comment upon the results of the work of Dr. M'Cay, in the Indian Medical Gazette for February, 1908, C. P. Lukis advances the theory that the Leishman-Donovan body (Leishmania Donovani) is the hitherto undiscovered factor in the ætiology of blackwater fever. He contends that the geographical distribution of hæmoglobinuric fever in India is identical with that of the occurrence of kala-azar. But what will Dr. Lukis say of the cases of hæmoglobinuric fever which occur in the West Indies, in the United States, and in Airica—that the Leishman-Donovan body is present there, but as yet undiscovered? The Leishman-

Donovan body may be a cause of hæmoglobinuric fever, but it is not the sole cause, and we gather from reading Dr. Lukis's communication that the latter is what he wishes to state.

"ENDEMIC FUNICULITIS."

Under this hybrid and rather indefinite name Castellani (Annali di medicina navale, 1908, 4, 5; Presse médicale, September 2d) describes what seems to be a peculiar disease of the spermatic cord. He says that it has not yet been described in any textbook, although it is very well known to the physicians of Ceylon and southern India, where of late years it has seemed to assume a truly epidemic character. The onset is sudden and marked by chills, nausea, and sometimes vomiting. At the same time the patient feels severe pain throughout the spermatic cord and in the epididymis, and there is moderately high fever. At this period examination reveals a swelling in the inguinal region, following the course of the spermatic cord. It is hard in consistence, and pressure upon it causes acute pain. Sometimes the epididymis is equally affected, but the testicle escapes and there is no effusion into the tunica vaginalis. The penis shows nothing abnormal. The patient's condition now becomes very grave, and one might suppose that he was dealing with a strangulated hernia, so that occasionally nothing but surgical intervention demonstrates the error. The prognosis is fatal unless an operation is performed; medical treatment is in vain, and only an early and radical procedure can save the patient. The nature of the operative intervention is not indi-

On post mortem examination, all the structures constituting the spermatic cord are found to be highly inflamed. The size of the cord is excessively increased; its circumference may be two inches or more. Though there is no effusion into the tunica vaginalis, that membrane is very much inflamed. On making a transverse section of the cord, creamy pus is found in the pampiniform plexus and in the vas deferens. Often, too, the epididymis is equally affected, but the testicle is normal. On microscopical examination, it is noticed that the walls of the veins of the pampiniform plexus, as well as those of the vas deferens, are swollen and infiltrated, their lumina being occupied by polymorphous leucocytes.

In the countries in which it occurs this affection is generally regarded as a form of elephantiasis. The author has examined the pus from the bacteriological point of view, and he has always found a diplostreptoceccus, which has been present also in the blood of the systemic circulation. In preparations stained with methylene blue, carbolized fuchsine, etc., these elements present themselves in pairs, suggesting the disposition of gonococci. They have no capsule, sometimes they are grouped in little chains, and they do not undergo decoloration by the Gram method, unless after its very prolonged application. They may be cultivated in various media, such as bouillon, peptonized water, agar, etc.

The patient's serum agglutinates the microorganisms, and the serum reaction is positive for one to fifty and sometimes even for one to a hundred, provided the disease has been running for four or five days. The serum of healthy persons or of those with streptococcic affections does not give rise to agglutination. The author thinks that the diplostreptococcus must be set down as the pathogenic organism unless further researches show that it plays only a secondary part in exciting suppuration. Apparently this disease offers one more problem in tropical medicine.

THE DANGERS OF IODOFORM.

In our issue for September 5th, in an article entitled The Dangers of Carbolic Acid Dressings, we referred to M. Salva Mercadé's remarks on carbolic acid poisoning (Archives générales de médecine, July). Proceeding to the consideration of certain other surgical antiseptics, M. Mercadé speaks of the occasional untoward effects of iodoform. We no longer dust the raw surfaces with that substance after ovariotomy, he says, and we do not blow it through drainage tubes into the depths of wounds. Nevertheless, it is still regarded as a very good antiseptic for certain purposes, and it is therefore well to be familiar with its defects.

Erythema and eczema are among the local results of its unfavorable action, but they may be dismissed with the remark that they disappear when the application of the drug is discontinued. But there are some general manifestations of its toxic influence which may appear even after the complete healing of the wound. They may be slight or severe, according to circumstances. Minor poisoning is shown by loss of appetite, loathing of food, and Then nervous sometimes nausea and vomiting. symptoms may supervene, such as insomnia, agitation, and occasionally delirium, but the temperature is not affected. Around the wound, however soundly it may have healed, there may appear an erythema that resembles urticaria. Examination of the urine reveals the presence of iodides.

The grave form of poisoning appears more suddenly. After a brief period of digestive derangements, nervous symptoms show themselves brusquely in the shape of hallucinations and delirium. The pulse is very frequent, and the urine has the same

characters as in the mild form. These symptoms may last only two or three days or they may be rather persistent. They are mitigated by the use of opium or morphine. If the poisoning becomes more aggravated, phenomena of depression ensue and the patient dies in collapse. Two other clinical types have been observed, particularly in children, the meningitic and the comatose. In the treatment it is, of course, understood that the employment of iodoform must be stopped at once. If the wound is still open it should be washed with a solution of potassium bicarbonate. Diuretics and bromides are to be given, also a five or ten per cent. solution of bicarbonate of potassium or of sodium.

Dissolving the iodoform in oil or in ether is no safeguard against the untoward effects of the drug. In a case cited by Zimmer (Thèse de Paris, 1907) as having been reported by Dresman (Beiträge zur klinischen Chirurgie, ix, 1892), a patient was treated for a white swelling of the knee by means of injections of iodoformized oil. This treatment was kept up for a number of months, the patient showing signs of mental disturbance. Finally resection of the knee joint was performed, and a mass of iodoform as large as a cherry stone was found. All the mental trouble disappeared as a result of the operation. In the Bulletins de la Société de chirurgie for May 18, 1904, Moty reported grave instances of iodoform poisoning, including a case of death, and in the same publication Delbet, while he was Trélat's interne, recorded the death of a child in consequence of an injection of iodoformized ether into a tuberculous elbow joint. But it seems that, in the ensuing discussion, M. Kirmisson could explain such occurrences only as due to faulty technique, an explanation which, we believe, is not generally regarded as satisfactory.

THE DETECTION OF THE GONOCOCCUS IN VAGINAL DISCHARGES.

Many inflammatory conditions of the female genital tract are suspected to be due to the gonococcus, and the clinician often expects the laboratory worker to make a diagnosis of gonorrhœal infection from the examination of smears made from the pus from these lesions. A paper by Dr. Fraser B. Gurd (Journal of Medical Research, May) shows what a difficult matter this is. As a result of examinations made in 113 cases, the author concludes that the study of smear preparations from fresh discharges, stained by the Gram method, is, as a rule, of little value, because of the large number of contamination organisms, the occasional presence of the Micrococcus catarrhalis, and the small number of gonococci present.

The only satisfactory method for the detection of

the gonococcus is to make cultures from the mucous membrane of the genital tract, and thus to isolate the various organisms to be found there. It is possible, in the majority of cases, to identify the gonococcus by cultural methods. Blood agar is the most suitable medium. Dr. Gurd is of the opinion that the gonococcus is of great importance in the ætiology of pelvic disease, especially of puerperal fever. He thinks that at least fifty per cent. of the women attending gynæcological clinics are suffering from infection with the coccus of Neisser. The lesions produced by the organism in question are prone to become chronic, so that viable organisms may be found years after the activity of the disease has subsided. The occurrence of pregnancy and labor is often sufficient to induce the active development of dormant organisms. The gonococcus, furthermore, is often a predisposing factor to a more serious streptococcus infection.

Obituary.

CHARLES HARRINGTON, M. D., of Boston

On Friday, September 11th, this eminent hygienist died suddenly while on a visit to England. He was born in Salem, Mass., on July 29, 1856. He was graduated from Harvard University in 1878 and from the Medical School of that university in 1881. After subsequent special studies in Leipsic, Strassburg, and Munich, he returned to Boston and became an assistant in chemistry at the Harvard Medical School. At a later period he was appointed professor of hygiene in the same institution. He was prominent in the work of the Massachusetts State Board of Health, of which he was the president. Dr. Harrington was a man of fine physique. and he was apparently at the height of his natural forces when death overtook him. He was a frequent contributor to the advancement of sanitary science, a man respected by the medical profession and by the community.

Aews Items.

Changes of Address.—Dr. E. Franklin Smith, to No. 11
East Forty-eighth Street, New York.
Yellow Fever in Cuba.—According to a despatch received at the War Department from Havana, there is one real case and one suspected case of yellow fever there.
The Society of Physicians of Canandaigua, N. Y.—A.

meeting of this society was held on Thursday, September The principal feature of the programme was a paper on Preventive Means against Mental and Nervous Dis-eases, which was read by Dr. G. Cook.

A Society for the Study of Beriberi has been organized in Tokio, with the chief of the Japanese Army Medi-cal Department as president. The object of the society is to study means of stamping out the disease, which attacked

many soldiers during the recent war.

Cholera in St. Petersburg.—According to press despatches, cholera is spreading rapidly in the Russian capital. In the four days, September 11th, 12th, 13th, and 14th, 401 new cases and 98 deaths were reported, and up to noon on Tue day, September (5th, 240 new cases and 60 deaths were reported.

Contagious Diseases in Chicago.-During the week ending September 5, 1908, there were reported to the De partment of Health 324 cases of communicable diseases, as follows: Diphtheria, 61 cases; scarlet fever, 60 cases;

follows: Diphtheria, 61 cases; scarlet lever, 69 cases; measles, 11 cases; whooping cough, 12 cases; typhoid fever, 126 cases; tuberculosis, 31 cases.

Scholarships for Women in the Medical Department of the University of Texas.—Eight scholarships of \$200 a year each have been established at the University of Texas, by Mr. George W. Breckenridge, of San Antonio. These scholarships are open to all women who are quali-

fied to enter the medical department of the university.

Winter Camp for Tuberculous Children.—Announce. ment is made by the Boston Association for the Relief and Control of Tuberculosis that the outdoor camp for tubercucontrol of Tuberculosis that the outdoor camp for tubercu

Personal.-Mme. Curie has been elected a corresponding member of the St. Petersburg Academy of Sciences.

Dr. D. J. Mackintosh, superintendent of the Western Infirmary, Glasgow, Scotland, is visiting the principal hospitals of the United States and Canada.

Dr. William Osler has been appointed Lord Rector of the University of Edinburgh.

The Naval Medical School, Washington, D. C .- The results of the recent examinations of candidates for appointment as assistant surgeons in the United States Navy show that five appointments have been made, which increases the membership of the class at the Naval Medical School to thirty members. One more examination is to be held, however, which may increase this number.

St. Mary's Hospital, Milwaukee.—Plans have been

filed for the new building for this institution, which is to be erected as a cost of \$400,000. A splendid site fronting on the lake has been selected, and it is said that when completed the building will be one of the finest in the city. Work on the building will be begun immediately, and it is expected that it will be completed in about eighteen months.

expected that it will be completed in about eighteen months. The Philadelphia College of Pharmacy.—At the graduation exercises of this institution, which were held recently, the honorary degree of Master of Pharmacy was conferred on the following men: Mr. Samuel W. Fairchild, of New York; Mr. Horatio Nelson Fraser, of New York; Mr. John F. Hancock, of Baltimore; Mr. S. A. D. Sheppard, of Boston; and Mr. William McIntyre of

Philadelphia.

A Pathological Laboratory at the City Hospital,
Newark, N. J.—The Board of Health of the City of
Newark, N. J., have created a pathological laboratory at
the City Hospital. Dr. Harrison S. Martland, assistant
pathologist to the Russell Sage Institute of Pathology, City
Hospital, Blackwell's Island, New York, has been appointed pathologist. The laboratory will be opened on
Cetaber i 1088 October 1, 1908

The South Dakota Medical Association .- At the annual meeting of this organization, which was held recently in Yankton, an association for the study of tuberculosis was formed, with the following officers: President, Dr. F. M. Crain, of Redfield; vice presidents, Dr. C. Gros, of Yankton, and Dr. A. E. Clough, of Deadwood; secretary, Dr. G. W. Potter, of Redfield; treasurer, Dr. E. C. Issenbuth of Redfield. huth, of Redfield.

The Wyoming State Medical Association.-The following officers for the ensuing year were elected at the annowing officers for the ensuing year were elected at the annual meeting of this association, which was held recently in Cheyenne: President, Dr. G. L. Strader, of Cheyenne; first vice president, Dr. R. C. Knode, of Sundance; second vice president, Dr. David Nelson, of Shoshone; third vice president, Dr. F. W. Johnson, of Newcastle; secretary, Dr. W. H. Roberts, of Sheridan; treasurer, Dr. Francis Hoff, of Thermopolis.

Scientific Society Meetings in Philadelphia for the Week Ending September 26, 1908:

Monday, September 21st. Northeast Branch, Philadelphia County Medical Society.
Wednesday, September 23d.—Philadelphia County Medical

Society.

THURSDAY, Neptember 19th.—Pathological Society; Ento-mological Section, Academy of Natural Sciences. Friday, Neptember 25th South Branch, Philadelphia

DAY. September 25th South Branch, Philadelphia County Medical Society; Northern Medical Associa-tion; Philadelphia Neurological Society.

Advisory Council to the Department of Charities, New York.—The following physicians have been appointed members of an advisory council to the department: Dr. Edward G. Janeway, president; Dr. Horst Oertel, secretary; Dr. William T. Bull, Dr. Joseph Blake, Dr. W. Gilman Thompson, Dr. Simon Flexner, Dr. Frince A. Morrow, Dr. Daniel M. Stimson, Dr. Clinton L. Bagg, and Dr. Joshua Van Cott.

Officers of the Missouri Valley Medical Association.—The following officers were elected at the annual meeting of this organization, which was held in Omaha; recently: President, Dr. C. B. Hardin, of Kansas City, Mo.; first vice president, Dr. A. B. Somers, of Omaha, Neb.; second vice president, Dr. J. M. Bell, of St. Joseph, Mo.; treasurer, Dr. T. B. Lacey, of Council Bluffs, Ia; secretary, Dr. Charles Wood Fassett, of St. Joseph, Mo. The next meeting of the association will be held in St. Joseph, Mo., in March, 1909.

The Second Congress of the International Society of Surgery will be held in Brussels, September 21 to 25, 7908, under the presidency of Professor Vinzenz von Czerny, professor of surgery at Heidelberg University. Among the subjects selected for discussion are the following: The Nature and Treatment of Cancer, Diseases of the Liver and Bile Dutes, Methods of Inducing Anæsthesia, Etiology and Treatment of Hernia, and the Surgery of the Spinal Cord. There will be the usual exhibition of surgical instruments and appliances.

The Health of Pittsburgh.—During the week ending August 29, 1908, the following cases of transmissible
diseases were reported to the Bureau of Health: Chickenpox.
2 cases, 0 deaths; typhoid fever, 59 cases, 2 deaths; scarlet fever, 32 cases, 2 deaths; diphtheria, 10 cases, 1 death;
measles, 5 cases, 0 deaths: whooping cough, 3 cases, 0
deaths; pulmonary tuberculosis, 22 cases, 8 deaths. The
total deaths for the week numbered 141, in an estimated
population of 565,000, corresponding to an annual death
rate of 12.97 in 1,000 of population.

Tuberculosis Meeting in Philadelphia.—There will be a conference of men interested in the study of tuberculosis in Philadelphia on Monday, September 21st. The meeting is to be held under the auspices of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis and the Pennsylvania Society for the Prevention of Tuberculosis. Many of the delegates to the International Congress on Tuberculosis are expected to attend the conference. The entertainment committee, of which Dr. Charles H. Frazier is chairman, has arranged for a banquet to be given at the Bellevue-Stratford Hotel, at which the Governor of Pennsylvania will preside.

Society Meetings for the Coming Week:

Monday, September 21st.—Hartford. Conn., Medical Society.

Tuesday, September 22d.—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetries and Gynæcology); New York Medical Union.

Thursday, September 22th.—Brooklyn Pathological So-

THURSDAY, September 24th.—Brooklyn Pathological Society; Brooklyn Society for Neurology; New York Celtic Medical Society.

Friday, September 25th.—Academy of Pathological Science, New York; New York Society of German Physicians. Saturday, September 26th.—West End Medical Society, New York.

Conference of Boards of Health.—The annual conference of State and provincial boards of health will be held in Washington, D. C., on September 25th and 26th. Among the topics to be discussed are: The Present Status of National and State Legislation relating to Public Health; a Law or Regulation Covering Country Slaughter Houses and State Meat Inspection; the Best Method of Providing County or District Health Officers; the Production of Vaccine and Antitoxine by the State; a Course of Instruction for Sanitarians and Sanitary Inspectors: the Welfare of Infants; Sanitary Inspection of States by a Representative of the U. S. Public Health Service: Regulations relating to the Quality of Milk and the Inspection of Dairies; Registration of Vital Statistics: Railway Sanitation; Present Management of Smallpox in Minnesota; Model Bill for the State Registration of Tuberculosis; Regulations relating to the Transportation of the Dead.

The New Haven County, Conn., Health Association held a meeting in New Haven on September 10th. Dr. J. C. P. Foster, of New Haven, president of the Connecticut State Commission on Tuberculosis, was present, and delivered the principal address of the afternoon. He spoke on the subject of tuberculosis, the duties of health officials in relation to the enforcement of laws relating to the disease, and the efforts being made by the association to prevent its spread. Officers to serve for the ensuing year were elected as follows: President, Mr. C. E. Hoadley, of New Haven; vice president, Mr. Hubert F. Potter, of North Haven; secretary and treasurer, Dr. E. A. Wilson, of Meriden.

The Mortality of Chicago.—During the week ending September 5, 1908, there were reported to the Department of Health of the City of Chicago 553 deaths from all causes, as compared with 584 for the previous week, and 574 for the corresponding period in 1907. The annual death rate in 1,000 of population was 13,31, as against a death rate of 14,20 in the corresponding period in 1907. The principal causes of death were: Apoplexy, 14 deaths; Bright's disease, 39 deaths; bronchitis, 7 deaths; consumption, 46 deaths; cancer, 32 deaths; diphtheria, 12 deaths: heart diseases, 38 deaths; intestinal diseases, 16 deaths; pneumonia, 35 deaths; scarlet fever, 4 deaths; suicide, 5 deaths; typhoid fever, 5 deaths; violence, other than suicide, 37 deaths; whooping cough, 4 deaths; all other causes, 121 deaths.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the todoscing statement of new cases and deaths reported for the two weeks ending September 12, 1008.

| | 711 5 | -Sept. 12- |
|--------------------------|---------|----------------|
| | | Cases. Deaths. |
| Tubercuiosis pu'n mais | 400 155 | 4-3 153 |
| Diphtheria | | 180 10 |
| Measles | | 0.5 |
| Searlet fever | 85 0 | 91 3 |
| Smallpox | | I |
| Varicella | | 14 . |
| Typhoid feve: | | 132 17 |
| Whooping cough | | 5 3 |
| Cerebro-pinal meningitis | 5 1 | 4 (- |
| | | |
| Totals | 941 208 | 924 202 |
| | | |

New York State's Exhibit at the International Congress on Tuberculosis .-- A prominent place has been allotted to New York State in the new National Museum by the Committee on Exhibits of the International Congress on Tuberculosis. The work of preparing this exhibit has been conducted under the direction of Dr. H. D. Pease, director of the State Hygienic Laboratory. Among Pease, director or the State Tygienic Laboratory. Among the organizations and institutions that will contribute to the exhibit are the State Department of Health, the Charity Organization Society of the City of New York, the Department of Public Charities, New York City, the State Department of Agriculture, the State Charities Aid Association of Charities and Public Charities and Publ tion, the State Commission in Lunacy, the State Prison Commission, the official and voluntary organizations for the Commission, the official and voluntary organizations for the prevention of tuberculosis of Albany, Buffalo. Brooklyn. Saranac Lake, Syracuse, Rochester, Schenectady, Troy, Utica and Rome, Adirondack Cottage Sanatorium at Trudeau, State Hospital for Incipient Tuberculosis at Raybrook, Reception Hospital at Saranac Lake, Stony Wold Sanatorium at Lake Kushaqua, St. Gabriel's Home at St. Gabriel's, Loomis Sanatorium at Liherty, Montehore Home at Bedford, Senbrerge Hospital for Children at Exp. Rock. at Bedford, Seabreeze Hospital for Children at Far Rockaway, New York State Hospital for Crippled and Deformed Children at West Haverstraw, and numerous private institutions. There will also be two large exhibits dealing with the relation of milk to tuberculosis. One of these will be a model of a pasteurization plant, contributed by Mr. Nathan Straus, and the other a model depot for Meyer, chairman of the New York State Committee on the International Congress, in cooperation with the Hon. Seth Low, Dr. W. Law, Jr., Mr. V. Everett Macy, and the Hon. R. A. Pearson, State Commissioner of Agriculture. There will be an extensive exhibit of pathological specimens showing the lesions produced by tuberculosis in various tissues of the body, contributed to by all the larger hospitals and medical schools throughout the State. Apparatus that is used in the treatment of tuberculosis, such as sleeping bags, window tents, reclining couches, etc., will also be shown.

Charitable Bequests .- By the will of Charles Goodman, the Jewish Foster Home and Orphan Asylum, of Philadelphia, receives \$250, and the United Hebrew Charities Society of Philadelphia receives \$500.

By the will of Annie V. Jackson, the Women's Hospital, of Philadelphia, receives \$200.

By the will of Mrs. Mary H. Upham, of Malden, Mass., the New England Baptist Hospital, Boston, receives \$1,500.

By the will of Michael F. Callinan, who died recently at Bryn Mawr, the Bryn Mawr Hospital receives \$5,000; for the establishment of a Michael F. Callinan Free Bed the Bryn Mawr Hospital receives \$5,000; the St. Joseph's Home for Homeless Boys, Philadelphia, receives \$15,000; and the Sisters of St. Francis's Hospital, Quincy, Ill., receive \$500.

By the will of Mr. Robert W. Lord, who died recently in By the will of Mr. Robert W. Lord, who died recently in Marlboro, Mass, Boston institutions receive bequests as follows: Children's Hospital, \$2,000; Convalescent Home of the Children's Hospital, \$2,000; Industrial School for Crippled and Deformed Children, \$2,000; Perkins Institution and Massachusetts School for the Blind, \$1,000; Massachusetts Society for the Prevention of Cruelty to Children, \$1,000; John Howard Industrial Home, \$1,000, Young Men's Christian Union, \$2,000; Women's Charity Club Hospital, of Boston, \$600; Society for Helping Destitate Methers and Infants \$600; Young Men's Christian Association for use of Travelers' Aid department, \$600; trustees, St. Stephen's Settlement of Boston at Welcome

By the will of Senator William F. Vilas, the University of Wisconsin will receive an eventual endowment fund of \$30,000,000.

By the will of Mary Ann Kelly, the House of the Good Shepherd, of Philadelphia, and Saint Vincent's Home, of Philadelphia, receive \$300 each. The Little Sisters of the Poor and the Leper Colony are among the institutions to receive a proportionate share of \$1,200.

By the will of Henrietta W. Levick, the Home of the Merciful Saviour for Crippled Children of Philadelphia receives \$5,000 for the establishment of a free bed in memory of Mrs. Louisa G. Wilson. The Home of the Merciful Saviour and the Pennsylvania Society for the Prevention of Cruelty to Children are contingent legatees.

The Health of Philadelphia .- During the week ending August 29, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Typhoid fever, 102 cases, 5 deaths; scarlet fever, 16 cases, o deaths; chickenpox, I case, o deaths; diphtheria, 47 cases, 6 deaths; cerebrospinal meningitis, I case, o deaths; measles, Io cases, cereprospinal meningitis, I case, o deaths; measies, 10 cases, 2 deaths; whooping cough, 15 cases, 4 deaths; pulmonary tuberculosis, 83 cases, 37 deaths; pneumonia, 24 cases, 16 deaths; erysipelas, 2 cases, 0 deaths; puerperal fever, 3 cases, 2 deaths; cancer, 21 cases, 23 deaths; tetanus, 3 cases. I death; trachoma, 5 cases, o deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 9 deaths; diarrhea and enteritis, under two years of age, 65 deaths; dysentery, 2 deaths. The total deaths numbered 389, in an estimated population of 1,532-738, corresponding to an annual mortality of 13.20 in 1,000 of population. The total infant mortality was 132; under one year of age, 111; between one and two years of age, 21. There were 25 still births, 14 males and 11 females. The total precipitation was 3.08 inches. The average daily temperature was 64°.

During the weck ending September 5, 1908, the following cases of transmissible diseases were reported: Typhoid fever, 107 cases, 10 deaths; searlet fever, 17 cases, 2 deaths; smallpox, 1 case, 0 deaths; chickenpox, 2 cases, 0 deaths; diphtheria, 49 cases, 7 deaths; cerebrospinal meningitis, 2 cases, deaths; d I death; measles, 5 cases, I death; whooping cough, 12 cases, I death; pulmonary tuberculosis, III cases, 53 deaths; penumonia, 17 cases, 21 deaths; puerperal fever, I deaths; penumona, 17 cases, 21 deaths; tetanus, 3 cases, 2 deaths; trachoma, 2 cases, 10 deaths; tetanus, 3 cases, 2 deaths; trachoma, 2 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 5 deaths; diarrhea and enteritis, under two years of age, 50 deaths; dysentery, 1 death. The total deaths numbered 302, corresponding to an angual death, rate of 123 in 1000 of popularity of page 125. dysentery, I death. The total death infinite a 302 contests sponding to an annual death rate of 13.21 in 1,000 of population. The total infant mortality was 115; under one year of age, 80; between one and two years of age, 26. There were 34 will built a 2 in be and 11 female.

Dith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL. September 10, 1908.

- The X Ray and Fractures, By Frederick J. Cotton. The Use of Tuberculin as a Diagnostic Agent in Pul-
- monary Tuberculiosis, By Harry Lee Barnes,
 The Growth and Development of Surgery in the
 Smaller Cities,
 Omentopexy to the Intestine Deprived of Its Mesentery,
 The Company of the Intestine Deprived of Its Mesentery,
 The Company of The Intestine Deprived of Its Mesentery,
 The Intestine Deprived On Its Mesentery Deprived On Its MesenThe Intestine Deprived O
- The Use of Tuberculin as a Diagnostic Agent in Pulmonary Tuberculosis.-Barnes observes that the tuberculin test is at present necessary for the prompt diagnosis of many suspected cases of pulmonary tuberculosis, but it should be given only to patients who have symptoms or signs of tuberculosis. If given to other persons a positive reaction has no clinical value, because of the uncertainty as to the location of the lesions and the probability of healed lesions reacting. In the great majority of doubtful cases of pulmonary tuberculosis the subcutaneous test will give a correct diagnosis, which, if given judiciously in small initial doses, is safe; it should be given in Addison's disease with extreme caution or not at all. Of 225 hospitals in the United States having seventy-five beds or over, forty per cent. have used tuberculin in the diagnosis of pulmonary tuberculosis, 26.6 per cent. have used the subcutaneous method, 32.8 per cent. have used the ophthalmic method, 14.2 per cent. have used the cutaneous method. The accuracy of the ophthalmic and cutaneous tuberculin tests is yet to be proved, and cases reacting negatively to these tests should be tested by the subcutaneous method, unless the last named method is contraindicated. Cases suitable for the subcutaneous test should receive it in preference to the ophthalmic test, because of its greater safety. Of eighty-one medical colleges in the United States, 87.6 per cent. advise that the tuberculin test be given as a last resort in suspected cases of pulmonary tuberculosis, 76.5 per cent. have demonstrated the tuberculin test to their students, 62.9 per cent. have demonstrated the test by subcutaneous injecion, 70.3 per cent. have demonstrated the ophthalmic test, 37 per cent. have demonstrated the cutaneous test. All medical students should be thoroughly trained in the use of the three methods of applying the tuberculin test.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. September 12, 1908.

- The Cerebral Centres for Taste and Smell, and the Uncinate Group of Fits, By CHARLES K. MILLS. The Renal Origin of Vesical Calculi, with Observations on Calcareous Tumors of the Bladder,

- On Calcareous Tumors of the Bladder,

 A New and Rapid Method of Perineal Drainage in Suprapubic Prostatectomy,
 By Joseph Ransohoff.
 The Ætiology of Chronic Nontuberculous Arthritis.
 By H. W. Marshall.
 Early Treatment of Some Superificial Cancers, Especially Epitheliomata, by Pure Radium Bromide Rather than Operation or X Rays,
 By Francis H. Williams.
 Clinical Aspects of Tumors of the Mediastinum, with
- Clinical Aspects of Tumors of the Mediastinum, with Consideration of the Findings in Four Cases,

 By Frank Smithles.
- Nonsurgical Treatment of Uterine Displacements, By H J BOLDT.
- Nitrous Oxide and Oxygen in Dental and Major Sur-By F K. REAM

 The Nonrelationship of Active Cellular Division to the Prognosis of Malignant Disease,

By GUTHRIE McCONNELL.

10. The Vaginal, the Vertical Abdominal, and Pfannenstiel
Incisions. Three Procedures for Entering the Pelvic
and Abdominal Cavities, By E. E. MONTGOMERY.

The Cerebral Centres for Taste and Smell, and the Uncinate Group of Fits.-Mills reports the case of a patient, who had suffered for about ten years from attacks of spells of unconsciousness, which were followed sometimes by convulsions. Examination for taste showed this sensation to be disarranged, while smell was retained. Autopsy of the brain showed a tumor on the left side of the brain, which hemisphere was much larger than the right. In a transverse section at the level of the upper part of the callosum the tumor filled the lateral ventricle above the thalamus, extending to the roof of the ventricle, and cutting off the anterior part of the ventricle above the head of the caudate nucleus from the posterior part of the ventricle. The tumor had the appearance of a glioma, was infiltrating and gelatinous in places. The upper part of the thalamus was entirely replaced by it. At a little lower level, where the anterior and posterior limbs of the internal capsule were well formed, the tumor invaded the thalamus, filled the front part of the posterior horn of the lateral ventricle, implicated the extreme anterior part of the median aspect of the occipital lobe, distorted the outer wall of the posterior horn of the lateral ventricle without extending into the temporal lobe, and involved the posterior part of the posterior limb of the internal capsule and a large part of the lenticula. At a level about one fourth of an inch lower the tumor extended to the anterior median surface of the occipital lobe, involved almost all of the lenticula, but did not extend into the white matter of the temporal lobe nor into the head of the caudatum, nor into the foot of the cerebral peduncle, which just below this level was beginning to form. At a level about one fourth of an inch still lower, where the cerebral peduncle was well formed, the tumor filled all of the anterior and median portions of the temporal lobe (uncinate and hippocampal convolutions) and the middle part of the lobe, but left the occipital lobe intact except in its extreme anterior part, and did not invade the lateral aspect of the temporal lobe or its subcortical white matter. tumor extended as a pointed process of brain tissue over the left cerebral peduncle, this being the only portion of the tumor appearing on the surface. The author's observations incline him to the view that the epigastric aura is only a part or at least a manifestation of the localized cerebral discharge, that it is due, in other words, to a discharge lesion which affects the cortical centres concerned with the representation or control of the sensory or motor or both sensory and motor side of the epileptic syndrome. Many facts would tend to indicate the truth of this view, among these being those which show the frequency of epigastric with gustatory and olfactory phenomena in reported cases. It is true that these gustatory and olfactory phenomena are often absent. It is, nevertheless, probable that sensory and motor centres concerned in some way with gastrointestinal interpretation have a more or less separate existence, and are situated in the same region of the brain as are the cortical centres for

taste and smell. The author concludes that much work remains to be done regarding the localization of functions in the inferior portion of the temporal lobe and the orbital surface of the frontal lobe. Cases like the one here first recorded, and the others to which reference has been made, are of value in the solution of the physiological problems concerned with these portions of the brain. The indications are all in favor, not only of the location in the uncinate region of the centres for smell and taste, but also for the representation in this region and its vicinity of the sensations produced by the activities of the abdominal and thoracic viscera.

5. Early Treatment of Some Superficial Cancers by Pure Radium Bromide Rather than Operation or X Rays .- Williams observes that the radiations from radium are uniform in quality and quantity and that thus this remedy has a great advantage over the x rays in efficiency and safety. The gamma rays from radium are useful in some cases for relieving pain; they have great penetrating When they are used as an analgesic the power. beta rays should be excluded or the patient may be burned, because the proportion of gamma rays is so much smaller than that of the beta rays that the exposure must be much longer when the gamma rays are used, to make them effective. The beta rays from radium are the useful rays in the treatment of rodent ulcers, epitheliomata, and other superficial diseases. They can be applied in the mouth and other cavities. Radium should be used early, and in suitable amount and strength; the treatment is painless and leaves the least scar; it does not produce as good results in cases in which an operation has first been done or scraping, caustic, or other irritating treatment has been used, or the x rays have been applied. Improvement follows the use of radium more promptly in many cases than the use of the x rays and the total duration of treatment by radium, though sometimes long, is much shorter than with the x rays. In some cases success has followed the use of radium where treatment by the x rays has failed. A surprisingly large proportion of external cancers, especially epitheliomata, have healed and remained healed for some years under treatment by radium, and the author's experience thus far indicates that for certain cases of external new growths it is a better remedy than those previously at our command. Recurrences follow all methods of treatment, and radium is no exception, but so far as present experience goes this is unusual, and they have yielded to further treatment by radium. The disadvantage of radium is its cost to the physician.

To. The Vaginal, the Vertical Abdominal, and Pfannenstiel Incisions.—Montgomery states that the advantages of the vaginal route are: Drainage is from the most dependent portion of the peritoneal cavity; in a fair proportion of cases it permits the cure of the patient by a less radical procedure; the convalescence of the patient, even after a hysterectomy, is more rapid and attended with less discomfort than is associated with the same procedure through the abdomen; the restoration to health is expedited, and the patient is spared such sequelæ as ventral hernia and ventral adhesions; in many cases it permits the peritonæum to be closed over the vagina, the stumps of the broad ligaments

being brought out so that all ligatures and raw surfaces are excluded from the peritoneal cavity, leaving opportunity for the formation of adhesions. The route has the following disadvantages: It must be, in many cases, a blind one, as extensive adhesions must be separated by touch; injuries to the intestines or previously existing intestinal sinuses are likely to be overlooked, fæcal fistula may form and imperil life, or destroy the health and comfort of the patient; extensive adhesions of the intestines are unrecognized, or form subsequent to the operation, and lead to obstruction and consequent disaster. The initial adhesion need only be a small one on the outer margin of the coil of gut to become a serious menace. With this adhesion as a fixed point, peristalsis may lead to twisting of the loop and result in obstruction. An obstruction may exist which other peristaltic movements may undo, producing symptoms of intermittent obstruction, or the torsion may become aggravated. Of the abdominal route the author remarks that the incision in the median line is without doubt the procedure capable of the widest application. It affords ready access to the pelvis, and when required may be so extended as to permit the inspection and manipulation of the contents of the entire abdominal cavity. Observation discloses, however, that the patient suffers greater discomfort during convalescence than is experienced by the patient who has suffered a similar or greater deprivation of organs by the vaginal route. Nature's barriers are necessarily broken down, and both peritonæum and incision are exposed to infection. The situation of the wound is not the most favorable for drainage, as a portion of the cavity, generally that which has been subjected to the greatest injury, is below the most dependent portion of the incision. Drainage, consequently, must be against gravity. In acute infections, this defective drainage frequently compels the operator, in order to be safe, to do more than he would feel obliged to do had the vaginal route been substituted. The advantages of Pfannenstiel's method are thus summarized: It permits a larger exposure of the field for a comparatively small incision; as the interior and middle lines of suture closing the wound are at right angles to each other, the probabilities of subsequent hernia are lessened; as the incision through the skin is, under ordinary circumstances, within the portion covered by the pubic hair, with its regrowth the site of the scar is completely obscured. Its disadvantages are as follows: It is of limited application and consequently unsuitable for the removal of fibroid tumors of any size; the necessarily large opening of the cellular tissue makes it undesirable for the treatment of pus collections within the pelvis, as it is difficult to preserve the wound tissues from infection.

MEDICAL RECORD

September 12, 1708

The Relation of the Medical Profession to the Hous-ing Problem, By S. A. KNOPF. Remarks on Vente Intestinal Obstruction, with I spe-

cal Reference to Intussusception.
By Faward W. Peterson.

Abcornal Monthly of the Stomach a Valuable Factor in the Diagnosis of Gastrie Lesion.

By Millow R. Baroker.

Lupu Fryllomate a. By J. Phillip Kayoky.

5. Preparation for a Countentmary Diagnosis,
By Julius J. Valentine.
By Henry R. Lesser.

2. Remarks on Acute Intestinal Obstruction with Especial Reference to Intussusception .- I'eterson says that the cardinal symptoms of acute obstruction are pain, vomiting, and persistent constipation. The general picture is one of shock, accompanied by marked restlessness. The face is pinched and anxious, and the eyes are sunken. There is more or less cyanosis, due to impeded respiration. Respiration is accelerated and shallow, and even the tone of the voice may be altered. The skin is clammy, the extremities cold, and the temperature is often subnormal. When the temperature is elevated, it is due either to the absorption of the toxines or to the presence of peritonitis. Thirst is extreme, and the tongue is dry. Hiccough is often distressing. The pulse is small, weak, and rapid. The urine is scanty. high colored, or may be suppressed; usually it contains an excess of indican, indicanuria being especially marked when the seat of the obstruction is high. Abdominal tympany usually develops late and varies greatly, according to the nature and site of the obstruction. The lower the occlusion in the intestinal tract, the more pronounced is this symptom; when the trouble is high up, tympany is either slight or absent altogether. The presence and constancy of these symptoms will depend, of course. upon the location of the occlusion and upon the degree of obstruction and strangulation. Of the treatment the author remarks that as a general rule, the distention of the colon by hydrostatic pressure, the insufflation of the bowel with gas, abdominal taxis. massage, etc., are not only unscientific and useless. but in some instances are positively dangerous. Puncture of the intestine through the abdominal wall for the relief of tympany is mentioned for condemnation only. Inversion and violent shaking of the patient are apt to do more harm than good. The administration of shot or metallic mercury, employed in olden times, is mentioned merely as a curiosity in the way of treatment. Do not give purgatives, as they increase the pain and vomiting, and add to the risk of gangrene, perforation, and peritonitis. They can accomplish no possible good. Use opium very cautiously, for this drug so masks the symptoms and obscures the general picture, that it leads too often to fatal delay in the employment of radical treatment. Do not employ stomach lavage, except for diagnostic purposes or until a diagnosis has been settled, for this measure has almost the same sedative effect as opium, and is apt to give the attending physician a feeling of false security. After a diagnosis is determined, lavage of the stomach and colon should be carried out, for it lessens the vomiting, the pain, and the absorption of toxines. and also renders safer the administration of an anæsthetic. Generally speaking, a prompt laparotomy, quickly performed, is by all odds the safest, the simplest, and the surest method of accomplishing a cure. The operation itself, if performed early, is not more difficult or dangerous than laparotomy for the other intraabdominal lesions. A general anæsthetic is contraindicated in cases seen late, where shock and collapse are pronounced, for in such a state, a narcotized patient is in danger of drowning

in his own vomitus. Here the operation should be performed under local anæsthesia, with, perhaps, the addition of morphine and hyoscine. There is no single measure so useful in combating the shock of intestinal obstruction cases in general as the intravenous infusion of normal salt solution. It strengthens the heart, allays the extreme thirst, and stimulates the urinary flow. Of drugs, the most valuable is sparteine sulphate, administered hypodermically; it slows and strengthens the heart and has decided diuretic action. After an obstruction has been relieved there are one or two practical points which will add greatly to the comfort of the patient. The stomach should be washed out immediately, and as often thereafter as indicated. Eserine salicylate should be started at once. This drug will aid in reestablishing normal peristalsis and by its action will lesson or prevent tympanites. Hot saline solution should be given by rectum, at frequent intervals, or, if necessary, it can be given continuously. The bowels should be moved by enema when they do not act spontaneously, rather than by drugs by

3. Abnormal Motility of the Stomach a Valuable Factor in the Diagnosis of Gastric Lesions. -Barker observes that the loss of gastric motility characterized by long continued stagnation of food in the stomach, and the partial or complete absence of mucus in the gastric contents, are characteristic of cancer, and when such conditions prevail careful search for the Oppler-Boas bacillus should be made. If this is found the diagnosis of cancer is positive; if it is not found the patient should not be allowed to pass into that stage of the disease in which operative measures are futile, by waiting for this more positive element in the diagnosis before exploratory measures are taken. A large accumulation of mucus in the stomach is one of the important elements in the diagnosis of chronic gastritis. This is due, in a large degree, to faulty contact between the ingested materials and the nerve centres in the stomach walls causing gastric immotility, which, in turn, prevents the escape of the accumulated mucus into the intestines. The vicious circle being thus formed is broken up in certain cases by ·long continued lavage; hence one of the beneficial effects of this treatment in chronic gastritis. A prominent factor in the diagnosis of gastric ulcer is the exaggerated motility of the gastric walls. This is characterized by the absence of any portion of a test meal in the stomach a comparatively short time after its ingestion. Mucus is also almost or entirely absent from the stomach in this condition, being digested as quickly as deposited in the stomach by the ever present overacid secretion, and being expelled from the stomach quickly because of the exaggerated motility of the gastric walls.

BRITISH MEDICAL JOURNAL

.lugust 20. 1008

The Significance of Some of the Symptoms of Appendicitis from the Point of View of the Urgency of Operation,

By C. M. MOULLIN.

Fibrolysin in Cicatricial Pyloric Obstruction,

By M. B. STEWART.
Case of Acute Intestinal Obstruction in a Hæmophilic,

Some Points in the Anatomy and Pathology of the Hernial Sac,

By B. H. KINGSFORD.

By B. H. KINGSFORD.

By E. S. CARMICHAEL.

The Treatment of Curonic Empyema by Hyperaemia and Hypertransudation, By J. S. Dick. and Hypertransudation, (Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Public Health and Forensic Medicine. Presidential Address, By H. H. LITTLEJO By H. H. LITTLEJOHN. Discussion on Smoke Abatement,

Introduced by H. A. DES VOEUX.
National Military Service and National Physique, By J. E. BARKER.
Discussion on the Administrative Treatment of Phthisis,

Introduced by A. WALKER. 10. Coordination in Pathology and Public Health,

By F. G. BUSHNELL 11. Death Certification and Death Verification, By J. B. JAMES

12. Discussion on Infant Mortality,

13. A State Regulation of Proprietary Medicines and Foods, By G. E. PRITCHARD. 14. The Hampton Interpretation of the Operation of Sew-

age Purification, By G. L. TRAVIS.

15. Lodging Houses under the Public Health Acts Amend-By J. C. McWalter

ment Act, 1907, By
Section of Physiology.

16. Discussion on the Causes of Dyspnæa,

Introduced by J. S. HALDANE

17. Observations on Pulmonary Ventilation in Disease,
By A. P. Beddard and M. S. Pembery.
18. Changes in the Pituitary Body after Removal of the
Thyroid,
By P. T. Herring.

19. Pancreatic Juice and Glycosuria,

By J. S. GOODALL and H. G. EARLE 20. Some Notes on Suggestion in Its Physiological Bearings, By R. J. ANDERSON.
21. Appetite: An Attempted Analysis of the Psychic Fac-

By J. S. GOODALL. tor,

Section of Anatomy.

22. Discussion on the Teaching and Examination in Anatomy. 23. A Discussion on the Health and Disease, Introduced by C. Addison in Health and Disease, Introduced by A. Trong in Introduced by C. Addison in Annual Introduced by C. Addison in Introduced by

24. Mesophotography and Its Application to Delicate Un-

hixed Embryos,

By C. J. PATTEN.

Significance of Fusion of the Atlas to the Occipital Bone, and Manifestation of Occipital Vertebræ, By G. E. SMITH

26. Some Notes on the Hard Palate and Maxilla in Primates,
By R. S. Anderson.
27. Righthandedness,
By G. E. Smith
By R. S. Anderson.
By G. E. Smith

1. Appendicular Inflammation.-Moullin states that the actual exciting cause of appendicular inflammation is always and everywhere septic organisms which always invade the appendix from the mucous surface. Stercoliths, foreign bodies, old adhesions, strictures, etc., help by favoring the growth. and retention of the septic organisms. Fatigue, exhaustion, and cold help by lowering the resistance of the patient's tissues. It is the position of the appendix lying covered with peritonæum in the general peritoneal cavity that makes the consequences so serious. The ideal in operating is to prevent these consequences. The sharp attack of pain is always preceded by a premonitory stage of general abdominal discomfort and pain, with nausea. In other words, septic decomposition has been going on in the intestine. There is always the possibility during this initial stage of clearing out the septic organisms from the appendix. But once the acute iliac pain has begun medical treatment is hopeless. Complete abstinence from food for twenty-four hours should be insisted upon, and the patient should be confined to bed. Calomel is the only intestinal antiseptic of any value. The sudden outbreak of acute iliac pain means that the parietal peritonæum is involved. The appendix itself is devoid of ordinary sensation and ordinary sensory nerves. But the parietal peritonæum is

exquisitely sensitive, and where there is the least degree of inflammation, its sensitiveness is increased tenfold. The severity and persistence of the pain are of the greatest importance. If, without opium, it subsides in a few hours, and no collapse or muscular rigidity appears, the inflammation is probably slight. But if the severity of the pain continues, and particularly if the area over which it is felt shows a tendency to enlarge, then early operation will probably be required. Gradual alleviation of the pain suggests that the inflammation is becoming localized. But rapid disappearance of the pain at the end of twenty-four or forty-eight hours, especially in a young subject, is a most disquieting symptom. It often means that the patient is becoming poisoned; that the appendix is becoming gangrenous; that a dangerous degree of septic absorption has set in; and that the pain is not felt because the patient is fast losing the capacity of feeling it. In many instances the skin over the right iliac fossa is exceedingly sensitive—"hyperalgesia" is a better term than "hyperæsthesia." The region is quite defined and bears no relation to the anatomical position of the appendix. Affections of the gallbladder and duodenum also have their distinctive areas of hyperalgesia, but they always lie above the umbilicus. This cutaneous hyperalgesia has nothing to do with the peritonæum. It is merely the expression of the irritable state of the nerve centre, which receives afferent impulses equally from the appendix and the skin over the iliac fossa. Deep tenderness is entirely different and is directly proportionate, both as regards extent and intensity, to the state of irritation of the parietal peritonæum beneath the spot at which the pressure is applied. The demonstration of McBurney's point is of the greatest value, as the point of greatest tenderness is nearly always over the base of the appendix. A single blood examination is not of great value, unless the number of leucocytes is excessive. Successive examinations at intervals of a few hours are of much greater value. A progressive increase in the number of the leucocytes calls for immediate operation. The pulse rate is the most valuable indication in appendicitis; an increasing pulse rate is an absolute command for operation. The temperature, taken by itself, is seldom conclusive. Even when there is a large abscess, the temperature may rise but little above the normal. A sudden rise of temperature during apparent convalescence nearly always means a relapse with extension of suppuration, demanding immediate evacuation. A rapid fall of temperature, especially with a rising pulse rate, means the beginning of the hopeless stage of general septic poison-There is no single symptom which is constantly present. But one single important symptom, if it is definitely getting worse, is enough to justify immediate operation. The earliest operations are the most successful, not only as regards immediate mortality, but as regards rapidity of recovery.

4. Anatomy of Herniæ.-Carmichael's conclusions are as follows: 1. In early childhood clinapparently normal children, shows that between fifty and events five per cent present thickening due to incomplete closure of the funicular process. 2. The

anatomical conditions present in operated cases support the view of a congenital origin, as shown by the relation of the sac to its coverings, and its presence in spite of a narrow canal and a small external abdominal ring. 3. The histological and naked eye appearances of the sac in most cases do not afford reliable evidence of its congenital origin or otherwise, although a markedly thickened sac, if small, is suggestive of the embryonic condition.

9. Pulmonary Tuberculosis.-Niven, in discussing the notification of pulmonary tuberculosis, lays down the following fundamental conclusions: 1. Children very rarely have tuberculosis at birth. The proportion affected probably increases continuously within the first few years of life. 2. Some cause of infection present in early childhood becomes much less prominent after the first few years. 3. With the advent of adolescence, when the strain of work is introduced, the numbers affected again rapidly increase. 4. The proportion attacked increases up to a fairly advanced period of life. The diminution in the death rate in advanced years is due to the cessation of employment. 5. În some manner or other infection is conveyed in houses, workshops, etc., in which a consumptive is present. 6. It is not true that tuberculosis is a disease contracted mainly in infancy from milk, and remaining latent to become active later on. When children, who have had tuberculosis and recovered, develop the disease in later life, it is probably due to reinfection. 7. The disease is of recent origin in most cases. 8. Many circumstances, such as poor nutrition, bad habits, overcrowding, etc., may condition the attack. But the infective element is always a requisite. 9. Repeated and prolonged exposures to infection are required in order that healthy persons may contract the disease. 10. The most common latent period is about one year. 11. By far the most common vehicle of infection is infectious dust derived from tuberculous sputum.

LA PRESSE MEDICALE August 8, 1908.

I. Remote Results of the Resection of the Appendix in the Course of Chronic Appendicitis,

By A. Broca and F. Barbet. By René Martial. 2. The Itch of Cement,

I. Remote Results of the Resection of the Appendix for Chronic Appendicular Inflammation.—Broca and Barbet report the results of observations made on thirty-seven patients who had been operated upon for chronic appendicular inflammation, which show almost without exception a marked improvement in the general health.

2. The Itch of Cement.—Martial describes this condition, which he calls by the name it has been given by the workmen in cement, a dermatosis which starts as a papule only slightly pruriginous followed by an eruption the pruriginousness of which is intense. It is met with only among the

workmen in cement.

August 12, 1008

1. Dry Pericarditis in the Course of Intoxication with Mer-1. Dry Pericardius in the Course of infoxication with Medical Chloride, By Anoré Perir and J. Milhit.
2. Apropos of the Early Diagnosis of Tuberculosis Response to M. Moro.

By 11. Nototil Akironom and P. Vernier.
3. Mineral Waters in the Treatment of Syphilis.

By CARRON DE LA CARRIÈRE

4. The Probable Existence of Excitoglandular Nerves for the Renal Secretion, By H. DELAUNAY.

1. Dry Pericarditis during Intoxication with Mercuric Chloride:-Petit and Milhit report a case of this nature met with in a woman, twenty-one years of age. They conclude that pathological cardiac manifestations, especially of the pericardi-um, may be observed in cases of poisoning with mercuric chloride, that it is not often of infectious origin, but is to be classed with the amicrobic toxic forms of pericarditis of the nature and mechanism of which we know little.

LA SEMAINE MEDICALE. August 12, 1908.

Nervous Enteromyxorrhœa, August 19, 1908.

By L. CHEINISSE.

I. Solutions of Quinine for Intravenous Injection,

By PH. CHAPELLE. 2. Treatment of the Sciatic Nerve by Liberation of Ad-

hesions

1. Solutions of Quinine for Intravenous Injection.—Chapelle sums up his article in the following four points: 1, A ten per cent. solution of the basic chlorhydrate of quinine with the addition of 7.5 per cent. of sodium chloride, the solution of Bacceli or of Lenzmann, is very hypertonic. 2, A ten per cent. solution of the basic chlorhydrate of quinine without the addition of the sodium chloride is hypertonic. 3, The isotonic solution of the basic chlorhydrate of quinine should contain about seventy-five grammes of the salt to the litre. 4, In a solution containing less than seventy-five grammes of the basic chlorhydrate of quinine to the litre, one hundred and twenty-five milligrammes of sodium chloride may be added in place of each lacking gramme of the quinine salt to make the solution isotonic

BERLINER KLINISCHE WOCHENSCHRIFT.

July 27, 1008.

Bases of the Antiferment Treatment of Carcinoma,

The Influence Exerted upon Malignant Tumors by Atoxyl and Foreign Albumin, By Anton Sticker.
Injections of Placental Blood in Carcinoma,

By EDMUND FALK 4

The Signification of Antitrypsin in the Blood, By von Bergmann and Bamberg.

Reduction of Obesity and Dehydration in Extreme
Corpulence,

By L. Brieger. 5

Studies Concerning the Power of Syphilitic Sera to Divide Fat, and the Importance of Lipolysis in the

Serum Diagnosis of Syphilis, By Jules Citron and Karl Reicher

Concerning Experiments with Various Derivatives of Tubercle Bacilli, By A. Wolff-Eisner. g

8. Therapy of Hypertrophy of the Prostate, By CASPFR.
9. Allophanic Acid, By M. OVERLACH.
10. Excretion of Lead after the Internal Use of Lead O. Excretion of Lead after the Internal USE OF LEASE By G. DIESSELHORST.
Acetate, By G. DIESSELHORST.
II. Concerning the Dehiscences of the Maxillary Antrum,
By Kanasugi.

2. Influence Exerted upon Malignant Tumors by Atoxyl and Foreign Albumin.-Sticker declares that atoxyl does not attack the tumor cells directly but exerts a sort of catalytic action by stimulation of the hæmatopoietic system, especially of the bone marrow, so as to produce an increase of material hostile to the tumor. The removal of the destroyed tumor, when the destruction has been brought about by the injection of blood, is further carried out by the neutrophile leucocytes, perhaps with the aid of the proteolytic ferments. The treatment with injections of blood is to be considered to belong to the specific autofermentative methods, the atoxyl treatment to the heterofermentative.

3. Injections of Placental Blood in Carcinoma .- Falk finds that the placental serum is not to be considered a means for removing carcinoma to be compared with trypsin, papajotin, or the liver

5. Obesity.—Brieger treats obesity by a combination of a modified Karell's treatment with hydrotherapy and gentle mechanotherapy which he not only considers efficient in reducing the corpulence but also in strengthening the heart and nervous system.

8. Therapy of Hypertrophy of the Prostate. -Casper has tried the x ray treatment and abandoned it as useless. Aseptic catheterization and suprapubic prostatectomy remain the standard meth-

ods of treatment.

10. Excretion of Lead after the Internal Use of Lead Acetate.-Diesselhorst found lead in the urine and perspiration even after small doses. He did not find an increased excretion in the perspiration in the light bath as distinguished from other means of diaphoresis.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT July 28, 1908.

I. Reduction of Obesity by Pure Milk Treatment

By Moritz. Concerning Collapse Induration of the Apex of the Right Lung from Chronic Interference with Nasal Respiration and its Distinctive Diagnosis from Tuberculosis of the Lungs, By BLUEMEL.

Concerning the Occurrence and Signification of the Retrograde Lymph Movement in the Region of the Angulus Venosus Sinister, By Hart. Concerning Treatment of Ophthalmia Neonatorum with

Cattle Serum, By GILBERT.

Concerning Saroson's Ozet Baths, By MÜLLER. Concerning Artificial Sulphur Baths, By KLOPSTOCK. Operation for Cancer of the Breast and its After Treatment, By HEILE.

Karell's Milk Cure and the Under Feeding in Disturbances of Compensation Physiology of Acclimatization, ances of Compensation, By HIRSCHFELD.

ances of Compensation,

10. Ability of the Boas-Kaufmann Bacilli to Grow in the Contents of the Stomach,

By LATZEL.

11. Myopia and its Prevention (Concluded), By BEST

12. Needs of Reform of the Penal Code from a Psychiatric Point of View (Concluded), By Craver 13. Obiting of Point of View (Concluded), 13. Obituary of Professor Herman Snellen,

By Eversbusch. I. Reduction of Obesity.-Moritz usually gives the patient two litres of milk a day, divided into five portions. The patient drinks one half litre at 7:30 a. m., one fourth litre at 10 o'clock, one half litre at 1, one half litre at 4, and one half litre at 7. This quantity may be increased or diminished according to the behavior of the patient, who must be seen every other day. If the loss in weight is too rapid the quantity of milk is increased, if too slow it is decreased. Cooked milk is preferred, but with a good source of milk and in adults raw milk may be used. One or another portion may be of sour milk. The milk may be drunk either cold or warm, according to the taste of the patient. If the patient is still thirsty after drinking the milk one half to three quarters litre of water may be given, or may be mixed with the milk. Nothing else is given in addition to the milk, with the possible exception of the water. He finds this to be the simplest, most convenient, and cheapest known treatment of this condition. It enables the physician most easily to individualize in the treatment of his patients, and makes the least call upon the aptitude of the patient to carry out his directions. Severe hunger does not occur, in spite of the small amount of nutrition, and thirst is absent. The milk treatment is particularly indicated in the presence of complications on the part of the heart or kidneys.

2. Collapse Induration of the Apex of the Right Lung.—Blümel says that there is a typical disease of the lungs in individuals with chronic interference with nasal respiration, first described as such by Kroenig, that consists of a fibrous induration with collapse of the apex of the right lung, and can be distinguished from tuberculosis by the history, clincal appearance, bacteriology, and the test with tuberculin. The diseased condition is due to the inhalation of dust. It is preceded by catarrh of the pharynx, larynx, trachea, and bronchi produced in consequence of the exclusion of the nose as a protection to the respiratory apparatus. The apices of the lungs are involved before the other parts, the right apex before the left, because of anatomical conditions. The disease is a form of chronic, fibrous, interstitial bronchitis.

3. Retrograde Lymph Movement.-Hart asserts the retrograde lymph movement from the thoracic duct into the lymph gland in the angulus venosus may, under certain conditions, produce not only tuberculosis of the tracheobronchial glands but of the cervical as well. Therefore tuberculosis of the lower cervical glands with or without coincident pulmonary tuberculosis is not a proof of an infection in the region of the commencement of the cervical lymph tract, as it may come by way of the lungs and the bronchial lymphatic glands, or from the thoracic duct.

4. Treatment of Ophthalmia Neonatorum.-Gilbert recommends instead of confining the treatment to the usual frequent cleansing of the eyes with slightly antiseptic solutions to add to these the washing out of the eyes personally every two hours. He does not favor its adoption as the sole means of treatment.

11. Myopia and Its Prevention.-Best declares that the quintessence of the practical part of his long paper is this: Only near work, reading, writing, and partly hand work, makes the growing eves of our children near sighted. Much more important than the care for good light is the limitation of the reading and writing, the abolition of the German alphabet, and the spread of this knowledge among all circles of people.

GLASCOW MEDICAL JOURNAL.

Jugust 1908

Congress of the Extremities after Pheumonia, with Notes of Two Illustrative Cases,

An Experimental Investigation into the Function of the Thynnis Gland, By ALEXANDER MACLENNAN Case of Chorion Epithelioma,

Case of Chorion Epithenoma,
By George Balfour Marshall.
Case of Rare Pelvic Tumor reschald of Four Years,
By Thomas Kay

- 1. Gangrene of the Extremities after Pneumonia.—McGregor remarks that the evidence of varieties of causes of gangrene is not so complete in pneumonia as in typhoid fever, on account of the paucity of cases and observations, but the similarity of the lesions in the two diseases is very marked. The following factors in pneumonia may determine gangrene of the extremities: 1. The blood containing pneumococci, probably in all cases, and with a marked agglutinating power which increases up to the crisis and then gradually diminishes. 2. The weakness due to the acute fever, and in particular the cardiac asthenia, which is most marked immediately after the crisis. 3. The occurrence of pneumococcic endocarditis, even in the earlier stages of pneumonia, sometimes resulting in the formation of clots or vegetations, which, passing into the arterial circulation, become emboli. 4. The invasion of the veins by pneumococci causing phlebitis and thrombosis, sometimes followed by pulmonary embolism. 5. A probable similar invasion of the intima of the arteries resulting in arterial thrombosis. 6. Thrombosis of arteries following embolism, where the clot formation extends to some distance and shuts off the collateral circulation.
- 2. Experimental Investigation into the Function of the Thymus Gland.-MacLennan observes that the thymus may be a lymphatic gland, but it is so specialized as to be virtually something more; it is one of the series of glands which by an internal secretion regulate the various functions of the body. It is really an accessory one, for its function can be taken up by others. It is to be remarked that simultaneous extirpation of the spleen and thymus invariably ends in death. One would therefore infer that the spleen can carry on along with its other manifold functions those of the temporary thymus. Extirpation of the thymus does not give rise to hypertrophy of adenoid tissue elsewhere. The function of the gland is temporary, for as growth advances the gland atrophies, though in man the gland never quite disappears till after puberty. There are cases on record, however, where there has been no thymus. The thymus and the thyreoid are closely associated developmentally, anatomically, physiologically, and pathologically. In two extirpations of the gland in the human subject he has found the thymus continuous with the left lobe of the thyreoid. The results of ex-periments have shown that the thymus is un-necessary to the economy when the thyreoid is gone, and when the thymus is removed less thyreoid suffices. The importance of this relationship is apparent in certain diseases. Thus, there is a type of Graves's disease where extirpation of the thyreoid is followed by sudden death, and on post mortem examination the thymus is found enlarged. An enlarged thymus is credited, certainly rightly in some cases, with being the cause of death in the so called status lymphaticus, and after removal of the thyreoid the enlarged thymus gives rise to the same conditions as produce the so called thymus death. Therfore, in such cases, where thyreoidectomy was decided necessary in Graves's disease, the writer recommends that the thymus be first sought for, and if enlarged be removed as a preliminary to the thyreoidectomy.

THE MILITARY SURGEON

September, 1908.

What is the Most Effective Organization of the American National Red Cross for War, and What Should be its Relations to the Medical Departments of the Army and Navy? By Henky I. RAYMOND. The Medical Service of the United States Marine Corps,

By Frederick L. Benton.
Observations upon Treponema Pertenuis (Casteilani) of Yaws and the Experimental Production of the Disease in Monkeys, Part II, By Captain Percy M. Ashburn and Captain Charles F. Craig.

Treponema Pertenuis in Yaws.-Ashburn and Craig believe, as a result of their observations, both clinical and experimental, that Treponema pertenuis is the cause of yaws, and is constantly present in the setum of yaws lesions, and can be demonstrated in sections of yaws papillomata by the Levaditi method. The inoculation of the serum from human yaws lesions containing Treponema pertenuis causes yaws in monkeys and the organisms can be easily demonstrated in the lesions of the infected animals. The variations in the morphology are explainable by the deformities produced during the preparation of the serum for examination. Treponema pertenuis and Treponema pallidum can be distinguished by the results obtained from the inoculation of monkeys. The length of the period of incubation in Cynomolgous philippinensis (Geoffroy) is approximately twenty days, while the duration of the inoculated disease in this species of monkey varies from twenty-one to eighty-four days. Yaws and syphilis are distinct diseases.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of April 20, 1908.

The President, Dr. ROBERT T. MORRIS, in the Chair.

Various Clinical Types of Acute Dilatation of the Stomach.-Dr. ROBERT COLEMAN KEMP read this paper. He expressed the opinion that acute dilatation was of quite common occurrence, especially in its milder forms. In some instances the attacks were primary, resulting from dietetic indigestion; in others they were found in connection with different diseases and caused a modification or apparent exacerbation of the original affection. His object in presenting this paper was to impress upon his hearers the necessity of careful and frequent examination of the abdomen in all cases and to call attention to various clinical symptoms in the production of which such acute dilatation was often the exciting cause. The paper was not only clinical, but also experimental, and it included a study of the effects of artificial distention of the stomach, some physiological experiments on animals, and an investigation, upon the cadaver, of the mechanics of acute dilatation of the stomach. There were four anatomical types: I. Acute dilatation of the stomach alone. 2. Acute dilatation of the stomach supervening upon an existing chronic dilatation, due to stenosis of the pylorus. 3. Acute dilatation of the stomach

and duodenum-the most fatal type. 4. Acute dilatation of the stomach and intestines—a mixed type. The last of these was frequently present in the acute infectious diseases, such as pneumonia and typhoid fever, and in the acute distention of typhoid, with active hæmorrhage, lavage would often prove of service. If the fatal cases were followed up into the post mortem room, it would astonish many to find how frequently there was a marked distention of the stomach and intestines, though during life this might not have been thought to have any bearing upon the fatal issue. In speaking of certain anatomical features of the stomach and duodenum, Dr. Kemp said that, as the result of experiments made by himself and Dr. A. T. Weston, it seemed demonstrable that there was a valvular action of the cardiac, even in the cadaver. This action was probably variable to a greater or lesser degree in the living subject. In experiments on dogs by Kelling and Braun, it had been found that, after gastrostomy, it was impossible to produce acute dilatation of the stomach when the animals had recovered from the anæsthetic, since, when a certain degree of inflation was reached, vomiting was excited and the stomach was emptied. During narcosis, however, the stomach could be distended to nearly the bursting point without the escape of air from the œsophagus. After complete paralysis of the stomach such escape was prevented, evidently by some valvular action of the cardiac. The transverse portion of the duodenum was held very firmly in place near its termination by a band of fibrous tissue descending from the left crus of the diaphragm, and the Kemp and Weston experiments went to show that this fibrous attachment, which had not hitherto been considered in the mechanics of the gastroduodenal type of acute distention, was an important factor in the production of obstruction.

Having referred to the nerve supply of the stomach and its importance in connection with the subject, the speaker proceeded to classify the various clinical types of acute gastric dilatation, or, possibly it might be said more correctly, the various clinical symptoms in the production of which such acute dilatation was a factor. In infants and young children convulsions from overloading the stomach were not infrequently observed. In a child of two years. suffering in this way, he had noted acute dilatation of the stomach, which extended two fingerbreadths below the umbilicus. After severe vomiting the convulsions ceased, and the stomach returned to its normal size. Mangelsdorf, who had carried on very extensive researches in epilepsy, had demonstrated acute dilatation of the stomach during the convulsive seizure, and believed it to be a factor in the production of the attack. Other nervous affections in connection with which acute dilatation had been observed were migraine, tetany, and chorea. Dr. Kemp had seen in the second of two attacks of tachycardia a young woman of twenty-one who had mitral stenosis and aortic regurgitation, but with excellent compensation. Both attacks followed marked indiscretions in diet, and in the one in which he saw her there was pronounced gastric dilatation, which disappeared after emesis from warm water.

Having related a case of pseudoangina pectoris,

produced by acute dilatation of the stomach, which had come under his observation, Dr. Kemp said that in order to study the effects of acute dilatation on the pulse, respiration, and blood pressure, Dr. Satterthwaite and himself had observed these conditions in two normal subjects, a physician and a trained nurse, and in a case of gastroptosis. Each stomach was distended by means of carbon dioxide gas generated from tartaric acid and sodium bicarbonate, and the effects, as shown by the sphygmomanometer and otherwise, carefully noted. Coincident with the rapid gastric dilatation there were marked increase in the rapidity of the pulse and respiration, changes in the character of the pulse, and fall of blood pressure. The stomach of the physician, from whom the most reliable data were secured, extended downward to one fingerbreadth below the umbilicus. He stated that he experienced much discomfort, suffering from pain beneath the sternum and over the abdomen and a sense of flushing of the face and suffocation, accompanied with nausea. The stomach was then aspirated, and these sensations disappeared. The chart of the recorded efforts showed that the pulse had risen from 72 to 135, becoming irregular in force and with some intermission in the beats. The respirations had increased from 18 to 24, and the blood pressure had fallen from 135 to 120. In a series of experiments in artificial acute dilatation of the stomach made by Dr. Kemp on dogs, of which he gave the details, the results corresponded with those observed by Dr. Satterthwaite and himself in

the clinical experiments mentioned. The speaker then reported a fatal case of gastrointestinal distention complicating typhoid fever, in which the pulse became rapid and feeble and the respiration shallow and gasping, with marked cyanosis, and in which death occurred with cardiac dilatation, resulting apparently from pressure interference alone. Such distention he believed to be one of the direct causes of death in these cases. In typhoid the tympanites seemed to be generally regarded as chiefly intestinal, while little attention was paid to the condition of the stomach. When abdominal distention occurred, it was due either to the systemic infection or to dietetic errors, and in either case a selective action on the intestines appeared absurd. The mixed type of acute dilatation (the gastrointestinal) was quite common. Several fatal cases of the gastroduodenal type had been reported, but they were comparatively rare. There were many instances in which cardiorespiratory symptoms occurred which might be suggestive of some pulmonary complication, where examination would show the cause to be acute distention of both stomach and intestines. Postural treatment (raising the head of the bed on blocks) would demonstrate that the condition was due chiefly to pressure, just as in some of the experiments described. By this means in one case the tympanitic area in the thorax was lessened by four inches, while the pulse fell from 140 to 120 and the respiration from 40 to 20, showing the influence of pressure alone. In pneumonia the extroduodenal type of acute dilatation, with characteristic symptoms, had proved fatal in a num-Let of instances, the condition being evidently due to involvement of the vagi during the course of a pneumonia at the base of the lung. Here the most frequent type, however, was the mixed, or gastro-intestinal, and the toxines of pneumonia and improper feeding were the chief causes of its occurrence. In many cases the symptoms suggested an extension of the pulmonary disease, or even cardiac complications, but a careful examination would show distention to be the causative factor, and the postural treatment would, by removing pressure, temporarily relieve the acute symptoms.

A case of acute dilatation of the stomach was narrated in which coprostasis was the chief symptom associated with this. The patient, a man of fifty-five, had indulged very heartily in bananas and milk, and the distention promptly followed. For ten days there was no movement of the bowels, and a movement was secured only after two days of active treatment, making in all an obstipation of twelve days' duration. On the tenth day, when marked gastric dilatation was still present, he was first seen by Dr. Kemp. After lavage, the stomach retracted to the normal, and the obstinate constipation was finally overcome by enteroclysis and the administration of calomel and various salines through the stomach tube.

The next case he reported was one of acute dilatation of the stomach supervening upon a chronic dilatation due to stenosis, occurring in an actress, forty-five years of age, in whom the cause of the pyloric stenosis was a partially healed ulcer. Here also the acute dilatation resulted from a dietary indiscretion. Having stated that, while acute dilatation might occur at any age (his youngest patient being two years of age and his oldest seventy-five), three fourths of the cases were probably met with during adolescence or early adult life, and in the matter of sex the cases were about equally divided, he proceeded to give Conner's classification of the cases into groups. In speaking of postoperative dilatation, he said that this occurred more frequently after chloroform than after ether. Manipulation of the viscera, shock, uræmia, or sepsis might be a factor in its production. Conner had stated that in no instance did it follow an operation on the stomach itself, but in one of Dr. Kemp's cases it occurred after a gastroenterostomy. In this instance he believed that the diet was chiefly responsible, though the anæsthetic and the handling of the stomach might have been contributory factors. The so called prolonged postnarcotic vomiting and the supposed vicious circle were probably quite frequently due to some degree of acute dilatation of the stomach.

The characteristic symptoms of acute gastric dilatation in some cases were sudden abdominal distention, pain, tenderness, excessive vomiting, constipation, thirst, scanty urine, and rapid collapse. In the gastric and gastroduodenal types the distention was not uniform, but chiefly filled the left half and lower part of the abdomen, while the right hypochondrium appeared to be flattened. If the swelling subsided after thorough lavage, it was proof that the difficulty was confined to the stomach or to the stomach and duodenum; while, if the distention remained after lavage it showed that the intestines were also involved. Splashing sounds (succussion) and the

sense of fluctuation were aids to the diagnosis, but they were not always present, and particularly in the early stages, when there was but little fluid in the stomach. Percussion would generally show the resonance increased, but this would be interfered with when there was much fluid, being most important when the splash and fluctuation were absent. Peristaltic waves of contraction were very seldom The prognosis in the recorded cases was bad. We had here one of the most formidable conditions in medicine or surgery, the death rate in this class of cases being seventy-two per cent. Cessation of vomiting was not always a favorable sign, as it might occur, with increasing abdominal distention, just before death. In the future, however, the speaker believed, in consequence of a more careful study of this affection, including its earlier recognition, the percentage of fatalities would be very materially diminished.

The next two sections of the paper were devoted to the morbid anatomy of acute dilatation and to an elaborate study of the mechanism of the production of the condition. In the concluding portions the diagnosis, prophylaxis, and treatment were considered. In the way of prevention, rapidity in operating and the minimum amount of anæsthesia, as well as of manipulation of viscera, were important, and after operations care in the kind of feeding and avoidance of pushing the food in too large quantities were necessary. In typhoid fever, pneumonia, and other infectious diseases, the abolition of milk diet and the substitution of broths and strained soups of various kinds, such as barley, rice, and gruels, was a step in the right direction. If a patient had had one attack, the condition of the gastric secretion should be investigated, irregularities should be corrected, and a course of proper diet should be instituted. In every case of acute dilatation of the stomach the stomach should immediately be evacuated by lavage, and this should generally be repeated in two or three hours, and thereafter at intervals of from four to six hours during the first twenty-four hours. In severe cases it might be necessary to repeat the lavage even more frequently, and to continue its use for some days. All feeding should be by the rectum for several days, or until the symptoms had disappeared, and if there was severe thirst, saline enemata or even hypodermoclysis might be employed. Rectal irrigation was of value if intestinal distention was present, and it was also useful in promoting bowel action. peristaltic action of the stomach and intestine should be started up as soon as possible, and it was Dr. Kemp's practice, unless contraindicating circumstances were present, after washing out the stomach with water in which two ounces of milk of magnesia had been dissolved, to give from three to five grains of calcmel through the stomach tube before removal, and a saline four to six hours later by the same method. In his case with coprostasis it was interesting to note that the addition of electricity to the continuous enteroclysis first produced a movement of the bowels. Drugs which were of service were strychnine and belladonna (or atropine hypodermically). Exercise had been recommended, but it was depressing. The therapeutic measure next in importance to lavage was postural treatment, the method employed depending upon the anatomical type of the dilatation and the character of the case. In the gastrointestinal type the semi-oblique or nearly sitting position was required, this being secured by blocking up the head of the bed. The second method which had been suggested was elevation of the foot of the bed, the object being to relieve pressure upon the duodenum. The objection to this was the danger of pressure on the heart and lungs. Third, in the gastroduodenal type the lateral position (either right or left) had relieved the symptoms. Fourth, in this type the preferable method was the abdominal position (the patient lying on the belly). Operative procedures had not proved successful in this affection.

Pepsin Determination. — Dr. MAX EINHORN presented an apparatus devised by himself which simplified the Jacoby-Solms method of pepsin determination.

The Local and Surgical Treatment of Chronic Diarrhœa. — This paper, by Dr. Samuel G. Gant, has been published. (See New York Medical Journal, August 15, 1908, pp. 289 et seq.) In connection with the paper, Dr. Gant presented eight patients upon whom he had operated, in most of the cases for ulcerative colitis. The operations done in different instances were appendicostomy, colostomy, cæcostomy, and the new Gant operation. Some of them were performed as long as two years ago, and the patients were now in excellent health, although in one case a hernia had resulted from the operation (an appendicostomy). In some cases the operation had been done only very recently, and the patients, not yet cured, had all gained in weight and otherwise showed marked improvement. The seventh case was one of gonorrhœal ulcerative proctitis, and the eighth one of carcinoma. In the latter instance Dr. Gant contemplated a radical operation, the resection of a considerable portion of the bowel.

Four Cases of Perforating Ulcer of the Alimentary Canal.-Dr. H. BEECKMAN DELATOUR read this paper. A man, thirty-three years old, thirty-six hours after the onset of severe abdominal pain, attended with chills and some febrile reaction, had a large swelling in the epigastrium. After an incision above the umbilicus and the separation of adhesions below the stomach, there was an escape of pus, which, however, did not soil the peritonæum. Zinc gauze was packed into the opening, the peritonæum sutured over this, and the abdomen closed without drainage. The patient was then placed on the right side and an incision made along the twelfth rib, the dissection being carried up until the abscess cavity was reached from behind. After a large quantity of thin, fœtid pus had been evacuated, the end of the piece of gauze introduced from in front was withdrawn, and a rubber drainage tube inserted. Subsequently, when milk had been taken by the mouth, it would immediately appear at the drainage tube, indicating a perforation at the seat of an ulcer on the posterior wall of the stomach. Later the wound healed and there was no further trouble. The second case, in a man, fifty-six years of age, was one of perforation of the duodenum. On operation, an opening about a quarter of an inch in diameter was found on the inferior aspect

of the first portion of the duodenum, and there was necrosis of some of the adjacent bowel wall. In closing the orifice, which was done by a continuous silk suture, there was some difficulty in getting the sutures placed in tissue which would not tear out. On the fifth day the iodoform gauze drain which had been used was removed, and the temperature, which had been up to 101° F., became normal. In two weeks the wound had completely healed. During the fourth week the centre of the wound broke down, and it discharged freely for about ten days. On opening the abdomen for the purpose of closing this sinus, the intestine was found everywhere adherent, and, on attempting to break down the adhesions, the gut was torn completely across, so friable was the tissue. To repair this a resection of some two inches was done and an end to end anastomosis made. after which the abdominal wound was closed. From this time on there was no further trouble about the wound, but the patient did not regain his strength and occasionally had attacks of abdominal pain. The bowels were easily moved. Nearly a month after the second operation, an especially severe attack occurred, but his general condition was then such that operative interference could not be considered, and he rapidly grew worse and died, thirty-six hours after the beginning of the attack. The autopsy showed a volvulous of the sigmoid, with several inches of gangrenous intestine. This was far from the original seat of trouble and had no direct connection

The third case was that of a woman, forty-three years of age, a patient of Dr. Merzbach's, who made the diagnosis of probable intestinal perforation. Laparotomy was performed, and a punched opening, a quarter of an inch in diameter, entering the lumen of the gut, was found on the anterior surface of the transverse colon, about four inches from the hepatic flexure. The perforation was in the centre of an indurated area extending an inch around it, and all this area was excised. The opening in the colon was closed with silk Lembert sutures, and the patient was discharged from the hospital, cured, on the twelfth day.

The fourth patient, a boy of fifteen, had been operated upon for suppurative appendicitis six years before. Thirty-six hours before his admission to the hospital he was seized with violent abdominal pain, and the attack was characterized by vomiting, chills, fever, collapse symptoms, and some abdominal distention. Later the pain became localized below the umbilicus, just inside the scar of the previous operation, and a diagnosis of intestinal obstruction by a band or adhesions resulting from the appendectomy was made. When the abdomen was opened a coil of the ileum was found bound down to the lower lumbar vertebræ and perforated. In consequence of the firmness of the adhesion and the had appearance of that portion of the intestine, a resection was determined upon, about six inches of the bowel, including the area of perforation, being removed. Before closing the external wound, which was done without drainage, the abdominal cavity was thoroughly irrigated with normal saline solution and sponged out. The operation was attended with considerable shock, and for two or three days there was some febrile reaction with abdominal distention. From this time on recovery was uninterrupted, except for a slight point of infection at the lower angle of the wound, believed to be due to contact with fæces during the operation, and at the end of three weeks the patient was well. Dr. Delatour stated that twelve years ago he had reported seven consecutive cases of this accident, and in each the operation performed had proved little more than an ante mortem examination. He was therefore pleased to present now these four cases with practical recovery in all, since in Case II death had been due to an independent condition. This result, he believed, was largely due to an earlier diagnosis. Improved operative technique must, of course, be recognized as a decided factor, but this alone was not sufficient to account for the success. The one distinguishing feature in such cases was the sudden, sharp onset of pain, accompanied in many instances by symptoms of collapse. Following this was a period of apparent improvement, and it was just here that the danger lay; for if these patients were permitted to move about, the slight protective adhesions Nature had provided would give way. A general peritonitis would result, and an operation was then less likely to be successful.

A Corset for Visceral Ptoses.—Dr. A. ERNEST GALLANT gave a demonstration of his corset for visceral ptoses. The two special features of his method of treatment, he said, were replacement by posture and support without compression.

Dr. WILLIAM H. THOMSON said that chronic dysentery had long been one of the opprobria of medicine. A number of years ago he had pointed out that we should certainly not expect an ulcer of the leg to heal if it was subjected to the irritating and toxic conditions which intestinal ulcers were subjected to, and that the only rational treatment of the latter was to wash out the bowel after every evacuation. In these chronic cases he scarcely ever gave any medicine internally, and he had found the local treatment much more successful than any other. He was therefore much pleased to learn of the results accomplished by Dr. Gant, and said he was entirely willing to hand over to the surgeon all cases in which the seat of trouble could not be reached except by operative procedure. It might, indeed, be laid down as a settled fact that local treatment was the only rational method of treating any mucous surface. As regarded the bladder, for instance, this had long been recognized. When, some time ago, Dr. Weir had suggested to him the opening of the appendix as a new method for the treatment of mucous colitis, he (Dr. Thomson) had told him that he was delighted to know of this troublesome member being turned to any good use whatever. Autoinfection was the one great infection of the human race, and nothing could be more in accord with the lifelong desire he had had of controlling this infection in the intestinal canal than the successful achievement of Dr. Gant in this direction. In the matter of tympanites, we had, on account of the nerve supply involved, a far more difficult and extensive subject. The relation of the three cavities of the body, the cranial, the thoracic, and

the abdominal, to vitality was a most interesting question, and without doubt the abdominal cavity had a closer relation to this than both the others together. In the abdomen was situated the great solar plexus of the sympathetic system, and back of tympanites was the ominous significance of a great shock to life. In pneumonia, for instance, as Dr. Kemp had pointed out, it was important to watch the abdomen carefully. Acute dilatation of the stomach was here a very serious matter. There was imminent danger of fatal shock, for a toxæmia was producing an extremely severe vital depression. He had known patients who had passed the crisis, vet in whose cases the prognosis was uncertain. Gastrointestinal tympanites was a thing that he invariably kept in mind as a dangerous possibility, and he did not like to see a penumonia patient flat on his back. One of the many functions of the sympathetic was the making of substances which were real drugs, and the most powerful of these was adrenalin. The adrenal gland was more essential to life than the kidney, and it added to the bile a secretion which was an alkaline chemical agent, sodium taurate. Whenever tympanites had been produced, it meant that something had attacked the great centre of vitality. We had a toxæmia, and the question in pneumonia was not, to what extent was the lung involved, but how severely was the patient poisoned? So in typhoid fever. This disease presented three types. The first was one of pure toxemia, and the second one of hyperpyrexia. In the third the whole brunt was upon the intestinal tract, and this was the worst type. Repeatedly, when he had attended to the stomach, he had derived help from the hypodermic injection of eserine.

Dr. Einhorn thought that many of the cases referred to by Dr. Kemp, such, for instance, as those met with in migraine, were merely cases of atony, and not to be regarded as acute dilatation of the stomach. In diagnosticating this condition we must be guided more by the symptoms than by anything else. If there was distention of the abdomen with vomiting, the mobility of the stomach was interfered with, and the condition was really a grave one. The tympanites met with in pneumonia and typhoid fever was a symptom complex, and, as had been

said, was of septic origin.

Dr. JOSEPH MERZBACH said that acute dilatation of the stomach was by no means a very rare condition, and more frequently than not it escaped observation when present. In perforations of the gastrointestinal tract he agreed with Dr. Delatour that the success of an operation depended largely on the

matter of early diagnosis.

Dr. Joseph Kaufmann said that there was a tendency to attribute acute dilatation of the stomach too much to mechanical causes. This seemed to him to be a mistake, as he believed the condition to be really due to septic influences acting on the nervous centres controlling the stomach. One kind of acute dilatation had not been referred to by Dr. Kemp. namely, that produced by easily fermentable substances. In acute dilatation, such as the post-operative and other varieties, the effect on the heart was very marked. As to the treatment, he agreed with Dr. Kemp that lavage was the most efficient

means at our command, and he said he would employ it even where hæmorrhage was present.

Dr. John C. MacEvitt described a case of postoperative acute dilatation of the stomach which had been referred to in Dr. Kemp's paper. On the fourth day, after a supravaginal hysterectomy, symptoms simulating acute obstruction developed, and an exploratory laparotomy was performed. The stomach filled the abdominal cavity, extending into the pelvis. After insertion of the stomach tube three quarts of fæculent matter and much gas escaped, and the stomach gradually subsided to the normal.

Dr. Kemp said that acute atony and acute dilatation of the stomach were relative. A case might reasonably be described as one of acute dilatation, he thought, when the lower border of the stomach reached a certain point and the condition was accompanied with the symptoms described. Dr. Kaufmann had apparently misunderstood him as to the mechanical causation. In the vast majority of the cases acute dilatation was due to septic influences, and he had certainly intended autointoxication to be the keynote of his paper.

In reply to an inquiry as to what became of the fluid which was injected into the small intestine, Dr. GANT said that it was allowed to remain in the

bowel for twenty or thirty minutes.

New Inventions.

A FACE BANDAGE
By Frederic Griffith, M. D.,
New York.

The writer is convinced of two things regarding American surgery, namely, patients are kept in bed too long, and dressings are too bulky. Every day in hospitals throughout the United States one may see master surgeons at work whose knives never



falter, but who, in even routine, put patients back bed "two weeks" for this operation. "six weeks" for the other, and at the end the degree of pugnacity to get up manifested by the individual is taken into serious account. Before he goes to the cot, however, the operator has

swathed the section of body with turns and thicknesses of bandage, gauze, and cotton, much like the oldtime priests of Isis gave to a mummy notable.

Especially about the head, face, and neck our surgeons, aided by two now far famed men of memory, demonstrate their ingenuity. The fact remains that the lighter a dressing for these parts the better for the ease, comfort, and surgical welfare of the patient. Presence of suppuration, here

as elsewhere, indicates desirability for more frequent dressing of the wound involved rather than reliance placed upon bulk of material to hold pus secure from observing eyes of patient and his friends. Attention to the wound cleft before closure, seeking always dry surfaces for coaptation, gives better return in uncomplicated restorations than dependence in pressure and bulk of dressing to absorb subsequent oozing. Safety pins and raw cotton probably help the course of a trephine operation but little; to the same degree wobbling fragments in broken jaw which a chin splint and fourtailed bandage does not hold snug had better be wired at once rather than to rely upon memory and multiplication table to set a Barton Gibson dressing.

A light, retentive application which the writer saw employed by Italian surgeons after wounds of the face consists of a simple "four tail." Any portion of an individual's physiognomy between the malar bone and the angle of the jaw, and in front from the bridge of the nose to the mouth, can be adequately covered in. The patient's own ears are pegs of support for this dressing, as shown in the cut. The bandage may be made from a yard length of muslin roller two to six inches in width.

49 EAST SIXTY-FOURTH STREET.

Book Antices.

IWe publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Nierendiagnostik und Nierenchirurgie. Von Dr. G. KAP-SAMMER. I. Teil. Mit 29 Abbildungen im Texte. Pp. xii-432. II. Teil. Mit 34 Abbildungen im Texte. Pp. xi-507. Wien und Leipzig: Wilhelm Braumüller, 1907. (Price, \$5.)

Kapsammer's work is one of the most important contributions to the subjects of renal diagnosis and renal surgery that have appeared since the publication of Casper and Richter's Functionelle Nierendiagnostik. The book is intended for specialists and special students, and all elementary details have been weeded out. Kapsammer has devoted a number of years to the study and experimental investigation of his theme, and as a result holds certain very positive views on the subject, especially with reference to the fallacies of some of the methods of functional diagnosis that have been proposed within the last ten years. He offers an array of facts and experiments in support of his views which are calculated to shed much light upon the cause of the uncertainty which has characterized many of the findings with such methods as cryoscopy, the methylene blue test, etc., and has lessened the popularity of these methods in clinical work.

The first volume deals with diagnosis; the second, with renal surgery proper. Opening with the subjective and objective signs of renal disease, the author passes on to the older methods of examining the renal secretion. These methods, including the determination of the specific gravity, of the percentage of urea, of the chlorides, and of albumin, are of great value in giving us clues as to the presence of anatomical lesions, but of no value in telling us the functional condition of the kidneys. Passing next to the new methods, including cryoscopy, the coefficients of refraction, of electroconductivity, etc., the methylene blue, phlorrhizin, indigocarmin, and other tests, each of these is described in detail as to technique, theory of action, results, etc. The most trustworthy of these methods, in the author's experience, is the phlorrhizin test, which is useful even when other tests fail.

The methods of separating the urine are considered next. The Nitze indirect catheterizing cystoscope has rendered the author the best and most trustworthy service. He has no use apparently for the direct catheterizing instruments so popular in this country, and in speaking of these omits to mention Tilden Brown, while Ayres is spoken of in passing (page 120) and Lewis's air cystoscope "without lenses" is spoken of as not worthy of further consideration (page 123). Kapsammer has not a single kind word for the "separators" or "segregators," including those of Luys, Cathelin, and others. These instruments are worthless for diagnostic purposes, and are not needed by any one who knows how to catheterize the ureters.

The next section, the most important in the book, deals with a study of the separate urines obtained by urethral catheters in both man and experimental animals. Kapsammer shows by these experimental data (1) that the weight of the kidney is rarely equal on both sides; (2) that there is always more or less difference in the amount of urine excreted by either kidney at the same time in normal animals, as well as in the amount of sugar excreted on either side normally after the phlorrhizin test; (3) that the presence of a ureteral catheter on one side leads to reflex polyuria on that side; (4) that the freezing point normally differs on the two sides, the difference being from -0.01 to -1.77° C. All these experiments were followed up by autopsies on the dogs tested, and normal kidneys were found in these animals. He, furthermore, found in normal persons quantitative differences in the secretion on either side, though these differences did not range so high as to interfere seriously with functional tests. The excretion of solids (absolute amount) was more constant on both sides than that of water, the latter fluctuating considerably at times. Contrary to the notions of Hermann, Landois, Ludwig, and other physiologists, there was no alternation of function whereby each kidney alternately took up the burden of excretion. The ratio of excretion between the two kidneys is a fairly constant one. Contrary to Albarran's view, the size of the kidnev has nothing to do with the amount of urine it secretes.

The most important anomaly of secretion resulting from the introduction of ureteral catheters is the reflex polyuria to which Kapsammer called attention as early as 1903. This polyuria occurs especially on the healthy side, so that the percentage of solids on that side is often lessened. Some urine also flows away alongside the catheters, making comparative tests less accurate. For these reasons a comparison of the specific gravity, urea, total solids, etc., on each side is of little value. A larger amount of albumin may be excreted by the healthier kidney, owing to the reflex polyuria on that side. or else owing to a toxic inflammation of that kidney, which is due to the disease in the other organ. Hence a quantitative comparison of the albumin-

urias on either side is of no value.

The reflex polyuria on the healthy side is also the "fly in the honey" in cryoscopy, for the freezing point on the healthy side may be as high as 0.00° C., while it may be lower (more normal) on the diseased side, where there is no polyuria and therefore a higher percentage of solids. With this Kapsammer practically sounds the death knell of cryoscopy, for if this method is of no value in separated urines, it is certainly useless in combined

urine (page 304). The methylene blue test as a comparative diagnostic method presents many factors of uncertainty, and has been practically superseded by Voelker and Joseph's indigocarmin test. Kapsammer was the first to show the value of this test with catheterism of the ureters, while Voelker and Joseph originally had intended it to supplant catheterism. The best and most reliable comparative test of renal function is the phlorrhizin test with ureteral catheters in place. Here, however, it is useless to estimate the comparative percentage of sugar in the urine (reflex polyuria again interfering); the time of appearance of the sugar should alone be taken as a criterion of functional efficiency.

In the second volume the various surgical diseases of the kidney are taken up in detail, and the application of the above described methods is illustrated in 182 case histories, all of which are given at length. Kapsammer's book constitutes a most valuable contribution to our present knowledge of the kidney, and is a monument to his ability as a clinician and his brilliancy as an investigator along one of the most difficult paths of surgical

progress.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Anatomy, Descriptive and Surgical. By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London, etc. Seventeenth Edition, Thoroughly Revised and Reedited, with Additions, by John Chalmers DaCosta, M. D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, Philadelphia, and Edward Anthony Spitzka, M. D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia, Illustrated with 1,149 Engravings. Philadelphia and New York; Lea & Febicer, 1008. Pp. xxvi-33 to 1614. New York: Lea & Febiger, 1908. Pp. xxvi-33 to 1614.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending September 11, 1908: Smallpox-United States

| Places. | Cases Deaths |
|--|--------------|
| Alabama - Mobile \ \ \ \ \ \ \ \ \ \ \ | 1 |
| California - San Francisco \ug. 23 29 | 2 |
| Indiana Indianapolis\ug 24 30 | 3 |
| Iowa-Sioux City Aug. 25-31 | |
| Montana—Butte | |
| Wisconsin- La Crosse | |
| Wisconsin-MilwaukeeAug 23-29 | |
| | |
| Smallpor Foreign. | |
| Arabia—Aden | |

| | | | | . Deaths. |
|--|---|---|--|--|
| Brazil-Rio de Janeiro Brazil-Santos. | July | 26-Aug 2 | . 519 | 231 |
| Brazil—Santos | July | 16-30 | | 1 |
| Brazil-Pernambuco Canada-Halifax Ceylon-Colombin China-Mnoy, Ecuador-Guayaquil Egypt-Cairo India-Bombay Jindia-Calcutta Indo-China-Cholen Indo-China-Sauen Italy-General Italy-General Italy-Messina Italy-Messina Italy-Messina Italy-Messina Italy-Nessina Italy-Nessina Italy-Nessina Italy-Nessina Italy-Nessina | July | 10-30 | | 29 |
| Canada—Hamax | Luly. | 18.25 | | , |
| China—Amov | luly | 15-21 | | Present. |
| Ecuador-Guavaquil | July | 25-Aug. 8 | | 8 |
| Egypt-Cairo | .lug. | 6-12 | . 2 | 1 |
| India-Bombay | July | 27-Aug. 4 | | 8 |
| India-Calcutta | July | 19-25 | | 5 |
| Indo-China—Cholen | July | 19-25 | . I | 1 |
| Indo-China—Saig in | July | 19.25 | - 2 | 1 |
| Italy—Genoa | Tuly | 10-10 | .115 | |
| Italy—Messina | Inly | 10-25 | | Present. |
| Italy—Naples | Aug. | 2-15 | . 0 | 2 |
| Italy—Naples. Java—Batavia. Mexico—Mexico City. | July | 19-25 | . 3 | |
| Mexico-Mexico City | July | 19-25 | | 23 |
| Norway-Christiania | Aug. | 9.15 | . 22 | |
| Phili pine Islands-Manila | July | 12-18 | . 15 | 5 |
| Portugal—Lisbon | Aug. | 9-15 | - 4 | |
| Russia-Riga | Aug. | 9-15 | . 2 | |
| Russia - Warsaw | Aug. | 9-15 | | 4 |
| Turkey in Vais Paralad | Lule. | 4-10 | . 241 | 1 |
| Mexico—Mexico—Mexico Ayrway—Christiania Philir pine Islandis—Manila Portugal—Lisbon Russia—Riga Russia Warsaw Spain—Barcelona. Turkey in Asia—Bagdad. | Truly | 19 25 | . 241 | 4 |
| Chalari | Fare | 21 (23) | | |
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| Present among Europeans, and | July | 27 epidemic am | ong r | iatives. |
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Army Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Army for the week ending September 12, 1908:

BARTLETT, C. J., Captain. Granted leave of absence to visit the United States, to take effect upon date of arrival in the United States of the transport Kilpatrick, and end-

ing September 15, 1908.

CRAIG, C. F., Captain. Detailed a member of a competitive examining board at Fort Leavenworth, Kan., vice Cap-

tain Bloombergh, hereby relieved.

DULIN, C. T., Medical Reserve Corps. Ordered to active duty in the service of the United States.

EBER, A. H., Medical Reserve Corps. Relieved from further duty in the Philippine Islands, and on expiration of his present leave of absence ordered to Fort De Soto, Fla.

Gosman, G. H. R., Captain. Relieved from duty at Fort Morgan, Ala., and ordered to Fort Barrancas, Fla., for station and duty.

HANSON, L. H., First Lieutenant. Ordered to Fort Sam Houston, Tex., for station and duty.

KEEFER, F. R., Major. Will proceed from the Presidio of Monterey to San Francisco, Cal., on or before September 10, 1908, reporting upon arrival to the adjutant general, Department of California, for assignment as acting chief surgeon of the Department during the absence of Colonel George H. Torney, chief surgeon.

YLE, F. T., Medical Reserve Corps. Ord duty in the service of the United States. Ordered to active

MILLER, A. L., Medical Reserve Corps. Granted twenty days' leave of absence.

PATTERSON, R. U., Captain. Granted leave of absence to visit the United States, to take effect upon date of arrival in the United States of the transport Kilpatrick, and ending October 15, 1908.

REASONER, M. A., First Lieutenant. Leave of absence ex-

tended four days

SHEPHERD, J. M., Medical Reserve Corps. Granted thirty days' leave of absence

The following medical officers have been ordered to Fort Myer, Va., September 16, 1908, for the purpose of undergoing the physical examination and testing their skill and endurance in horsemanship: Lieutenant Colonel Charles Richard, Major W. F. Carter, Major H. A. Shaw, Major F. A. Winter, and Major W. H. Wilson. Boards of officers of the Medical Corps, as hereinafter

constituted, are appointed to meet at the places designated for the purpose of conducting the examination of appli-cants for appointment as first lieutenant in the Medical

Cants for appointment as first fleutenant in the Medical Reserve Corps of the Army:

New York City: Lieutenant Colonel Charles Richard,
Major W. H. Wilson, and Captain E. P. Wolfe.

Washington, D. C.: Major W. D. McCaw, Captain J. B.

Huggins, and First Lieutenant J. R. Barber.

Columbus Descripto, Ohio: White H. G. Fisher, Captain

Columbus Barracks, Ohio: Major H. C. Fisher, Captain S. M. DeLoffre, and Captain L. J. Owen.

Jefferson Barracks, Mo.: Major A. E. Bradley and Cap-

Jefferson Barracks, Mo.: Major A. E. Bradley and Captain R. N. Winn.
Omaha, Neb.: Lieutenant Colonel Davis.
Fort Leavenworth, Kan.: Major E. L. Munson.
Fort McKinley, Me.: Captain C. W. Farr.
Key West Barracks, Fla.: Captain J. D. Heysinger.
New Orleans, La.: Major W. P. Chamberlain.
Fort Ontario, N. Y.: Captain G. P. Peed.
St. Paul, Minn.: Major F. P. Reynolds.
Fort Meade, S. Dak.: Major J. S. Kulp.
Fort Sill, Okla.: Major W. F. Lewis.
A. G. H. Presidio, San Francisco, Cal.: Major E. R.
Schreiner.

Schreiner.

Presidio, Monterey, Cal.: Major F. R. Keefer. Vancouver Barracks, Wash.: Major A. N. Stark. Ancon, Canal Zone, Panama: Major C. C. McCulloch, Jr.

Navy Intelligence:

Official list of changes in one stations and duties of officers of the Medical Corps of the United States Navy for the recek ending September 12, 1508

Boyn, J. C., Medical Director. Ordered to additional duty in command of the Naval Medical School Hospital.

Washington, D. C.

Dessez, P. T., Passed Assistant Surgeon. Detachéd from
the Chicago; unexpired portion of leave revoked; and
ordered to duty at the Naval Hospital, Las Animas,

HATHAWAY, G. S., Assistant Surgeon. Ordered to duty in connection with fitting out the Wyoming and to duty on board that vessel when commissioned.

on board that vessel when commissioned a Hennemerker, L. G., Medical Director. Commissioned a medical director, from September 2, 1908.

MINK, O. J., Passed Assistant Surgeon. Detached from the naval recruiting station, Chicago, Ill., and ordered to the Naval Medical School, Washington, D. C.

Percy, H. T., Medical Inspector. Commissioned a medical inspector, from September 2, 1908.

ROMAN, S. S., Passed Assistant Surgeon. Unexpired portion of leave revoked: ordered to the naval recruiting

tion of leave revoked; ordered to the naval recruiting Station, Chicago, III.
WHEELER, W. M., Surgeon. Ordered to the navy yard,
New York, September 12th.

Wise, J. C., Medical Director. Detached from command of the Naval Medical School Hospital, Washington, D. C., and ordered to duty as a member of the naval examining and naval medical examining boards, Washington, D. C. ington, D. C.

Births, Marriages, and Deaths.

Rorn

STRINE.—In Greensburg, Pennsylvania, on Sunday, August 30th, to Passed Assistant Surgeon Howard F. Strine, United States Navy, and Mrs. Strine, a son. WILLCOX.—In Camp Columbia, Cuba, on Wednesday, August 19th, to Major Charles Willcox, Medical Corps of

the United States Navy, and Mrs. Willcox, a daughter.

Married.

Coles—Lippincott.—In Bryn Mawr, Pennsylvania, on Monday, September 14th, Dr. Stricker Coles and Miss Bertha H. Lippincott, of Philadelphia.

CUMMINS—WIDDECOMBE.—In West Chester, Pennsylvania, on Wednesday, September oth, Dr. William Taylor Cummins, of Philadelphia, and Miss Josephine Widde-

JENKS-NORTH.—In New London, New Hampshire, on Friday, September 11th, Dr. Horace Howard Jenks, of Philadelphia, and Miss Eloise Comstock North.

JONES-McGINNIS.—In New York, on Monday, September 7th. Mr. Lloyd P. Jones and Dr. Mariette Grant

KAEMPFER-WALLACH.-In New York, on Monday, September 7th, Dr. Louis G. Kaempfer and Miss Adele N.

LEWIS-GABRIEL.—In New York, on Wednesday, September 9th, Dr. Warrington Griswold Lewis and Miss Alpha Ellen Gabriel,

MACFARLANE-BALLAGH .- In Tokio, Japan, on Saturday, September 12th, Dr. Andrew Macfarlane, of Albany, N. Y., and Miss Edna Ballagh.

Markley—Grimes.—In Philadelphia, on Saturday, September 5th, Dr. J. Preston Markley and Miss Ethel Grimes.

RENO—STEERE.—In Manila, Philippine Islands, on Friday. August 14th, Captain William W. Reno, Medical Corps of the United States Army, and Miss Ruth Steere.

SEIBERT—GRIMES.—In Philadelphia, on Saturday, September 5th, Mr. S. C. Seibert and Dr. Elizabeth Grimes.

TIGNOR—MARKHAM.—In Herkimer, New York, on Saturday, August 15th, Dr. Edwin Payne Tignor, United States Army, and Miss Gene Ethel Markham.

Armstrong.—In New Orleans, Louisiana, on Wednesday, September 2d. Dr. William Greer Armstrong, ageil thirty-nine years

BLANE.—In Cadiz, Kentucky, on Wednesday, August 19th, Dr. Henry Blane, aged seventy-two years.
BLISS.—In Burlington, Vermont, on Saturday, September 5th, Dr. William Y. Bliss, of Tully, New York, aged fiftysix years.

Brown.-In Bardstown, Kentucky, on Wednesday, Sep-Ember 2d, Dr. James Harvey Brown, aged eighty-six years.

CLARK.—In New Brunswick, New Jersey, on Sunday.

September 6th, Dr. Staats Van Deursen Clark, aged sixty

EMORY .--In Annapolis, Maryland, on Monday, August 31st, Dr. Thomas Emory, aged sixty-seven years. Frost.—In Lowell, Massachusetts, on Friday, September

4th, Dr. Charles C. Frost, aged ninety-one years.
HALE—In Albany, New York, on Tuesday, September
1st, Dr. Lorenzo Hale, aged sixty-four years.
HARRINGTON—In Lynton, England, on Friday, September

11th, Dr. Charles Harrington, of Boston, aged fifty-two

JOHNSON.—In Grand Rapids, Michigan, on Thursday, September 3d, Dr. George K. Johnson, aged eighty-six

SHACKELFORD.—In Cismont, Virginia, on Tuesday, Sep. tember 8th, Dr. Robert B. Shackelford, aged seventy-eight

Sheppard.—In Richmond, Virginia, on Thursday, September 3d, Dr. Nicholas C. Sheppard, aged seventy-seven

WINCHESTER.-In Tompkinsville, Kentucky, on Sunday, September 6th, Dr. B. Dorsey Winchester, aged twenty-

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WHOLE No. 1556.

Original Communications.

SOME CONSIDERATIONS OF EXOPHTHALMIC GOITRE FROM THE MEDICAL STANDPOINT.*

> BY ALFRED STENGEL, M. D., Philadelphia.

It is generally conceded that the essential pathology of exophthalmic goitre, or Graves's disease, consists in a hypertrophy or hyperplasia of the secretory cells of the thyreoid gland. If it were possible to have portions of the gland removed in every case it would be easier to reach reliable conclusions as to the pathology in all varieties of the disease than has thus far been possible. The present day views regarding the pathological anatomy of the disease are based upon studies of the glands obtained from cases of a more or less advanced character, with established and often long standing changes in the structure of the thyreoid gland. There is, however, a group of cases, by no means small in point of numbers, in which enlargement of the thyreoid gland or goitre may occur with symptoms of hyperthyreoidism more or less pronounced, and in which a spontaneous cure or recovery under treatment may occur in a relatively short time. When the symptoms are pronounced, one is not in much doubt regarding the justification of calling the condition Graves's disease, irrespective of the circumstances antedating the thyreoid enlargement and the symptoms of hyperthyreoidism. When, on the contrary, only moderate enlargement of the gland is observed and the evidences of hyperthyreoidism are ill developed, great difficulty is encountered in deciding upon a proper diagnosis. Temporary enlargements of the thyreoid gland are known to result from various trivial causes, such as menstruation, pregnancy, and emotional conditions. In these cases no symptoms of functional derangement or inactivity of the gland usually occur, and we cannot escape the conviction that the enlargement of the gland is simply congestive or due to some other unimportant and ephemeral swelling of the organ. There are other conditions in which a more persistent enlargement of the gland, still, however, as a rule without marked functional effects, is met with. Among these conditions anæmia, especially chlorosis; circulatory disorders; and nervous conditions or diseases are notable.

1. Anæmia, with thyreoid enlargement and symptoms of hyperthyreoidism. If one examines a series of cases of advanced chlorosis, enlargement of the

*Read at a meeting of the New York Academy of Medicine, April 16, 1998.

thyreoid gland will be encountered in a large proportion of them. There may be associated with this some tremor, palpitation, and rapidity of the heart's action, moisture of the skin, and fullness of the eyes. These symptoms individually or collectively may indicate nothing other than the results of the anæmia. In some cases, however, the symptoms enumerated are so marked that one cannot avoid the conclusion that they are the result of hyperthyreoidism. The difference between the former and latter groups is conceivably one of degree only. Chlorosis may in the former group occasion an enlargement of the thyreoid gland of an unimportant character and without such an overaction or perversion of function as to cause symptoms of hyperthyreoidism. In the second group, the process set up in the gland is of a more pronounced character, and hyperthyreoidism results. Whether we should call such cases Graves's disease or adopt a roundabout expression such as "enlargement of the thyreoid gland with hyperthy-reoidism" cannot be settled offhand. Something will be said upon this head after the other conditions, in which a similar state of affairs arises, have been mentioned.

2. Circulatory disorders. In mitral disease and in other forms of cardiac hyposystole with venous congestion, some enlargement of the thyreoid gland is not infrequent. As in the case of chlorosis, two groups may be distinguished; a larger, in which symptoms of hyperthyreoidism are not demonstrable, though cardiac irregularity and rapidity, tremors, sweating, and even fullness of the eyes may be present as a result of the circulating derangement; and a second small group in which pronounced symptoms

suggestive of hyperthyreoidism appear.

3. Nervous conditions and diseases. Emotional disturbances are known to cause some enlargement of the thyreoid gland in certain persons, and it is well known that the symptoms of sudden fear or fright as described by Darwin in many respects bear a resemblance to the symptoms of Graves's disease. Even exophthalmos is suggested in some of the illustrative pictures in the Expression of the Emotions in Man and Animals. Medical literature contains a number of instances of acute Graves's disease resulting from fright or emotional excitement and terminating in rapid death or, on the other hand, in a chronic form of the disease or in spontaneous recovery. These several terminations may be regarded as significant of different grades of severity of the disorder of the thyreoid gland and the whole organism or of different degrees of resistance. The mildest cases furnish little ground for a diagnosis of Graves' disease and their spontaneous cure or their rapid recovery under ordinary treatment is convincing of the nonexistence of any extensive organic lesion. Those who are disposed to deny the applicability of the theory of hyperthyreoidism to Graves's disease will find in these cases and in the review of the whole question of the effect of violent emotions in man not a little to support their beliefs. It would carry us too far into speculation to attempt to answer this argument; but it may be stated categorically that there are doubtless instances of enlargement of the thyreoid and symptoms suggestive of hyperthyreoidism following fright, etc., in which the whole syndrome is the result of nervous conditions per se, while there are other cases in which the suggestive symptoms are truly the result of hyperthyreoidism, occasioned by disorder of the thyreoid gland, due in turn to the nervous disturbances. In clinical experience difficulty may arise in reaching a conclusion as to the significance of thyreoid enlargement and the associated symptoms in organic as well as functional nervous states. I recall a recent case in my own experience in which there was associated with a condition of dementia præcox distinct thyreoid enlargement and some suggestive symptoms of Graves's disease. I also remember a case of ascending (Landry's) palsy, in which symptoms of Graves's disease (goître, protrusion of the eyes, tremors, tachycardia) preceded the final development of bulbar symptoms and death. In cases like these two it is difficult to escape the conviction that the thyreoidal phenomena were merely secondary, and not to be interpreted even as acute Graves's

What importance, it may be asked, attaches to the discussion of such cases of doubtful or larval exophthalmic goître, occurring in the conditions described? In answer to this question I wish to state that (1) it is well to recognize that larval cases, in which there is temporary and mild hyperthyreoidism, not infrequently present themselves; (2) in estimating the seriousness of the disease as a whole and its amenability to various forms of treatment. the occurrence of such cases and their usual mild character should be taken into account; (3) in attempting a classification that may be of use in directing proper treatment, these cases should be distinguished from what may be termed true Graves's disease, a condition in which fixed (not merely transient) lesions of the gland are the occasion of the hyperthyreoidism.

It is a notorious fact that much difference of opinion exists in the profession regarding the curability of Graves's disease. It seems to me that this is most probably due to the differences in the cases embraced under that term. Those who have included only cases with more or less durable disease of the thyreoid and with marked symptoms of hyperthyreoidism have naturally expressed more guarded views of the prognosis. Those, on the other hand, who have included all cases in the sense of what has previously been stated in the discussion, have reached a very different conclusion. Published statistics are of but little value, because the character of the cases included in the various series has d while started. As a matter of record, Dusch 115 ed the mertality at 12.5 per cent.; von Graefe at ten per cent.; Charcot at twenty-five per cent.; Ord and Mackenzie at about twenty-three per cent.; and in Buchan's statistics there are recorded only 105 deaths among 900 persons. It is, of course, admitted that many of the cases not recorded as fatal were only partially improved, and it might properly be asked if the eventual outcome was not really a false one. The same difficulty arises here as in the case of many other chronic diseases. A truer estimation of the seriousness of the disease is obtained by determining the frequency of recovery. Ord and Mackenzie state that "in about fifty per cent., more or less, complete recovery will eventually take place." Dana states a similar belief. Surely no such flattering figures could be quoted if only the type cases of Graves's disease, such as we see in hospital wards and demonstrate in our clinics, were included.

If, then, for purposes of proper classification, looking to the adoption of proper remedial measures, it is desirable to separate milder cases of hyperthyreoidism from Graves's disease proper, what are the data upon which reliance can be placed? In answer to this question I would propose (1) that the character of the thyreoid enlargement and the other clinical manifestations be considered, and (2) that the associated diseases, such as anæmia, circulatory disorders, and nervous conditions, and antecedent history be taken into account. (1) The gland in genuine Graves's disease is usually enlarged in such a manner that the fixed organic character of the condition is recognizable. It must not be forgotten, however, that in instances of purely acute thyreoiditis, hardness and more or less nodularity may suggest a chronic condition, while, on the other hand, cases of genuine chronic Graves's disease may present little thyreoid enlargement and no induration whatever. The history of the glandular enlargement is, of course, to be considered. If the symptoms associated with thyreoid enlargement of a trivial sort are equally trivial, further support will be lent to the assumption that the case is one of little gravity. (2) Enough has been said regarding the occurrence of doubtful, larvæ, or true Graves's disease in association with anæmia, circulatory troubles, and nervous conditions. If the association is remembered, mistaken forebodings will in many cases be avoided.

As to previous history, I wish to refer to the probability that many instances of Graves's disease possibly have their origin in the conditions alluded to, which had been allowed to remain uncorrected, and also to the probable origin of Graves's disease in various acute infections. I remember particularly a case of acute thyreoiditis, with decided evidences of hyperthyreoidism, which followed a streptococcic infection of the pharynx and larynx. The patient, a physician, recovered fully after rather prolonged rest, with applications of ice to the enlarged gland and other appropriate treatment. Other cases with a similar if less striking sequence might be alluded to. The importance of referring to such cases consists in the fact that the thyreoid condition and the resulting symptoms might readily be overlooked in the course of severe infections or in the convalescence from them. As a matter of fact, the thyreoid condition, in the

patient referred to, was overlooked in the begin-

It seems to me that the alert clinician may not rarely recognize thyreoid diseases in their incipiency, and by vigorous treatment obviate the more serious lesions that may subsequently prove the basis of a

genuine chronic Graves's disease.

Before closing, I wish to mention some of the symptoms less commonly discussed. First, the condition of the blood, and the question of the occurrence of lymphocytosis. My personal experience indicates that this is not a sign upon which reliance could be placed. Second, in some cases enlargement of the lymphatic glands in the neck is met with, but my experience would hardly justify me in placing any reliance upon this as a diagnostic point. This sign is too irregular in its appearance to be of any material aid in diagnosis. Third, enlargement of the thymus gland. This condition, though of regular occurrence, is so difficult to diagnose that it fails to give any practical information. Fourth, the general condition of muscular adynamia and gastrointestinal symptoms. These are more important than is generally held. In a discussion of Graves's disease, writers often speak only of the cardinal symptoms; but in the recognition of doubtful cases more importance should often be attached to muscular adanamia and to gastrointestinal conditions than to some of the so called cardinal symptoms. Palpitation of the heart, tremor, etc., occur so often in other conditions that their diagnostic value is not very great.

With regard to Graves's disease being secondary to other thyreoid disease, clinicians recognize this to be true. Such cases are of long duration before symptoms of hyperthyreoidism set in, and their

clinical manifestations are usually mild.

To summarize, the practitioner has to deal with

three important types of Graves's disease:

(1) Cases of moderate enlargement of the thyreoid gland, with mild symptoms of hyperthyreoidism, occurring in either constitutional, or circulatory, or nervous conditions, and which usually get well.

(2) Typical cases of hyperthyreoidism associated with fixed organic changes in the thyreoid gland. These are the cases of classical Graves's disease. These may or may not get well under medical or surgical treatment.

(3) Cases of long standing goitre or other thyreoidal disease, in which symptoms of Graves's disease supervene. Such cases belong to the domain

of surgery.

1811 SPRUCE STREET.

THE EARLY RELATIONSHIP OF THE OOSPERM TO THE ENDOMETRIUM.

By James Oliver, M. D., F. R. S. (Edin.), F. L. S., London, England,

Physician to the Hospital for Women

There is a general belief that when the fertilized ovum in the human female arrives in the uterus its detention therein is due either to the decidua growing up around and so enveloping it that it becomes lodged in an accessory ovigerous chamber constituted largely of the so called decidua reflexa or to the oosperm penetrating the endometrium and embedding itself to a greater or less extent in the uterine wall, the decidua thereafter closing rapidly over it in the form of a so called decidua capsularis. In either case, it is alleged, an adventitious chamber is formed, which serves to retain the oosperm in, but, nevertheless, excludes this body from the cavity of the uterus, and the mechanism whereby this is effected is in the two cases very dissimilar. In the former the entire chamber results from a localized overgrowth of the inner lining of the uterus and without the expenditure practically of any energy on the part of the oosperm, whereas in the latter the endometrium is attacked by the oosperm, which bores its way into the substance of the uterus, not through the agency of any vital pressure, but through the limited action of some solvent secreted by the oosperm itself; the breach thus created being rapidly repaired by a so called decidua capsularis.

The uterus is specifically endowed for the process of gestation, and under ordinary circumstances it responds so readily to the stimulus of an oosperm that without let or hindrance it offers a sufficiency of those materials which are requisite and necessary for embryonic development and growth; consequently we must banish from our minds the idea that the oosperm is at any time in any sense of the

word a parasite.

Too unhesitatingly, in my opinion, and on very slender testimony indeed, it has been admitted and proclaimed that the oosperm is detained in the cavity of the uterus in some sort of decidual envelope.

Let me here recall some facts concerning the subject of placentation in the lower animals, as we may thereby glean some very valuable information. In cetaceæ the germ mass from first to last is everywhere placental, so that during the whole period of gestation in this mammal the processes of metabolism in the embryo are carried on by diosmosis through the agency of the entire chorion, the mucous lining of the uterus in its whole extent being at the same time both a secreting and an absorbing structure. In this case the villous bodies of the whole chorion are to all intents and purposes similarly endowed, there is no functional distinction. In the horned ruminants we find a remarkable modification of this universal placenta; some villi atrophy but here and there over the entire surface of the chorion groups of villi hypertrophy and growing more and more form eventually many separate placentulæ. These patchy overgrowths in the chorion correspond with and are correlated nutritively to cotyledonary processes or caruncles which may be observed studding the interior of the uterine horns in these animals. In the cow these cotyledonous placentulæ are sometimes exceedingly numerous; in individual cases as many as eighty have been detected. Again, in the cat and carnivorous animals generally the placenta is more or less annular in shape, the villi participating in its formation being grouped together like a belt, whilst the villi over the rest of the chorion have practically vanished.

In all the lower mammals, not even excepting the monkey, the germ mass is detained in the uterus neither by a decidua reflexa nor yet by a decidua capsularis, but by osmotaxis and chemiotaxis, and under ordinary circumstances these same agencies in the human female cause not only a halt, but

arrest the progress of the oosperm immediately this body reaches the cavity of the uterus. The condition of affairs, which obtains in the lower mammals, does not encourage us to accept the tenet that the oosperm is ever lodged in an accessory chamber in the cavity of the uterus, and clinically we are justified in rejecting the dogma altogether. If we assume that encapsulation takes place through the oosperm secreting some substance which attacks and eats away a limited portion of the uterine wall it is, nevertheless, impossible for us to believe that in this procedure Nature would never err, and that we should never find some evidence of this solvent material exceeding its physiological function and causing a too extensive destruction of the uterine tissues. Errors of this kind are often observed. Take the dissolutionary changes which should restore the uterus to its normal state after parturition. These dissolutionary changes may transcend the usual amount and may leave the uterus in a state of superinvolution, the utility of the organ being for-ever thereafter annulled. Similarly in the oosperm itself, when about the fifth or sixth week of pregnancy, the utility of the villous bodies constituting nearly four fifths of the chorion is abolished, the atrophic process may invade the placental as well as the nonplacental area, causing a hyperatrophy of the villous bodies of the chorion, and no placenta

or a very inefficient one may thereby result. In the human female, after the fifth or sixth week of gestation, metabolism in the embryo is effected through the medium of a limited portion of the endometrial lining, the decidua placentalis; but prior to this, both before and after the whole villous surface of the chorion becomes vascular, the well being of the embryo is maintained by diosmosis through the entire periphery of the germ mass, and in this phenomenon the lining membrane of the whole cavity of the uterus participates. During the first five or six weeks of gestation, therefore, the human embryo is nourished in the same way as a cetacean fœtus during the whole period of pregnancy, and it is difficult to believe that in the former case Nature would furnish either a decidua capsularis or a decidua reflexa, and render nugatory thereby practically one half of the villous surface of the chorion. Moreover, in consequence of some breach in the continunity of the rapidly enlarging vessels in the decidua placentalis, hæmorrhage from the external genitals is often observed towards the sixth week of pregnancy, and in spite of a prolonged continuance of free hæmorrhage from this quarter the development and growth of the embryo may proceed uninterruptedly and the fœtus may be and very frequently is carried to maturity. however, a decidua capsularis or a decidua reflexa existed it is very evident that no blood emanating from the actively enlarging maternal vessels could escape externally without bursting the accessory ovigerous chamber, and this would either sweep the embryo away or speedily cause its death. Again, complete placenta prævia becomes an unthinkable condition if we believe that the germ mass in the uterus is ever harbored in a secondary chamber. Once more, it sometimes happens that the placenta is composed of two lobes, separated by a greater or less amount of nonplacental chorion, and one of ...

these lobes may be implanted on the anterior, whilst the other is implanted on the posterior wall of the uterus, the nonplacental part uniting them being located at the fundus. Under such circumstances it is inconceivable that a decidua reflexa, and still more a decidua capsularis, could ever have been evolved.

18 GORDON SQUARE.

INJECTION OF ALCOHOL FOR RELIEF OF TRI-GEMINAL NEURALGIA.*

BY JOHN A. BODINE, M. D.,
New York,
Professor of Surgery, New York Polyclinic,
AND FREDERICK C. KELLER, M. D.,
New York,
Lecturer on Surgery, New York Polyclinic.

The contents of this paper are based upon a clinical experience of fifteen cases of trigeminal neuralgia, in which deep injections of alcohol were given for the relief of pain. From partial to complete relief has been afforded in every case. The measure of the quantity of relief has, of course, been decided by the patient's statement, as, in fact, the diagnosis of the disease also. We have accepted as diagnostic of trifacial neuralgia the statement of any patient of more or less continuous pain within the area of distribution of any or all branches of the fifth cranial nerve. The time covered by this experience is only six months. The method used is that recommended by Lévy and Baudouin, the technique of which is simplicity itself. It consists of injecting two cubic centimetres of alcohol more or less diluted into or near one or all of the three divisions of this nerve at their basal foraminal exits in the skull.

Summary of our Experience.

CASE I.—First injection December 11, 1907. Absolute relief after one injection to the present time, with a short intervening period of return of neuralgia.

Case II.—First injection January 4, 1908. Partial relief after two injections to March 4th, when

patient was lost sight of.

CASE III.—First injection January 25, 1908. Absolute relief after six injections to present time (June 27th).

Case IV.—First injection January 25, 1908. Complete relief for one week after first injection.

Failed to return after second injection.

Case V.—First injection February 15, 1908. Very slight relief after six injections of second and third divisions. Marked relief after injection for ophthalmic division.

Case VI.—First injection February 28, 1908. Complete relief after one injection to present time.

Case VII.—First injection March 7, 1908. No

relief after one injection.

CASE VIII.—First injection March 21, 1908. Great relief after seven injections to June 13th, when last seen.

CASE IX.—First injection April 1, 1908. Com-

plete relief after one injection.

"Read but in the Section is Neuroleany of the New York Acidemy Western Meeting ages CASE X.—First injection April 6, 1908. Absolute relief after four injections to June 21st, when last seen

Case XI.—First injection April 7, 1908. Complete relief after three injections to April 30th, when last heard from.

CASE XII.—First injection April 8, 1908. Complete relief after one injection to April 17th, when last seen.

CASE XIII.—First injection June 17, 1908. Almost complete relief after one injection to June 24th, when last seen.

Case XIV.—First injection June 20, 1908. Complete relief after one injection to June 24th, when last seen.

CASE XV.—First injection June 27, 1908. Partial relief after one injection to July 1st, when last heard from.

Such limited experience as we have had, the paucity in number of cases and shortness of time since first injection, would imply presumption in this paper if it aspired to the dignity of a conclusion as to the value of the treatment under consideration. However, no such presumptive ambition is entertained by the writers, and the full scope and measure of this communication is to serve as a peg upon which to hang your discussion.

In accordance with this apologetic foreword, we shall eliminate the conventional historical and statistical introduction to the subject, though it is but right that credit and acknowledgment for instruction and valuable work in this line be given to Fothergill, Bartholow, Eulenberg, Jacoby, Wright, Bennett, and Murphy for their efforts to secure an injection of pain deadening or nerve destroying substances, and to bring relief to the agonized sufferer with tic doulowreux, the pain of which no other medical or surgical disease parallels. We owe great and specific credit to Schlösser, Ostwalt, Lévy, and Baudouin for the method under consideration.

This method consists, in brief, of the injection of alcohol, more or less diluted, into or near the nerves at the basal foraminal exits of the skull. We probably do not often succeed in actually inserting the tip of the needle into the nerve sheath, but by following the simple directions laid down by Lévy and Baudouin, the point of the needle rests within a very small fractional part of an inch of the nerve trunk at its exit. The alcoholic solution probably comes in contact with the nerve trunk by diffusion. There is at times a characteristic sudden, shooting pain within the area of distribution of the nerve trunk injected, and we have taken this to mean that the nerve itself has been touched by the point of the needle. Again, this characteristic manifestation is absent, and yet the injection has invariably, in every and all of our cases, given more or less relief for a longer or shorter period of time.

As the point selected to reach the nerve and the depth of penetration of the needle are calculated upon fixed bony points of the skull, the same inaccuracies are encountered as are so well known in craniocerebral topography. Not only differences actually exist in different heads, but the two sides of the same head may and do differ. It is not only possible, but probable, that further study along this line may develop greater accuracy in striking the nerve

trunk, and as a suggestion, a line of study based upon percentage measurements of different skulls made in the metric system, may determine this accuracy, just as Chipault's method of craniocerebral localization has done in brain surgery. We are satisfied of one thing, that the injection of these nerves is so simple and so safe as not to require the services of a specialist. In marking out our own line of work before our actual experience began, we studied the methods of Schlosser, as outlined by Kiliani, of Ostwalt, and of Lévy and Baudouin. We selected the method of Lévy and Baudouin because of its simplicity. The methods of all these gentlemen differ only in the point of entrance and direction of the needle in its search for the nerve trunk. We shall describe only the method of Lévy and Baudouin.

To reach the superior maxillary branch, a point is determined on the lower or inferior margin of the zygomatic process precisely vertically under the posterior border of the orbital process of the malar bone. One half centimetre posterior to this line, that is, towards the ear and at the lower edge of the zygomatic arch, the needle is inserted. Its general direction is upward, and it is pushed into the pterygomaxillary fossa to the depth of five centimetres. The needle is graduated in centimetre marks, so this depth of penetration is easily determined. At this depth two cubic centimetres of the alcoholic solution are injected. As a rule, if we did not obtain the characteristic symptoms of touching the nerve trunk, no further effort was made to find it at that sitting. We knew by study upon the cadaver that the point of the needle was in exceedingly close proximity to the nerve, so the injection was made. Once or twice we struck the coronoid process with the point of the needle at about half the required depth, but it was only necessary to carry the needle slightly forward to pass this obstruction. For injection of the inferior maxillary branch, the descending root of the zygomatic arch is identified and located by the finger in front of the ear. At a point two and a half centimetres anterior, precisely at the lower edge of the zygoma, the needle is inserted and carried to a depth of four centimetres, where the injection is made

For the ophthalmic or first division, the rule as laid down by Patrick and Hecht, of Chicago, is as follows: "The needle is passed along the outer wall of the orbit, at the level of the inferior extremity of the external angular process of the frontal bone. It passes beneath the lachrymal gland, safely away from the eye ball, hugging the orbital periosteum, and at a depth of three and one half to four centimetres, injection is begun. We have had one experience with injecting this branch. It offered to our minds theoretical possibilities of damage that have, so far, largely deterred us from its attempt. Fortunately for this method, the second and third divisions of the trigeminal nerve are the ones most frequently affected, though it may be proved later that injection of the first or ophthalmic division is without danger to the structural integrity

The solution used in all of our cases was two cubic centimetres (for each branch injected) of the following:

Cocaine hydrochloride, grain; Chloroform, 10 minims; 3 drachms: Distilled water,q. s. to make 1/2 ounce.

Nearly all injections have been made at the basal foramina, but few at the peripheral exits of the

One contemplating this deep injection would naturally be assailed with doubt in his mind as to the certainty of reaching the right spot, and while we believe this method to be within the skill of the average medical or surgical man, practice upon the cadaver is strongly to be recommended. All of the injections in our series of cases have been made by the junior author of this paper, and he has, by practice in the deadhouse; easily acquired the dexterity to touch the foraminal exits of the nerves in eight out of ten cadavers. This accomplishment is within the means of any one who can give a few nights' time for practice in the deadhouse. If any dangers attend the deep injection of the second and third branches, they are not known to practice, nor can they be conceived theoretically. The danger of hæmorrhage is reduced to a minimum by the blunt cutting point of the needle used. Beyond a more or less extensive subcutaneous ecchymosis, we have, so far, seen no evidence of excessive hæmorrhage. The danger of sepsis carried to the depth of needle penetration is an actual one. It was for this reason that we discarded the Ostwalt method of reaching the nerve, because the needle enters through the mucous membrane of the mouth.

Preliminary anæsthesia of the skin at the point of needle entrance with weak cocaine solution or plain water, then division of the skin by incision with the point of a bistoury, allows easy entrance of the needle point without danger of carrying the infection always resident in the depths of the skin. Our injections were made usually at the clinic. Sometimes when we did not get the characteristic expression of having touched the nerve, we have injected twice at the same visit. There was only once any shock or unpleasant symptom attending the procedure. As to the pain of the injection complained of by the patient, it varies considerably. Some complained bitterly, and some said that "it didn't hurt at all."

A skeleton outline of our case histories is as fol-

CASE I.—P. P. Seventy-three years of age. Laborer. Neuralgia began seventeen years ago. All teeth on his right side were sacrificed in effort at relief. Twelve years ago he was operated upon. Scars of the face indicate that the operation was one of division of nerve at infraorbital foramen and at angle of the lower jaw. Relief for two years. Recurrence of pain, and a second operation in 1898 by Dr. Abbe. The scar would indicate a trauszygomatic approach to the nerve trunks. Relief followed for ten years, and then recurrence of the neuralgia. December 11, years, and then recurrence of the neuralgia. December 11, 1007, injection into the second and third division by the method and solution detailed in this paper. Patient reported at clinic one week later free from pain, some swelling of the face persisting. Reported again, still free from pain, one month later. Was at that time able to eat and smoke without discomfort, a blessing denied him for the year previous. February 24th, some twinges of pain companied of in the texth and guns of the lower inv. February 24th, some twinges of pain companied of in the texth and guns of the lower inv. February 24th, some twinges of pain companied of in the texth and guns of the lower inv. February 24th. plained of in the teeth and gums of the lower jaw. February 26th, patient refused another injection because he did not think the pains sufficient to demand it. He is presented here to-night. March 14th, patient says he feels "fine." Looks cheerful. June 3d, relief continues.

CASE II.—L. S. Seventy-eight years of age. Carpenter.

Under medical care of Dr. Pritchard. Neuralgia of left side, confined to second and third divisions, one year's duration. Injection of both nerves January 4th. Considerable complaint of pain at time of introducing the solution. Two weeks later patient reported no improvement. A second injection was made, and on February 15th he reported considerably relieved, though not wholly free from pain. Can eat and talk now without exciting a paroxysm. Notable improvement in his looks and actions attested by his family. He seemed and expressed himself free from pain in face and jaw, but complained of a persistent pain in his tongue. On March 4th, the patient reports "in about the same condition," greatly relieved, but still not entirely comfortable. Refused another injection. June 22d, patient could not be

Case III.—A. W. Fifty-five years of age. Cook. Right sided neuralgia involving second and third branches. Began fourteen years ago. Case was quite typical. She could not chew at all, and her diet consisted for years of líquids. Said that almost every night she was awakened by an attack, and had to walk the floor, or sit up. During attack

there was lachrymation and drooling.

Had had two operations, the first six years ago, infra-orbital avulsion as indicated by the scar. Relief for six months. A second operation last April, infraorbital, but not followed by relief. During all these years she had been treated at different clinics by medication. For the last few weeks she had been under the care of Dr. Pritchard.

The patient had six attacks, quite severe, but of short aration, on her first visit to the hospital. Injection Janduration, on her first visit to the hospital. uary 25th, second and third division. Following this injection there was a complete and almost magical cessation of pain. She could sleep all night and chew solid food or pam. She could sleep all night and chew solid food without discomfort. February 19th, she reported her condition as perfectly comfortable, though an occasional little twitch of pain in the face. These twitches continued until March 7th, when she had rather a severe paroxysm. She was again injected. March 11th, supraorbital paroxysms, several severe attacks while awaiting injection. In addition to the usual deep injection, an injection was made into the supraorbital foramen. March 21st, entire freedom from pain since last injection. Patient very grateful and happy. March 29th, had no pain, but said she would feel safer if injections were repeated. April 5th, relief continued. Patient had gained ten pounds during past month. May 25th, slight attack of pain this morning. June 2d, sixth injection, patient having some pain when chewing. Last seen June 27th, when she left town. Complete relief. Still gaining weight. Eat and slept well. Cheerful and grateful. Case IV.—L. D. Twenty-nine years of age. Laborer. Referred by Dr. Steinach. First attack dated five years ago, and occurred now and then at intervals of several days or a week, on the right side. Within the last year the atto the usual deep injection, an injection was made into the

or a week, on the right side. Within the last year the attacks had increased in frequency, and are at present almost continuous. Had been through the usual gamut of medicinal treatment, electricity, x ray, etc. Injection, January 25th, second and third divisions. Reported one week later almost free from pain. Could shave, chew, and do other things without discomfort that before excited the attacks. February 26th, patient had recurrence of his old trouble in all of its atrociousness. Injection of the third division caused him great pain; patient refused to allow injection of the second division at this sitting, and did not return for

further treatment.

further treatment.

CASE V.—L. S. Twenty-nine years of age. Laborer.

Patient of Dr. Steinach's. Right sided neuralgia, confined to the temporal region. We could not elicit pain in any other distribution of the nerve. Attack excited by chewing. Pain constant, day and night, for over a year. Trouble of six years' standing. This pain seemed to be limited to an area of about one and one half inches from above the right eye to the hair line. Lachrymation on this side.

Injection February 15th, second and third divisions of the nerve. Patient experienced the characteristic pain that here-

nerve. Patient experienced the characteristic pain that heretofore had indicated to us striking the nerve trunk with the needle point. February 19th, patient reported that, while pain was temporarily relieved by the injection, it had returned. Another injection into the second and third divisions made. This, according to patient's statement, reduced the severity of the attacks, but had not abolished them. A third injection was given March 7th. March 10th, workled the Inselficient to deep injection into a principle into no relief. In addition to deep injection, an injection into or near the supraorbital nerve at the foramen or notch. This gave relief for two days. March 14th, pain as severe a continuous for second and for third division and

into supraorbital foramen. Relief for a few days. March 18th, injection for second and for third divisions. March 25th, fourth supraorbital injection followed by relief for only half an hour. March 28th, severe pain in temporal region and on top of head. First injection for the ophthalmic division through the orbit. The introduction of the needle caused severe pain, and the injection even more pain, in the eye and on the forehead above the eye. This pain subsided after a few minutes. Immediately after the injection analgesia in the area of the supraorbital distribution on right side. Upper eyelid slightly swollen immediately after injection, and patient was unable to raise it. Sight perfect. Fifteen minutes after injection patient left for home, completely relieved and cheerful. March 29th, patient reported that about two hours after the injection yesterday the temporal pain returned and was present all afternoon. He slept well during the night, and was free from pain when he awoke this morning. Marked cedema of upper lid and forehead. Patient failed to return, and it was learned on inquiry, April 24th, that he had removed from the address given.

CASE VI.—Mrs. M. Sixty-eight years of age.

wife. Typical neuralgia of the intense type for fourteen years. Had tried many methods of treatment, excepting operation. Her father was a sufferer for many years from trifacial neuralgia. Injection of second and third divisions February 28th at patient's home. No particular complaint of pain from the introduction of the needle. However, a very rapid and angry looking cedema followed within a few minutes after withdrawal of the instrument, and the ecchymosis during the next few days reached almost to the clavicle of that side. It was quite probable that we wounded a vein of some size. This patient was a dainty old lady of the lace and lavender type, and it was interesting to ques-tion her about the pain and discomfort of this method of treatment. She felt the characteristic twinges when the needle reached the nerve, and yet, on the whole, she considered the pain of the injection insignificant. Complete relief

has been attained so far.

CASE VII.—Widow. Sixty years of age. Duration of attacks only about six months, but had developed considerable severity and frequency, excited by opening mouth, chewing, or washing face on this side. Previous history nega-Previous history negative. Injection of second and third divisions. Characteristic twinges of pain indicated the accuracy of the needle point. Patient did not return after injection, and in June search was made for her. She had been married in mean-time, and was found at a new address. June 27th she re-ported at the clinic. Said she had not been relieved. Refused injection.

Case VIII.—F. P. Male. Forty-eight years of age. Janitor. Patient of Dr. Pritchard. Neuralgia four years. Constant pain in left half of tongue, mucous membrane of left cheek and gums. Many paroxysms every day. Three operations, all at the angle of the jaw, inferior dental nerve. Coughing, talking, or chewing excited a paroxysm. About one year ago, strychnine treatment relieved him of a tic which acompanied the neuralgia from the beginning. Had been advised to have ganglion removed, and was skeptical of any measure less radical.

March 21st, injection for the superior maxillary and for the inferior maxillary divisions. The injection caused referred pain to the area of distribution-alongside nose, over terred pain to the area of distribution—alongside loss, malar bone, in tongue, and in lower jaw—immediately followed by analgesia. March 25th, no paroxysms since injection, but still had a constant burning pain. Second injection for the second and third divisions caused characteristic pain in area of distribution, followed by analgesia.

March 28th a third injection was given for the second and third divisions, and on April 1st patient reported that, while there were no more paroxysms, he still had a constant pain fourth injection. April 4th patient reported much reliet and was pleased and encouraged. April 8th relief continned; fifth injection. April 18th, almost entirely free from pain. April 22d, a mild paroxysm to-day; sixth injection. The needle evidently touched the nerves, as the patient cried out that he felt pain in the upper teeth and gums when needle was shoved home for the second division, and in the lower lip and lower jaw for the third division. May 5th, some little pain when chewing. Food retained between left cheeks and gums (analgesia). June 3d, still slight pain when chewing; seventh injection, third division only. June 13th, slight pain in mucous membrane of left check; ulcer size of a dime where mucous membrane of cheek was in contact with a jagged molar tooth of lower jaw; referred

to dentist to have tooth extracted.

Case IX.—J. M. Male. Age fifty-two. Laborer. Patient of Dr. W. B. Thompson. Painful area on right side from upper lip to eye and to temple. Paroxysms every from upper lip to eye and to temple. Faroxysms every two minutes. Laughing, chewing, or touching side of face excited paroxysm. Neuralgia of four years' duration. Two years ago avulsion of infraorbital nerve gave patient relicf for one year. April 1st, injection for the superior maxillary and for the inferior maxillary divisions, without the usual pain referred to the area of distribution, but immediately followed by analgesia of the cheek and half of the tongue. April 4th, patient reported no pain whatever, with tongue. April 4th, patient reported no pain whatever, with the exception of two or three slight twinges in upper lip since injection. Laughing, chewing, or touching side of face no longer excited a paroxysm. Patient much pleased. Case X.—F. H. J. Male. Age seventy-seven. Patient of Dr. D. S. Dougherty. Patient had suffered the agonies

of a severe trifacial neuralgia for forty-seven years. He had consulted many physicians, visiting Europe twice in his search for relief, and had often contemplated suicide as a means of escape from his suffering. Constant pain in the superior and inferior maxillary areas, with severe parox-ysms every hour or oftener. Chewing, talking, or touching side of face excited a paroxysm. He dreaded washing his face or shaving, and had his food prepared so that it did not require chewing. Took a large dose of whiskey and one or two half grain tablets of morphine every night to procure sleep. Bowels constipated. Poor appetite. Frequently nauseated since he began to take morphine. Tongue coated and dry. Pulse 92 and irregular. Systolic murmur at apex, transmitted to left. Had typhoid at age of twenty, and making about this transmitted. and malaria about thirty years ago.

April 6th, first injection for the superior and for the in-ferior maxillary divisions. Washing side of face preparatory to making injection excited severe paroxysms. tion caused the usual pain referred to the area of distribution, but there was no subsequent analgesia. Patient said tion, but there was no subsequent analgesia. Fatient said the pain of the operation was insignificant. April 12th, partial relief. Had been able to sleep without taking morphine or whiskey. Still had some pain, and had several paroxysms. Second injection with characteristic referred pain, but no analgesia. April 19th, almost complete relief. Patient cheerful, and very much pleased. A few paroxysms since second injection. Combing or pulling mustache excited a paroxysm. Third injection. After this injection injection. cited a paroxysm. Third injection. After this injection pulling mustache failed to excite a paroxysm. Complete freedom from pain for five days, and then a few paroxysms excited by sneezing and blowing nose. May 3d, fourth deep injection and an injection into the infraorbital foramen. From May 3d to June 21st, when patient was last seen, absolute relief.

CASE XI.—J. R. M. Male. Age seventy-four. Referred by Dr. Van Valzah. Severe neuralgia for one month, area affected being the nasolabial fold on left side. Frequent paroxysms. Talking, chewing, or touching face excited a

April 7th, injection for second and for third divisions, April 7th, injection for second and for third divisions, with no referred pain in area of distribution and with no subsequent analgesia. April 10th, patient had no relief whatever. Second injection, the superior maxillary division only being injected. No referred pain. Needle reinserted and another injection given, which caused pain referred to the upper lip, with slight temporary analgesia following. April 12th, neuralgia persisted undiminished. Second injection for third division and third injection for second division with pain referred to cheek, lower jaw, and upper lip, followed by analgesia of cheek. April 13th, patient's daughter reported by releptione that her father had not been daughter reported by telephone that her father had not been relieved and did not wish any further treatment. April 30th, patient's son reported that his father had been com 30th, patient's son reported that his father had been completely relieved, the pain subsiding a day or two after last injection, and that the patient's daughter, who was a Christian Scientist, attributed the relief to Christian Science treatment, and had convinced her father that Christian Science cured him after surgery had failed.

Case XII.—E. J. B. Age thirty. Male. Bookkeeper. Referred by Dr. Freeman. For past year pain in right side

of face, especially alongside nose, with tic. Patient described the pain as constant "drawing," which varied in intensity. No paroxysms. He slept well, and was free from pain only when asleep. Had had a spur removed from right side of nose, medicinal treatment, electricity, and x ray, without relief. Gave history of syphilis. April 8th,

injection for second and for third divisions with pain referred to area of distribution, followed by analgesia of cheek and of half of tongue. Tic ceased immediately after injection. April 11th, no tic and no pain since injection. Right side of face swollen. Numbness in cheek, in teeth,

Right side of race swotten. Numbness in cheek, in teeth, and in half of tongue. Jaw felt stiff. April 17th, numb feeling side of nose. No pain and no tic.

CASE XIII.—G. D. Age twenty-five. Male. Law student. Referred by Dr. Garretson. For past two years had had a "burning, drawing" pain under left eye and extending to lip, with a tic. The pain varied as to intensity, usually began at noon and persisted the rest of the day, being absent in the forenoon. Neither washing the face nor the act of chewing excited pain, but powdering the affected part with talcum caused a "drawing" pain. Had been treated for some months with galvanism and strychnine without much relief. Appetite was good. Slept well. Never had malaria nor syphilis. Neurasthenic.

June 17th, injection for second and for third divisions, with pain referred to lower lip, lower jaw, and side of nose,

with pain referred to lower lip, lower jaw, and side of nose, but not followed by analgesia. June 20th, neither pain nor tic since injection. Left side of face slightly swollen. Jaws felt stiff. June 24th, no pain, but tic had returned. Case XIV.—F. S. Female. Age fifty-nine. Referred by Dr. William Steinach. Duration of neuralgia about eighteen months. Location of pain, left nasolabial fold, upper and lower lip, and both upper and lower gums on left side, and left half of tongue. Sharp, darting pain in cheek and in tongue. Several cheek. Burning pain in cheek and in tongue. Sever paroxysms a day. Sleep disturbed by pain and twitching.

June 20th, injection for superior maxillary and for inferior maxillary division, with pain referred to left half of nose,

maxillary division, with pain reterred to left half of nose, nasolabial fold, lower lip, and lower jaw, followed by slight analgesia. June 24th, complete relief.

CASE XV.—J. R. W. Age thirty-four. Male. Dentist. Referred by Dr. D. E. Hoag. Painful area about the size of a quarter in left temple for past six years. Patient described the pain as a "steady pull, as if nerve was caught in forceps." He was awakened by the pain soon after falling reference and was then unable to sleep until 2 or 4 o'clock in asleep, and was then unable to sleep until 3 or 4 o'clock in the morning. Very little pain during the day. No paroxysms. The pain was often accompanied by nausea, and belching afforded relief. No vomiting. Patient said that after taking a dose of medicine—any one of the many drugs or combinations he had tried-there was a peculiar sensation in the affected area, as if the medicine were at work on the nerve." There seemed to be a psychic element in this case (hysteria). It was certainly not typical, and may not be a case of trifacial neuralgia at all. June 27th, injection for third division, with no referred pain and no subsequent analgesia. Operation very painful. Of our fifteen patients, this was the only one in which the patient moved while the needle was being introduced or the injection given. Patient reported to Dr. Hoag July 1st that he suffered from "shock" for two days after the injection, and that, with the exception of one night, he had had relief

It would seem from a study of the cases reported by the originators of this method abroad, with those reported in this country by Kiliani, Patrick and Hecht, that the deep injection of alcohol for relief of the atrocious pains of trifacial neuralgia is a method to be considered advisable when internal medication has failed, and by all means, it should precede the consideration of surgical attack.

CANCER OF THE RECTUM.

1 , tid. g One Hundred Consecutive Operations for Male near Greath of the Rectum and Seemend

By JAMES P. TUTTLE, M. D.,

CASE LXXIV .- May 18, 1905. Mr. J. M., age thirty-

eight of personal latters, else to the personal latters of a mall sore about the end of the main sort of a main sore about the end of the end o : In Pen that In Some of Book An immense

perineal cancer extending one and one half inches up into the rectum and two and one half inches on either side of the anus

May 22d. Excision, taking away all of the sphincter and making a sacral anus through fibres of glutæus maximus. Removed seven inches

June 15th. Parts healing by granulation; some continence, but not satisfactory.

Patient moved and was lost sight of, but I have no doubt

recurrence took place early. CASE LXXV.-May 28, 1905. Mrs. N. R., age twenty-

eight. Family history, negative.

Always healthy until seven years ago, when she was constipated one night, and when she awoke the next morning there was a little pimple on the left side of the rectum; this was extremely painful until two years ago, when the pain ceased. Had an operation seven years ago, when the pimple was first noticed, and another one four years ago; wound closed up after the last operation in about two weeks, and then the patient broke out with pimples all around the anus; these have been scraped time and again. Complained now of great pain in the left side of the anus. Surrounding the anus was a circle about six inches in diameter; there was a bright red, granular ulcer upon an indurated base; this did not seem to involve the deeper The left labia was as large as a goose egg; right tissue. labia slightly swollen; large ulceration in the left groin. Pathological report, squamous epithelioma.

June 1st. Instituted treatment by Professor Robinson's

arsenic method. Professor Robinson carried out same. August 1st. Epithelioma entirely gone, and parts healed The patient, however, was attacked with an acute

August 24th. Patient died of tuberculosis. No recurrence of epithelioma.

CASE LXXVI.-June 21, 1905. Mrs. M. L., age fifty-five. Family history, negative.

Healthy until about a year ago, when she began to have pain in the rectum, which pain had never been severe until about a month ago; patient had never been constipated; had a fluid discharge from the rectum; frequent desire to go to stool; had protrusion from the anus at stool. Appetite good, but is losing weight; had lost no blood. Anus surrounded by hæmorrhoids. From the margin of the anus, extending up five and one half inches, was a large, friable, nodular, carcinomatous mass, constricting the rectum, but leaving easy passage for the index finger. Pathological report, adenocarcinoma

July 28th. Operation. Permanent colostomy, July 28th. Operation. Fermanent colostomy, after author's method; found some glands in the sacral cavity, but none above the promontory of the sacrum. Tumor removed from below; perineal method; drainage and pack-ing introduced. Further history of this case was not kept, but she left the hospital on August 1st, practically well,

and has never been heard from.

CASE LXXVII.—October 23, 1905. Mr. A. S. D., age seventy

Family history, negative

Patient was an old soldier; had typhoid, syphilis, and dysentery, all over thirty years ago. For twenty-five years had enjoyed perfect health. Bowels had been free rather than constipated. Six weeks since had an attack of obstruction, with great griping pain. Finally relieved, and since then had been passing blood and mucus at stool. Armoved three or four times a day. Anus normal. Rectum normal for three inches, at which point was felt a large lobular tumor, completely surrounding the gut and almost obliterating its calibre; slightly movable and hard.

October 28th. After several consultations, it was decided to scrape out and cauterize this growth, instead of doing radical operation. This was done; the growth was more movable under an anæsthetic than was expected; could have been removed with comparatively little shock, except for the question of anæsthetic, which the patient took badly. Tumor was scraped out thoroughly and cauterized by Burns electrocautery. Pathological report of specimen,

spindle celled sarcoma.

November 1st. Patient had considerable trouble making urine, on account of enlarged prostate; but no complica-tions of the rectum beyond free discharge; left hospital in three weeks

January 2, 1906. Barring slight cystitis, patient felt fairly

well, but tumor was rapidly recurring, notwithstanding

recauterization.

April 15th. Peritoneal and thoracic metastasis. April 15th. Peritoneal and thoracic metastasis. May, 1906. Died, apparently from cardiac involvement.

CASE LXXVIII.—Nocember 15, 1905. Mrs. A. D., age sixty-five.

Family history: One sister died of cancer of the stomach;

father died of tumor of some kind.

Patient was perfectly well until three and one half years ago, when she was operated upon for hæmorrhoids; since then had been losing blood, and rectal condition was worse; not much pain until a year ago, when she began having pain when bowels moved; this had continued daily. Was never constipated; now has frequent call to stool, with urgent morning stool. Anus normal. In the rectum, two and one half inches above the anus, was a cauliflowerlike growth, friable, and situated on an indurated base; it surrounded the rectum and extended four and one half inches up; movable; considerable glandular involvement in the sacral cavity.

November 17th. Operation. Perineal method; very lit-tle hæmorrhage; the gut was brought down and all the glands in the sacral cavity were removed; could feel none

in the mesentery higher up.

November 20th. Patient doing well; bowels moved

November 24th. Patient troubled with nausea, coming

on suddenly; much pain in the stomach; no temperature. November 26th. Severe pain in stomach, vomiting large quantities of blood. Collapsed and died: Two hours later, post mortem examination showed myriads of small, round ulters in the stomach one of which had involved a large. ulcers in the stomach, one of which had involved a large blood vessel, causing the hæmorrhage. There was no perforation. The pancreas was the seat of a carcinomatous growth, the size of an English walnut, with large glands running up into the gallbladder.

CASE LXXIX.-March 30, 1905. Mrs. W. H. S., age

Family history, clear.

ramily instory, clear.

Twelve years ago, after a milk diet, patient noticed mucus in stool; the doctor found a growth in the rectum and tried to ligate it off; failed; it was then crushed off and cauterized from time to time. When the patient got up in the morning she passed four or six ounces of thin, watery solution, and frequently during the day. A spongy mass protruded when the bowels moved, reduced spongly. Slight pain when the tumor was caught by the taneously. Slight pain when the tumor was caught by the sphincter. Anus normal. Just inside the sphincter was a growth the size of a quarter, and four and one half inches up half a dozen or more similar growths springing from a broad base; soft and did not bleed much; the sigmoid was normal above these growths. Pathologist's report, adenocarcinoma April 3d. Operated. Extirpation of the affected area, by

continuous suture through cufflike mass pulled down to antis; tumor cut off below suture. Apparently, anterior suture went into the peritonæum in Douglas's cul de sac. April 8th. Pelvic abscess formed above the line of anterior suture; an attempt to drain through the posterior

vaginal route resulted in a rectovaginal fistula.

Patient left the hospital; convalescence un-June 1st.

eventful; soft valvular stricture.

April 3, 1906. Two or three small papillæ recurred, one on the surface of the valvular stricture, one just above the margin of the anus. Removed by specimen forceps and cauterized.

December 1, 1906. Stricture becoming more resilient; no

recurrence

October 18, 1907. Absolutely no recurrence. Patient in better health than for years. Stricture narrow, though a May, 1908. Still well. Stricture causes no inconvenience

CASE LXXX.-May 5, 1905. Mrs. C. V. S., age forty-

Family history: Sister died of tuberculosis; father of tumor of the stomach, and aunt of cancer of the breast.

Patient had an operation performed, complete hysterec tomy, four and one half years ago; after that felt pretty well until about fourteen months ago, when she began to suffer from gastrointestinal disturbances; this improved under treatment. Now suffered from soreness and a constant desire to go to stool; discharge of mucus; and attacks of griping pain following a discharge of clear mucus.

Bowels irregular. Anus normal. Rectum normal up to one inch, where a small, hard tumor is felt, confined to the left posterior quadrant. Pathological report, adenocarcinoma.

May 12th. After one week's preparation, salts, liquid diet, beta naphthol, and peroxide irrigations, removed the growth by perineal excision. Removed two and one half inches. Complete suture, no drainage.

May 20th. Union, except on anterior quadrant. Infection shallow, very little pus.

May 24th. Granulation well established.

June 1st. Patient well.

December, 1907. Have not seen her, but heard that she is still well.

CASE LXXXI.-October 28, 1905. Mrs. I. R., age sixty-

Had an operation for uterine fibroid fifteen years ago four years later had a second operation for the removal of About six months ago began to notice a discharge of blood and mucus from bowels. Constipated for charge of blood and mucus from lowers. Consupered myears, slight indigestion. Now has alternating diarrhea and constipation. Anus normal. A hard, nodular tumor, one and one half inches on the posterior wall of the rectum extending three and one half inches.

November 10th. Perineal excision. Gut brought down

and sutured to anus, posterior drainage.

November 20th. No complications, slight incontinence; drainage wound almost healed

November 20, 1907. Still well.

CASE LXXXII.—November 2, 1906. Mr. W. F., age sixty-two.

Family history, tuberculous. For three months patient noticed a difficulty in obtaining a movement of the bowel, unsatisfied feeling; constipation; aching pain just inside the rectum. No discharge. Anus normal. Rectum normal for two and one half inches up, where it was surrounded by a nodular tumor, chiefly on the left anterior wall; movable; upper limits five and one half inches.

November 12th. Amputation, Kocher's method. Very difficult to surround rectum; urethra wounded; tumor extended up six and one half inches. Superior hæmorrhoidal artery ruptured by assistant pulling too hard on gut, very little hæmorrhage. Periteonæum closed by sutures; could not get a good circulation in the gut; sewed it to the skin in sacral wound; perineal drainage and catheter in the bladder.

November 16th Patient did very well for four days, then suppression of the urine developed, and patient died on the fifth day. No autopsy, but septic infection was probably the cause of death.

CASE LXXXIII.—October 10, 1908. Mr. C. G., age thirty-eight.

Family history, negative.

Operated upon for cancer of the rectum two years ago.

Now has pain about the sacrum and pain after the bowels move, more uncomfortable when the bowels are consti-pated. Appetite poor. Discharge of mucus. A large, irregular sacral anus with recurrence in margin. Gut above normal. Posterior rectal glands enlarged.

October 15th. Found recurrence in stump of sacrum, with suppurating cavity on posterior surface of bone;

removed.

October 25th. Parts healing well; patient left the hospital feeling very well.

November 1st. Returned with feeling of bearing down,

and prolapse of the bowel.

November 2d. Loosened up rectum and narrowed anus, suturing the gut walls together and then the skin and buttock over this. Enucleated one small carcinomatous nodulæ.

December I. All healed; continence fairly good. Have not seen patient, but am told he is still well.

CASE LXXXIV.-October 10, 1906. Mr. M. L., age

sixty-four Patient looked pale, haggard, below weight.

bloody stools for many years, but only during the past two years noticed bloody mucus stools; loss of blood and slime; frequent urination, especially at night; after a dis-charge of mucus he felt much better. Flatulence and loss of appetite. Constipated. Dull, aching pain in back. Anus aormal. Four and one half inches up the rectum was a papilloma of the size of a pecan; six and one half inches up was an angulation that the tube would not pass.

October 11th. Removed the papilloma by a snare and cautery. Pathological report, benign papilloma.

December 1st. Symptoms generally improved, but obsti-

pation and discharge of mucus continued, notwithstanding the site of old operation had healed. Examination under anæsthetic, Simon method, discovered carcinoma of the sigmoid, seven and one half to eight inches.

December 4th. Operated with intent to do colostomy. On opening bowel found colon and sigmoid collapsed, small intestine distended by gas; spontaneous lateral anastomosis May, 1507. Patient up and about for four months. He even gained weight, but died from cancer of the liver five

months after operation.

CASE LXXXV.—December 3, 1906. Mr. C. J., age fifty-

Family history, clear.

Alcoholic. Chronic indigestion. Operated for hæmorrhoids in 1900, and had a severe hæmorrhage; had had distress in the rectum ever since. Two operations in the meantime, one three weeks ago; what those were he did not know (patient sent to me as a hopeless case). Grad-ually increasing constipation; frequent call to stool, when

| Number: | | Period of symptoms existing before operation: | Pathological cor difficm: | Location of disease: | Extent of isease: | Organs involved: | Operation performed: | eatment intestival ids: | Immediate result of operation: |
|---------|-----|---|-----------------------------------|--|--|---|--|--|--------------------------------------|
| Numl | Sex | Peri sym exis befo oper | Path cor c | Loca | Exte | Organización | Oper | Tree of it | Jmm resu oper |
| 74 31 | М. | eighteen months | Recurrent adeno- carcinoma | at anus | six inches | anus and rec- tum | perineal excision | sacral anus, twist- ed gut, Gersuny method | recovery |
| 7528 | F. | anal disease for seven years | Suram ats | around anus | one inch into rec- | anus and rec- | arsenical paste | none | recovery |
| 7655 | F. | one year | Adenocarem ma | just above anal margin | five and one half inches | rectum | permanent colos- tomy, perineal ex- | | recovery |
| 7770 | M. | six weeks | Lympho sarcoma | three inches above anus | two and one half | rectum | curettage, electro- cautery | • | recovery |
| 7865 | F. | three and one half years | Adenocarcinoma | two and one half inches above anus | four and one half inches | rectum | perineal excision | gut sutured in | death |
| 7950 | F. | papillomas twelve years | Adenocarcinoma | one half inch above anus | four inches | rectum | intrarectal resec- | end to end suture | recovery, stricture |
| 3046 | F. | one year | Adenocarcinoma | one inch above | one and one half | rectum | perineal excision | gut sutured in anus | recovery |
| 8161 | F. | six months | Adenocarcinoma | three and one half inches above anus | circular, one by one and one half inches | rectum, poster- ior wall | perineal excision | gut sutured in anus | recovery |
| 8262 | M. | three months | Adenocarcinoma | two and one half inches above anus | three inches, en- tire circumference | rectum | Kocher's method | gut sutured in anus | death |
| 8338 | М. | two years | Recurrent adeno- | in sacral anus | two inches | sigmoid | excision | sacral anus | recovery |
| 8464 | М. | two years | Adenocarcinoma and papillomata | seven and one half inches above anus | five inches | rectum, sig- moid, ileum, and liver | combined opera- tion, colostomy | inguinal anus | recovery |
| 8551 | М. | hæmorrhoids six years ago, operation | Adenocarcinoma | one and one half inches above anus | three and one half incles | rectum | perineal excision | gut sutured in anus | recovery |
| 8640 | М. | | Adenocarcinoma | two and one half inches above anus | six and one half inches | rectum and sigmoid | combined method | artificial anus | death |
| 87 7 | M. | six months | Adenocarcinoma | seven inches | three and one halt | sigmoid | colorectostomy | | recovery |
| 88; | М. | two years | Adenocarcinoma | four and one half inches above anus | one and one half inches | rectum | Kraske's local ex- | sewed edges to- gether | recovery |
| 89 | M. | dysentery, for three years | Incipient carci- | just above anal margin | three and one half | rectum | perineal excision | gut sutured in | recovery |
| ym50 | М. | polyp removed, three years ago | Adenocarcinoma | just above anal margin | one inch, glands four inches | rectum | perineal excision | gut sutured in anus | recovery |
| 9145 | М. | three weeks | Adenocarcinoma | just above anal margin | one half inch | rectum | perineal excision | gut sutured in | recovery |
| 92. 11 | М. | eighteen months | Adenocarcinoma | in anus and in buttock | six inches | | perineal excision and cauterization | artificial anus | recovery |
| 91 - | M. | two months | Squamous crithelioma | just above | one half inch | anal canal | perineal excision | gut sutured in anus | recovery |
| 9:38 | F. | four months | Adenocarcinoma | three and one half inches above anus | four inches | rectum and sigmoid | perineovaginal ex- cision | gut sutured in anus | recovery |
| .\$68 | M, | five months | Adenocarcinoma | three and one half mehes above anus | two and one half inches | rectum | boneflap amputa- tion | gut sutured in anus | recovery, fistula |
| 96. 17 | M. | in year | Adenocarcinoma | three inches | four inches | rectum | perineal excision | gut sutured in | recovery |
| 1 52 | F. | two months | Adenocarcinoma | three inches | two inches | rectum | perineal excision | gut sutured in | recovery |
| 9861 | | 1 100 cm | Ader carefrons | six and one half inches above anus | three and one half inches | rectum and | combined opera- | end to end, Maunsell | fistula and stricture |
| 142 | F. | 1 | Steel Contract | two inches | one and one half | rectum | perineal excision | gut sutured in | recovery |
| 197 | М. | eight months | Adenocarcinoma | nine inches above anus | five inches | sigmoid | abdominal | artificial anus | death |
| | | | | | | | | | |

between the ileum and sigmoid at site of tumor; ileum inbetween the fleum and sigmoid at site of tumor; fleum involved in the growth for the length of four inches; liver involved. Resected ileum, end to end anastomosis, Murphy button; did colostomy (Wier); loosened section of ileum and sigmoid involved, and passed them down into the pelvis; closed the peritoneal floor and the abdominal wound, and took out the growth through perineal method; time two and one querter beauty.

time, two and one quarter hours.

December 30th. Patient stood the operation well; recovered the button on the fifteenth day. Artificial anus

nothing was passed but blood and mucus. Constant heavy, aching pain in the back and rectum, worse at night. Discharge of bloody slime. Anus normal. Slightly nodular, friable growth in the rectum, began one and one half inches above the anus, extended three inches; was movable and admitted the finger easily; bled on touch.

Patient prepared for an operation, purgatives, liquid

diet, beta naphthol.

December 10th. Extirpation, perineal method. Tied off middle hamorrhoidal arteries: excised part of prostate; removed six and one half inches and brought the gut

down; sutured musculature to gut and mucous membrane to skin. Posterior anal drainage; obliterated posterior dead space by perisacral sutures.

dead space by persacral stitutes.

December 12th. Practically no oozing or other complications. Temperature, 99° F.; pulse, 85; felt well.

December 30th. Left hospital entirely healed and per-

fectly well. April, 1908. No recurrence; feels well; has gained thirty

pounds. CASE LXXXVI.—December 22, 1906. Mr. W. E., age

Family history, negative.

the sigmoid and made artificial anus; closed peritoneal floor; cut off gut by electroangiotribe; tied superior hæmorrhoidal arteries; removed tumor by perineal method; very little hæmorrhage. Patient returned to ward, pulse, 104, soft, and regular.

December 29th. Suppression of urine developed, and patient died to-day; autopsy not permitted.

CASE LXXXVII.—November 7, 1905. Mr. G. H. E., age

fifty-seven. Always had trouble with his stomach; very nervous; had an operation for hæmorrhoids five months ago. For the past six months had had a constant desire to go to stool

| Cause of death: | Functional result: | Period of recurrence | Site of recurrence: | Result of recurrence: | Length of life following operation: | State of Pestitis of Ollowing operation: |
|--|-------------------------|-------------------------|---------------------|-----------------------|--|---|
| | incontinence | ? | | | two months | was free from pain when he left hospital and disappeared. |
| | fair | | | | three months | death from acute military tuberculosis. |
| | | ? | | | two months | patient went back to Ireland and was never heard from. |
| | good | | | | eight months | only temporary relief. |
| cancer pancreas, multiple ulcers in | | | | | | excellent. |
| stomach | perfect | none | | | thirty nine months | excellent, still living in perfect health. |
| | perfect | none . | | | three years | excellent. |
| | slight incontinence | попе | | | eighteen months | quite good. |
| sepsis and suppres- sion of urine | | | | | | |
| | partial | ? | | | one year | not heard from since. |
| | partial incontinence | r ne in gut | | | five months | no pain; up and about for three months. |
| | good | ns ne | | | eighteen months | excellent, still living. |
| third day from acute nephritis | | | | | | |
| | good | not removed | | | six months | bowels moved regularly and comfortably till death. |
| | good | one year | in situ | death | fifteen months | good for one year. |
| | good | none | | | two years | excellent, still living. |
| | good | none | | | twenty months | excellent, still living. |
| | good | none | | | twenty three | excellent, still living. |
| | incontinence | incomplete removal | | | months nine months | great comfort from operation. |
| | good | none | | | seventeen months | excellent, still well. |
| | partial incontinence | four months | in situ | | seven months | still living. |
| | partial incontinence | none | | | five months | never regained strength, had Bright's disease. |
| | perfect | none | | | five months | still living, health excellent. |
| | fect | none | | | three months | excellent |
| | incontinence | none | | | three and one half | excellent. |
| | gond | none | | | three years t | vellert. |
| cardiac embularm | | | | | | |

Personal history, clear up to eighteen months ago, when he had periodic bleeding from the rectum; this became more and more frequent until in the last three months it had been almost constant. Discharge of mucus and blood in the been almost constant. Discharge of nucus and blood in the morning stool; bowels moved frequently. Great loss of weight. Smarting, aching pain almost constantly. Anus normal. Two and one half inches up the rectum was a large, craterlike carcinoma, covering the entire circumference; movable, but upper limits could not be felt by finger; no glands enlarged.

December 27th. Operation. Combined method. Cut off

without being satisfied, a feeling as if there was something more to come away; soreness over the transverse colon and sigmoid; urgent morning stool; bowels constipated; slight discharge of blood and mucus at stool, also protrusion of mucous membrane. Prolapse of mucous membrane on the right side of rectum; small tumor constricting the rectum, seven inches up, seen through protoscope. Diag-nosis scouted by patient and his physician. Returned home.

January 15, 1906. Has had examination under ether and section removed. Tumor proved to be adenocarcinoma; glands involved; tumor on the right border of liver.

Bowels grow more difficult to move. Lump at the right corner of the liver felt like apex of kidney, movable, but attached.

January 22d. Laparotomy. Lump found to be pedunculated tumor of the liver, with marked carcinomatous in-volvement of the organ on its lower border. Fæcal current

side tracked by colorectostomy; drainage. Barring drainage tract, convalescence was January 31st.

uninterrupted; bowels moved the third day, and daily since. The fistulous tract healed, and patient was comfortable for five months, when he died quite suddenly. No autopsy was permitted.

CASE LXXXVIII.—December 22, 1906. Mr. D. H., age fifty-five.

Family and personal history negative.

For two years patient had noticed a discharge of mucus before stool. Bowels were regular, rather soft; no pain; discharge of mucus and blood after stool. Anus normal. Small internal hæmorrhoids in rectum. Four and one half inches up in the left anterior quadrant was a shaggy tumor, nodular, and attached by pedicle over area of one inch.

January 5, 1907. Operated. Kraske's method. Excised portion of gut bearing pedicle, and sewed walls of the gut together; left posterior wound open for drainage. Patho-

logical report, adenocarcinoma.

October, 1907. His physician tells me there is evidence

of recurrence

CASE LXXXIX.-April 25, 1906. Mr. S. J. B., age fifty-

Family history clear, except for tuberculosis in uncle. History of spinal meningitis in 1894, complete recovery. Had dysentery three years ago, continued with intermissions, ten to fifteen stools a day; unsatisfactory defæca-tion; required morphine or other sedatives; burning pain at anus before stool; constant mucopurulent, bloody dis-charge. Ulcerations for three inches up the rectum, in-durated in spots and elevated. Specimen showed beginning malignancy

Operated. Perineal route. Removed three April 28th. and one half inches; sutured musculature to gut and mucous membrane to skin; no glandular involvement

May 3d. Only part of the sutures held, but the drainage of the infected area was good, and the deep spaces did not seem to be infected.

May 15th. Patient felt quite well; small fistulous tract

May 15th. Fatient left quite went, small states still remained. Patient went home.

April 2, 1908. Still well by report.

CASE X.C.—September 20, 1906. Mr. J. C. J., age fifty. Three years ago patient had polypus of rectum removed, no inconvenience; four weeks ago had a second one removed; had secondary hæmorrhage that night, and another one week later from straining. Bowels regular; no pain. External thrombotic hæmorrhoids about anus. Indurated movable mass in the rectum, with granulating top, just to the left of anterior commissure, inside the sphincter; one enlarged gland four inches up.
September 26th. Operated. Perineal method. Five and

one half inches amputated; sacral glands removed; part of the external sphincter removed. Musculature sutured to the gut; sacral dead space closed by perisacral sutures

October 15th. Convalescence uneventful; small infection in outer wound; sacral space perfectly obliterated.

December 1st. Patient left for home, well but not strong.

February I, 1908. No recurrence. Patient well, but had not regained normal strength.

June 1st. Has improved much recently and is now perfectly well.

CASE XCI.-May 31, 1906. Mr. F. M., age forty-five.

Family history, clear.

Had hæmorrhoids injected in 1885 and twice since, the last time eighteen months ago. For three weeks had had throbling and burning at the anus, commenced after stool, and lasted usually from four to six hours; to-day had lasted all day; shooting pain into the testicle and penis. Slight bloody discharge; constant protrusion. Three small protruding hæmorrhoids; on the summit of one a hard, node at ma, the tree of a plit pea was seen. Sigmoid normal

May 31st. Removed protruding painful mass, under

Pathological report, adenocarcinoma cocaine.

June 19th. After proper preparation, amputated the left from previous operation.

August 10th. Patient had infection and several large abscesses, but finally recovered.

January, 1908. Remains perfectly well. CASE XCII.—April 4, 1906.—J. B. S., age forty-one.

A year ago patient was operated upon for ulcer of the rectum, which healed, and then broke down again and never healed. Had artificial anus done in January, and an operation for hernia two weeks later. Could not sit for pain. Large carcinoma involving the deep tissues of the rectum and extending out into the right ischiorectal fossa

over tuberosity; no glands involved.

April 6th. Scraped and cauterized growth.

June 1st. Some relief. Removed large growth from buttock, which interfered with sitting.

July 1st. Great relief from last operation. Cauterized growth again.

January 28, 1907. Had repeated the cauterization three times in the past year. Patient had improved in health, but tumor continued to recur.

Have not heard from him since.

CASE XCIII.—January 6, 1907. Mr. C. T., age twenty. Family history was negative.

Patient had had ear trouble since typhoid fever at nine years of age. Pain and bleeding at stool for the past two months; frequent desire to go to stool, but unsatisfactory. Never constipated. Protrusion and discharge of blood at stool, pain after stool Just in the anal canal was a small, wartlike growth, at the anterior commissure, hard, rough,

but not indurated at base; bled on touch. January 10th. Growth dissected out and base cauterized. Hæmorrhoids taken off with a clamp and cautery. Patho-

logical report, squamous epithelioma.

April 10, 1908. Perfectly well. CASE XCIV.—October 27, 1907. Mrs. M. C., age thirtyeight.

Family history, negative.

Fatient had hard labor three years ago. Four months ago began to lose blood at stool, and had alternating diarrhea and constipation. Operated for hamorrhoids one month ago, no benefit.

Present condition rather feeble; not much pain, except a bearing down feeling in the rec tum; lost blood and mucus every day. Anus practically normal. Rectum three and one half inches up showed a friable, nodular tumor, entirely surrounding the gut and extending three and one half to four inches. Enlarged glands posteriorly.

November 12, 1907. Operation (under hyoscine and morphine preliminary, and chloroform anæsthetic). Perineal method. Tied middle hæmorrhoidal arteries; removed fifteen inches of the gut before we ceased to find enlarged glands; sewed up peritonæum before cutting off gut. Sewed musculature to gut, then cut off latter outside the wound, and sutured mucous membrane to skin margin. Left in posterior drainage.

November 20th. Progressing well. Had chill last night; temperature 100° F. to-day. I could not find any tender spot, and the patient had no pain.

November 22d. Typical typhoid look and temperature, but to-day a discharge of pus came down through the pos terior drainage, and temperature dropped. Was never able

to find abscess by palpitation.

January 10, 1908. Patient had been home six weeks, doing well. No recurrence, but another abscess like the

first developed to-day.

February 4th. Noticed a small nodule in the vaginal wall, with several enlarged glands; removed and scraped out posterior fistulous tract. Parts feel all right.

February 20th. Patient feeling better. Pathological re-

port showed nodules to be adenocarcinoma; glands were

simply inflammatory.

April 3d. After a month's absence from the city, I find rapid and unmistakable recurrences at the margin of the anus and in the posterior rectal glands, as high up as the finger will reach. Patient has practically no pain, loses no blood; is not gaining in flesh or strength.

May 25th. No further operations; patient rapidly losing

ground.

June 5th Patient died. Case XCV.—October 3, 1907. Mr. G. T. H., age sixtycight

Bowels had been regular up to four or five months ago since which time he had to take medicine; had noticed excessive gas in intestines. Morning diarrhœa; could not control stool. Bowels moved from six to twelve times a

day, accompanied by gas and slime. Difficulty in passing urine; constant dull pain, acute after stool. Anus normal. Condylomatous malignant mass three and one half inches up the rectum and extending two and one half inches; movable; healthy mucous membrane above and below; no glandular enlargement that could be felt; admitted sigmoidoscope

October 8th. Operated. Bone flap method, through orthografies seement; anus sewed up before beginning operation; very little difficulty in bringing gut down; closed anterior rent in peritonæum before opening the bowel; cut gut off below the tumor with Pryor's electric angeiotribe; mucous membrane of anus everted; sigmoid dragged through anus and sutured outside; no great ten-sion; some hæmorrhage in the region of prostate, which required packing; anchoring suture through mesorectum carried around the lower end of the sacrum and tied over a gauze pad, thus closing the dead space in the hollow of

November 1st. No complications of importance except exaccerbation of old Bright's disease; patient did not regain strength. Boneflap united perfectly; small fistula

persists. December 1st. Wound practically well; bowels moved normally, but fistula persisted, and although he was up and about he gained very slowly. Left hospital for home

March 31, 1908. Patient died to-day, without recurrence; "simply wore out."

CASE XCVI.-December 30, 1907. Mr. T. M., age forty-

seven.

Family and personal history, clear.

About a year ago patient first noticed protrusion and bleeding at stool. Had always been constipated. Operated for piles in April, 1907; had curettage or something done for stricture which was discovered at the time. "Mucus and white deposit in urine." Aching, throbbing pain at stool, followed by a discharge of mucus. Anus normal, not even a sign of previous operation for piles. (Was any ever done? or was this another case of diagnosis after the patient was on the operating table?) About three inches up the rectum a hard, cauliflowerlike growth entirely surrounded the activation of the condensation of the condensati rounded the gut, and above this was a second growth, which felt papillomatous. Odor unmistakably malignant. Proctoscope could be carried through constricture; eight and one

January 3, 1908. Perineal operation. Nine and one half inches removed. Tied off middle hæmorrhoidal arteries; anal musculature sutured around gut; mucous membrane sutured to perineal skin; no hæmorrhage or shock. Patho-

logical report, adenocarcinoma.

January 17th. Introduced Coley injections.
January 24th. Left hospital, perfectly well.

May 25, 1908. Patient perfectly well and following his

trade of engineering CASE XCVII.—February 10, 1908. Mrs. M. A., age fifty-

Patient had a habit of taking laxatives. Passage of mucus and blood only in the last two months. Frequent desire to go to stool without result, and with much gas. Anus normal. Rectum smooth for three inches up, where a circular, craterlike nodular growth extends two inches; finger easily admitted; movable; no glands felt; vaginal

walls free. February 21st. Operation. Perineal excision. Removed six and one half inches; no complications; time, fifty-five minutes; sutured musculature to the gut and mucous mem-

brane to the skin; long incision up alongside of the occyx for drainage.

March 1st. Patient progressed most favorably; not a

complication.

April 5th. Felt perfectly well; posterior anal wound

June 1st. No sign of recurrence.

CASE XCVIII.—September 8, 1905, Mr. C. C., age fifty-eight.

Patient had been laid up for eight months, following a perirectal abscess in 1897; had been pretty well since, except for slight incontinence and occasional attacks of proc-titis with passage of blood and mucus. No pain. Bowels regular, moving twice a day; if soft, small clots of blood; if hard, streaked with blood. No muscle on one side of the

Hæmorrhoids opposite angular opening in the rectum. Small granulation, from which blood came. Refused treatment.

January 17, 1908. Called in consultation by Dr. Bull. Patient had had prolonged treatment for boggy condition of the rectum over prostate; some two months since began to pass blood and mucus; frequent desire to go to stool; no loss of flesh; irritation of the bladder; almost complete incontinence, as noted in 1905. Ulcer one and one half inches up, to the left of the prostate, in the anterior wall; sub-mucous fistulous tract running upward about one and one half inches, pocket at the lower end of ulcer.

January 19th. Tract laid open by Dr. Bull. Section of

tissues made and found benign.

February 5th. Fistula and ulceration almost healed; there appears to be bloody mucus coming down from above; acute flexure of the sigmoid, so that tube is stopped six inches above the anus. Given nitrous oxide gas and par-tially introduced hand into the rectum, so as to feel a growth just above the flexure; hard and nodular, constricting the bowel so that the index finger could not be introduced; upper limits of the tumor beyond reach, but mov-able. Specimen removed with specimen forceps. Pathological report, adenocarcinoma.

February 12th. Operation. Combined excision. Removed eight inches of the gut; attempt to take the tumor out through posterior anal incision a failure; it was finally taken out through the abdominal wound; rectum everted; gut invaginated; end to end suture made; all held down by

sutures to the skin.

February 13th. Patient suffering from shock; given eserine and adrenalin in full doses.

February 19th. Patient doing well; temperature 99.5 F., pulse 105. February 20th. Dressing removed. Infection of the

abdominal wall does not extend below the external fascia. Dressed with balsam Peru and castor oil. Bowels move daily by means of laxatives. Some fæcal discharge through posterior drainage.

March 1st. Abdominal wound granulating well; pulse and temperature normal; fæcal discharge through fistula

decreasing.

May 1st. Patient left for home March 15th. Has visited my office from time to time; fistula remains open, but no faceal matter passes through. inches up, at point of suture. Patient in fine physical condition except for incontinence; mentally depressed over this

August 20th. Stricture sufficiently open to admit index finger easily; is getting softer. Patient gaining flesh.

CASE XCIX.-February 13, 1905. Mrs. B. G., age forty-

Family history, negative.

Patient had had eight difficult labors. Difficulty in moving the bowels for the past two years; flatulence and vomiting; marked pain in the lower end of the rectum. Operated for stricture of the rectum nine months ago. Frequent stools, with blood and mucus. Hard, nodular stricture of the rectum two inches up, extending one and one half

February 18th. Perineal excision, modified Quenu. Difrebruary in dissection, owing to previous operation; gut finally brought down; musculature sutured to gut; mucous membrane to skin. Pathological report, adenocarcinoma. February 21st. Stitches all held except two or three in

the anterior commissure; some granulation there; slightdischarge from posterior drainage.

March 10th. Slight incontinence, but improving. Patient

left the hospital.

November, 1905. Continence fairly good; no recurrence. CASE C .- December 3, 1907. Mr. G. P. C., age fifty-

Early history of quinsy. Long history of constipation. Typhoid fever, not worse afterwards. Eight months ago had acute obstipation, which cathartics did not relieve; had slight nausea and vomiting, four or six days before a movement was induced; stool dry and lumpy, then watery; since then had had one or two attacks, but not so bad. Flatulence, which he could not pass downward. No movement except from cathartics, a desire but no results, scant discharge of mucus. Anus normal. Rectum normal; two or three hard lumps anterior to the left in Douglas's cul-desac, felt through the walls of the rectum like masses of

fæcal matter in a prolapsed loop of the sigmoid. Tube entered nine inches, and encountered a flexure which was impossible to pass.

December 4th. Oil and high irrigations, peroxide and other enemas gave no fesults; alum enemas ordered.

December 5th. No result, not even gas. Patient much distended, pulse rapid. Operated at 2 p. m. Abdomen incised outside of the left rectus; guts so distended could not keep them in; finally drew tumor of sigmoid out of wound, and resected seven inches, making artificial anus. Could not return guts owing to distention; had to make a second opening in the transverse colon and put in Paul tube.

December 6th. Patient doing fairly well; fæcal matter coming from artificial anus and from tube. Tympanites

rapidly disappearing.

December 7th. No change.

December 9th. Removed Paul tube. Fæcal matter passing freely by artificial anus.

December 12th. No complications; patient doing well.
December 22d. Patient progressed well until to-day;
was sitting up in bed taking a glass of wine, when he said,
"Oh!" dropped the glass, and fell over dead. No autopsy was permitted, but we assume the cause of death was embolism.

Conclusions.

1st. Extirpation is the only method that affords any hope of life or prolonged comfort to sufferers

from cancer of the sigmoid and rectum.

2d. Periodical, systematic, and thorough local examination of the rectum in all cases afflicted with irregular intestinal action, or symptoms pointing to disorders of the alimentary tract, is the only safeguard against these growths attaining an inop-

erable state before discovery.

3d. The only absolute contraindications to removal are immobility and involvement of the liver. 4th. The operation of amputation, by the peri-

neal route, is feasible in nearly all cases of rectal cancer, and should be the operation of choice whenever the combined or abdominal operations are not

5th. The operations on early recurrences are not

usually successful.

6th. Old age, with good physical condition, offers exceptionally good prognosis in these cases, and, contrary to expectation, the very young may be cured of the disease.

7th. Although our methods are far from being as successful as we would wish, they are still worthy of pursuing and improving.

42 West Fiftieth Street.

THE LEUCOCYTE COUNT IN ABDOMINAL SURGERY.

An Analysis of Fifty Cases.*

New York,

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The changes in the white corpuscles of the blood in the presence of acute inflammatory processes have been made use of by the surgeon as an aid to diagnosis ever since Sadler (1) in 1892 asserted that leucocytosis was generally, though not invariably, present in diseases attended with an exudate of any kind, excepting in tuberculosis. Cabot (2), Gries

(3), Bloodgood (4), Joy and Wright (5), Cazin and Gross (6), French (7), and others wrote on this subject, but they concerned themselves only with the total leucocyte count. This as a means of determining the presence of pus or gangrene showed such a large percentage of error that it fell into disrepute, and Sondern (8) considers the total leucocyte count only as an indication of body resistance, and therefore of no value when considered alone as a guide to the determination of the intensity of the pathological lesion.

However, there are still a number of surgeons who place considerable reliance on the total leucocyte count. Deaver (9), in an article published about a year ago, gives the results of the total count in one hundred cases of appendicitis with abscess, in which he found a leucocytosis below 1,000 in ten cases, between 10,000 and 20,000 in sixty-one cases, between 20,000 and 30,000 in twenty-three cases, and over 30,000 in six cases. In an analysis of the comparative leucocytosis of suppurative abdominal lesions, he gives an average of 17,760 in appendicitis with abscess, 13,000 in pyosalpinx, and 9,000 in diseases of the biliary tract. He quotes statistics of Dr. Ghrinsky in one hundred cases of appendicitis, who found an average of 11,246 when the disease was confined to the appendix, 18,500 in cases with abscess, and 8,960 in cases of chronic appendicitis.

Jennings (10) writes that the significance of the total leucocyte count and the distinctive count (to be considered later) are the same, and considers that the theory of the polynuclear count being of more importance than the total count is "unsound." He quotes Kelly, who writes: "In appendicitis early in the disease a rising leucocytosis is an indication for operation. Later, with abscess formation, no reliance can be placed on the leucocyte count." Also Da Costa, who states: "Appendicitis should never be ruled out because leucocytosis is absent. Nor should moderate leucocytosis be considered an indication

of the severity of the lesion." Kothe (11) in a study of the total leucocyte count in appendicitis, reaches his conclusions as to the nature of the lesion and the prognosis by the relation of the temperature and pulse rate to the leucocytosis. He figures that a temperature of 37.9° C., pulse 96, and leucocytosis of 14,000 indicate catarrhal appendicitis. Temperature 38.2° C., pulse 116, leucocytosis 20,000, indicate severe inflammation in the appendix, but as a rule localized. Temperature 38.5° C., pulse 122, leucocytosis 30,000 indicate more or less spreading peritonitis, but with a good prognosis. Higher temperature and pulse rate with lower leucocytosis—e. g., 18,000, general peritonitis with doubtful prognosis. Quickly falling leucocytosis, with sustained elevation of temperature and pulse rate, indicates a bad prognosis. He calls attention to an ante mortem leucocytosis, and also states that in gallbladder disease the leucocytes are little or not at all increased in number. (See Cases XXX and XXXI.)

Sondern, in the article previously mentioned, in which he discredited the value of the total leucocyte count as the result of a large number of blood examinations (1,415) in surgical cases, called atten-

[&]quot;Read before the semiannual meeting of the Queens-Nassau Medi-

tion to the proportionate changes in the polynuclear cells in purulent and gangrenous conditions. a result of his studies he concludes: "A relative percentage of polynuclear cells below 70 with an inflammatory leucocytosis of any degree excludes the presence of gangrene or pus, at the time the examination is made. . . . In adults a purulent exudate or gangrenous process is decidedly uncommon with less than eighty per cent. of polynuclear cells, and the probability of their presence increases with this percentage. . . . Eighty-five per cent. or over I have never seen without a purulent exudate or gangrenous process irrespective of the leucocyte Since the publication of his article a number of others have been written with favorable reports as to its value. Sondern himself has repeated his conclusions on numerous occasions, and in a recent paper has met the objections of those whose opinions were unfavorable, by first questioning the accuracy of the count in those cases with contradictory findings (made by untrained internes), and also by the theory that in a few cases there is but a slight absorption of the toxines and due to a low vitality or poor circulation; one drop of blood from the ear does not represent the true condition of the patient. He admits, however, that the differential count in children is less reliable than in adults.

In agreement with the views of Sondern, Mc-Kernon (12), writing on The Blood Examination in Otology, considers "the differential count confirmatory in clear cases and of value to complete diagnosis in doubtful cases"; while Taylor, writing on The Blood Examination in Gynæcology, writes: "In acute cases both the total count and the polynuclear cells were increased in proportion to the severity of the disease, but should be taken with the other symptoms." In the discussion of the above papers, Lilienthal (13) is quoted as saying that "he had come to the conclusion that in determining whether to operate or not, the blood count could be entirely disregarded." He cites three cases with

negative or contradictory findings.

While agreeing with the accuracy of Sondern's conclusions in most instances, Gibson (14), in an analysis of about 200 cases, cites a considerable number of exceptions to all of his rules, and his paper was written with the purpose of proving that a more valuable means of determining the severity of the lesion lay in the relation of the total and differential count. He devised a chart, on which he assumed the limit of the normal leucocyte count to be 10,000, while the equivalent, polynuclear percentage was 75, and that normally if the inflammatory process and the resistance were equal the polynuclear percentage would rise I per cent. with each 1,000 of the total leucocyte count. These he called units, and the relative disproportion between polynuclear percentage and the total count, as shown by his chart, he considers of great importance in diagnosis and prognosis. He writes:

Speaking generally and with considerable reserve, if the line connecting the levels of the leucocyte count and the polynuclear count run pretty nearly horizontal, whether up or down only two or four units difference, it indicates that whether severe or not the lesion is well borne and therefore of good prognosis. . . Lines running upward from the leucocyte side toward the polynuclear side indi-

cate in general a rather severe lesion and less resistance. If the interval between the two points is considerable, say ten or more units, we are quite sure to have a severe lesion. The majority (about two thirds) of total cases of all kinds show a rising line, and in such a condition as appendicitis fatal cases have all a rising line. . . . In appendicitis all the severer lesions, as those with gangrene of the appendix or progresive peritonitis, and all the fatal cases showed a or progressive peritonitis, and all the ratal cases showed a rising line on the standard chart, while all the cases indicated by a falling line were of distinctly mild types, such as well defined "safe" abscesses with little febrile or constitutional disturbance. The negative findings showing no relative increase, or even an actual decrease of the proportion of polynuclear cells, while of less value, show with rare exceptions the absence of the severer forms of in-

Since the publication of Gibson's article the writer has found nothing published confirmatory or otherwise of his conclusions, although his suggestions are mentioned in articles by Wile (15) and by Shaw (16), and Albrecht, in an analysis of 164 gynæcological cases, places great diagnostic value on the relation between the polynuclear and total count.

Other methods of indicating the presence or absence of pus or gangrene, and of determining prognosis, have been suggested by various writers. Holmes (19) judges the body resistance by the small lymphocytes, and Albrecht states "when the number of lymphocytes is considerably below normal the infection may be regarded as especially serious."

Iodophilia, or the iodine reaction of leucocytes, seemed for a time to be of value, but the reaction does not appear to be proportionate to the amount of pus present, and the degree of reaction is difficult to determine with any accuracy. Sudanophilia, or the staining of the fat droplets, present in leucocytes in inflammation, a deep red with Soudan iii, has been studied by de Marchis (20). The result of an examination in 117 cases showed it to be negative in cases of encysted pus, as in salpingitis and pelvic abscess, and the reaction was present after fractures, or a meal containing much fat. It is also stated that the presence of over one per cent. of eosinophiles is opposed to the presence of pus except in chronic cases, and returning eosinophiles indicate convalescence. Boswell (21) has written on this subject with a report of nine cases, and Albrecht considers the presence or absence, increase or decrease of eosinophiles and mast cells of aid to diagnosis and prognosis.

All these theories have been cited, and in many instances rather lengthy quotations have been made with the purpose of indicating the contradictions and differences of opinion existing among those writing on the subject. The writer has made use of the total leucocyte count for nine years, the differential count for over two years, and since the publication of Gibson's article his method of unit difference as an aid to diagnosis and prognosis, and particularly as a means of determining the need of immediate operation, but a series of four cases (Cases IV. V, XXV, and XXVII), all occurring within a short period of time, in which the blood examination showed a considerable variance with what might have been expected, made him determine to keep a record of all the acute abdominal conditions coming under his observation since then. These cases, 50 in number, occurred in the service

of Dr. B. F. Curtis, at St. Luke's Hospital, and were operated on by or under the observation of Dr. Curtis or the writer. The blood counts were made by the pathological staff of the hospital, and there is every reason to believe them accurate.

The record of the fifty cases selected is not sufficient to be of any great statistical value, but it proved to be of considerable interest, and while the conclusions of many writers were borne out, even in so small a number of cases, many exceptions were found. The cases have been grouped according to the, variety of pathological lesions and the organs involved, and while an average has been made, it has not been done with the view of establishing statistics, as the numbers were small and the range of variation large, but merely for purposes of com-

parison.

First, as to the total count. This is fairly consistent with what one would expect to find: 17,800 in the ten cases of general and spreading peritonitis; 21,950 in the nine cases of gangrenous appendicitis, with or without abscess; and 12,800 in the cases of acute appendicitis subsiding without operation. In the acute pelvic cases, the average leucocytosis was 25,100. The blood counts of a number of cases of chronic appendicitis and chronic salpingitis were made, but as they showed nothing of interest they have been omitted from this series. The exceptional cases were Case IV, in which there was a leucocytosis of only 7,000 as a result of gangrene of the appendix and cæcum, with severe general peritonitis. This patient showed no reaction and died shortly after operation. Cases V, VI, and VIII showed only 12,900, 11,200, and 12,500 respectively in the presence of spreading peritonitis. Patients of Cases V and VI recovered, while patient of Case VIII died. Case XXI was of interest, as, in the presence of 28,200 leucocytes the appendicitis subsided without operation, and three days later his leucocytes numbered only 7,900. It is also of interest to note the high total count in the acute pelvic cases, a large tuboovarian abscess, Case XL, showing a leucocytosis of 40,800. A careful analysis, then, of the total count in the whole list of cases, in view of the extreme variations found, would seem to indicate, while the leucocytes indicated in general the presence of pus or gangrene, it could not be taken by any means as a measure of the infection present.

As to the value of the total count as a means of determining resistance to infection, three patients suffering from appendicitis with general peritonitis, died within twenty-four hours after operation, one with 7,000 leucocytes (Case IV), one with 18,400 (Case II), and one with 12,500 (Case VIII). Of the other two fatal cases (with the exception of the two typhoid perforations), one patient (Case I) died eight days after operation, of intestinal obstruction. His leucocytes were 19,700 and he showed good resistance. The other patient died of intestinal obstruction, thirty days after operation, and while she had 14,800 leucocytes before operation, she showed no resistance to the infection, which originated around the cæcum three years after an operation for appendicitis, the culture from the pus being sterile. Another patient, pelvic case (Case XXXIV), with 30,000 leucocytes before operation, is still in the wards four months after a posterior colpotomy for pelvic abscess, and is still having a raised temperature, and showing little resistance to her infection.

And while it would appear that the leucocytosis is in some degree a measure of resistance, an examination of the appended list would seem to show that the time the infection has existed is also an element in developing the resistance and the number of leucocytes, as the acute peritonitis cases which were operated on early showed a lower average than the appendicular abscess cases, and these in turn a lower count than the pelvic cases, in which the lesions had existed a longer time before operation

was performed.

Taken as a whole, the differential count is fairly consistent with the rules laid down by Sondern, but here also are found several exceptions. The average for the peritonitis cases was 82.5 per cent., but this was lowered by three exceptional cases (IV, V, and VIII), with 72, 77, and 65 per cent. It is interesting to note that in Case IV the polynuclear count was by no means an indication of the severity of the lesion, while Case VIII, that of a boy three years old, with appendicitis and spreading peritonitis, shows the unreliability of the polynuclear count in children. The highest percentage, 91 per cent. in the appendix cases (Case XVIII), was one in which the appendix was gangrenous at the tip, but in which no abscess was present. Case XX was of interest as an exception, as, with 87.5 per cent. there was a greatly thickened and inflamed appendix, but no pus or gangrene was present, although the disease was of ten days' duration. Case XXV was also an interesting exception, as she showed 90 per cent. of polynuclears with a diagnosis of intestinal toxæmia, which convalesced in forty-eight hours with catharsis. Case XXI showed 88 per cent. of polynuclears (with an acute appendicitis), which, according to Sondern, always indicates pus or gangrene, but subsided in a few days without operation.

The acute pelvic cases averaged 83 per cent., and with one exception were quite consistent with the operative findings. The one exception was Case XL, a woman with a large tuboovarian abscess, who, with 40.000 leucocytes, had only 71 per cent. of polynuclear cells. She showed good resistance and was never very sick, while in a case of cellulitis of the broad ligament, with 23.500 leucocytes and 92 per cent. of polynuclears, the patient had a temperature of almost 107° F, both before and after operation, and later was attacked with a severe pyæmia with an abscess of the lung, and only recovered after being desperately ill for several weeks.

In the five infected abortion cases both the total and a differential count showed extreme variation—7,500 (Case XLIX) to 23,900 (Case XLVI), and 64 per cent. (Case L) to 93 per cent. (Case XLVI) case XLVI seemed to be sicker than either Case XLIX or L, but as they all subsided in a few days with treatment, it is difficult to determine just what the blood count indicated.

The method of determining the diagnosis and prognosis by the relation of the total and the differential count, which was suggested as of greater

value than either taken alone, shows in the appended series of cases a greater variation than if dependence were placed on the differential count alone, and almost as much variation as does the total count Four of the fatal cases (I, II, IV, and XXVII) showed very little variation either + or - on the "standard chart," while Case VIII, a child, showed - 12. The ten peritonitis cases averaged o, which would be represented by a horizontal line. In two children, aged six and seven years (Cases VI and VII), with spreading peritonitis, one showed + 14, the other - 14. In Case XX, in which there was no pus or gangrene, although the appendicitis had existed for ten days, the standard chart showed + 13; while a case of intestinal fermentation showed + 9. One large walled of abscess (Case XIV) showed +8, while a similar condition in another patient (Case XIII) showed - 18. In two of the gangrenous appendix cases without perforation or abscess, one (Case XVIII) showed -7 and -4, while the other (Case XIX) showed +5 and +4. Two counts were made in each case. Case XXI. while the patient was severely sick, showed -5, and three days later, when convalescent, showed + 10. Case XXII, one of appendicitis convalescing without operation, showed +8. In the septic endometritis cases following abortion it was quite consistent with the apparent condition of the patients. In the general pelvic cases, however, it showed great range, one case of tuboovarian abscess (Case XL) showing - 35.

Since the writing of this paper Noehren, in the Annals of Surgery, February, 1908, in an article on The Value of the Differential Leucocyte Count in Acute Appendicitis, analyzes sixty-two cases, and found a rising line in twenty-three, horizontal line in six, and falling line in twenty-three, and concludes the method to be less valuable than if reliance was placed on the differential count alone.

In the consideration of the general abdominal cases, the typhoid perforation case (Case XXXVIII) was of interest, as it showed a gradually rising total count, from 3,800 to 4,700, with a still greater proportional polynuclear count, from 60 to 73 per cent. after the perforation, four counts being made in eleven hours before an acute peritonitis had developed, while Case XXXVII, with 26,000 and 83 per cent., illustrated the blood picture of a severe general peritonitis, forty-eight hours after the perforation of a typhoid ulcer. Cases XXIX and XLV showed the influence of hæmorrhage into the peritoneal cavity in causing a rise of both total and polynuclear count, just as in suppurative conditions. Case XXVIII, a child thirteen months old, with an intestinal obstruction from bands and adhesions two months after operation for intussusception, is of interest as an example of the very little value of the blood count in young children, as, notwithstanding a beginning peritonitis, his distinctive count was 64. and his line on the standard chart showed -26.

Both of the kidney cases showed high total and differential counts, while the unit differences were only + 1 and 0. Of the gallbladder cases, one (Case XXX) showed 22.600 with 87 per cent., the other (Case XXXI) 11.800 with 05 per cent., although, as stated previously in this article, diseases of the biliary tract are supposed not to give, as a

rule, high blood counts. Case XXXI was of interest as, notwithstanding the high polynuclear count, 95 per cent., which Sondern considers of such bad prognosis, she made a perfect recovery after cholecystectomy.

Finally, what deductions can be drawn from these facts? Is the margin of error sufficient to invalidate the value of the leucocyte count entirely, as has been asserted by some? It would appear not. Great variations do appear in both counts. In regard to the total count, the leucocytes are certainly increased in suppurative and gangrenous conditions as well as those in which there is an effusion of blood into the peritoneal cavity, but it seems impossible to state that any given number indicates pus or gangrene. And while the higher counts do, in most instances, indicate pus or gangrene, it must be borne in mind that low counts do not rule either or both out. In the main, Sondern's conclusions as to the differential count are borne out by the appended series of cases, but with a considerable number of exceptions.

Concerning the comparative value of the total and differential count, in a large majority of cases both showed an elevation almost equally relative to the pathological condition; and in several of the cases, as IV, XXI, XXV, and XXXIII, where the total count was at fault, the differential count was equally misleading. And as the differential count seems to follow the total count in such a large proportion of cases, it seems questionable whether the statement that the latter is of no value except as an indication of body resistance, is correct. Also the differential count would appear to show somewhat less variation than the total count, and seems to be of greater value than the latter, particularly as we have some

definite limits, such as those set by Sondern; but

here also it is to be repeated that in the writer's

experience there is a considerable margin of error.

However, the record of the pulse and temperature, in several cases listed in the accompanying table, also shows the uncertainty of the body reaction indicating the extent of the pathological lesion, and as one would not think of disregarding the pulse and temperature in making a diagnosis, so should one consider both the total and differential count as part of the symptom complex or clinical picture of the case to be considered. After all, it is the combination of symptoms which must be considered in any abdominal case. The persistence of vomiting, the amount of rigidity or pain, the sudden letting up of pain with persistence of other bad symptoms, indicating gangrene with perforation and relief of tension, the abdominal facies, the poisoned look of the patient, the continued or rising pulse and temperature, all these symptoms indicate in the clear case the need of operation. But in the case seen early, where the diagnosis is not clear, where one feels the danger of waiting to see whether the unfavorable symptoms continue or new ones develop, the blood count is of great value. If it is confirmatory it may be an important indication for immediate operation; if negative, it is unreliable in so small a percentage of cases that unless there be present some other symptom pointing clearly to operation, one is usually justified in awaiting further developments.

Table of Cases.

| | | | 1 aoie | of Cases. | | | |
|--|-----------------------------|--------------|----------------------|-------------------------------------|------------------|-------------------|---|
| Name. | Total count. | Per cent. | Unit change, | Temper- ature. | Pulse. | Respira- tion. | Diagnesis and operative findings. |
| I. P. H | 19700 | 87 | +3 | 103.2° F. | 122 | 28 | Gangrenous appendix, general peri- |
| II. K. N | 18400 | 85 | +1.5 | 103.4° F. | 1.8 | 3.2 | Gangrenous appendix, general peri- |
| III. L. M | 17800 | 85.5 | +2.5 | 104° F. | 1500 | 44 | tonitis. Gangrenous appendix, general peri- |
| IV. K. M | 7000 | 72 | +0 | 102° F. | 112 | 26 | Gangrenous appendix and excum |
| V. M. B | 12900 | 77 | —ı | 100° F. | 116 | 40 | and general peritonitis. Gangrenous appendix, spreading |
| VI. S. W | 11200 | 90 | +14 | 101.4° F | 120 | 40 | peritonitis. Gangrenous appendix, spreading |
| VII. S. S | 32800 | 83 | -14 | 101.4° F. | 118 | 26 | Gangrenous appendix, spreading |
| VIII. R. W | 12500 | 65 | -12.5 | 105° F. | 168 | 28 | peritonitis. Gangrenous appendix, spreading |
| IX. E. K | 16200 | 86 | +5 | 103.8° F. | 132 | 44 | peritonitis. Gangrenous appendix, general peri- |
| X. H. F | 181001 | 87 | +4 | 105.4° F. | 140 | 28 | tonitis. Gangrenous appendix, general peri- |
| XI. O. H | 28900 18400 | 90 86 | - 4 +4 | 101.2 ° F. 100 ° F. | 124 90 | 30 32 | tonitis. Gangrenous appendix, large ab- |
| XII. J. W | 16000 | 80 | | 102 F. | 104 | 211 | scess. Gangrenous appendix, large ab- |
| XIII. I. K | 39200 | 86 | -18 | 101.4° F. | 140 | 36 | scess. Gangrenous appendix, large ab- |
| XIV. M. K | | 89 | +8 | 99.2° F. | 112 | 24 | scess. Gangrenous appendix, large ab- |
| XV. J. McK | 22200 | 81 | 6 | 103° F. | 120 | 30 | scess. Gangrenous appendix, large ab- |
| XVI. A. M | | 82 | +2 | 98.4° F. | 124 | 32, | scess. Gangrenous appendix, large ab- |
| | 26600 37000 | 90.5 82.5 | 1 20 | 101.8° F. | 100 | 22 | SCCSS. |
| XVII. R. T | 13300 | 79 | +1 | 102.4° F. 100.4° F. | 140 | 36 | Gangrenous appendix, small ab- |
| XVIII. P. S | 27000 ² 30000 | 84 | —7 —4 | 104° F. | 84 | 28 | One-third of appendix gangrenous; no pus. |
| XIX. G. W | 150003 | 81.5 80.5 | +5 +4 +13 | 99.4° F. 99.2° F. 99° F. | 100 | 18 | Tip of appendix gangrenous; no |
| XX. C. P | | 87.5 | 丁13 | 99° F. | 80 | 22 | Inflamed appendix, no pus (or gangrene.) |
| XXI. P. L | 282004 7900 | 88 83 | -5 +10 | 101° F. Normal. | 88 | 24 | Acute appendicitis, no operation. |
| XXII. II. K XXIII. M. F XXIV. J. W. XXV. E. F. XXVII. E. P. XXVIII. E. F. | 7600 | 86 | +8 | | 120 | 30 | Acute appendicitis, no operation. |
| XXIV. J. W. | 7600 | 79 62 | + I 1 I | 100.2° F. 100.4° F. 101° F. | 88 | 20 24 | Acute appendicitis, no operation. Acute appendicitis, no operation. |
| XXV. E. F. | 16000 15000 | 90 78 | +9 2 | 100.6° F. | 110 120 | 26 36 | Intestinal toxemia. Intestinal obstruction. |
| XXVII. E. F | 14800 | 79 64 | —1 —26 | 101° F. | 120 134 | 24 28 | Intestinal obstruction. Intestinal obstruction. |
| XXIX. J. L | 148005 | 85.5 | +5.5 | 08 4 C E | 80 | 24 | Hypernephroma of the liver with |
| XXX. A. T | 10400 22600 | 71.5 87 | -3.5 -1 | 101.4° F. 103.4° F. 101.4° F. | 100 | 30 36 | peritoneal hæmorrhage. Cholecystitis, very little pus. |
| XXXII. M. S. | 11800 25600 | 95 93 | ‡17 | 101.4° F. 105° F. | 140 | 36 36 | Cholecystitis, no pus. Pyonephrosis. |
| XXXIII. S. K | 29000 | 89 | +0 | 100.8° F. | 124 | 36 | Pyelitis. |
| XXXIV. T. Q XXXV. E. L. XXXVI. S. S. | 21400 | 89 85 | +3 -2 | 101° F. | 80 108 | 2 4 26 | Abdominal abscess, lumbar, potts. Abdominal abscess, necrosis, pelvis. |
| XXXVI. S. S | 19500 | 84.5 | +0 | 99.8° F. | 98 | 24 | Abdominal abscess, carcinoma of the cæcum. |
| XXXVII. H. M | 26000 3800 ⁶ | 83 60 | 8 4 | 102° F. | 140 | 48 | Typhoid perforation, two days old. |
| | 4800 | 59 76 | —5 +6 +4 | Temperature | 3.6° F. | | Typhoid perforation. |
| VVVIV D II | 4700 30000 | 73 81.5 | - 12 E | Pulse betwee | n 120 and 122 | l 130. 26 | Tuboovarian abscess. |
| XXXIX P. H. XL. M. D. XLI, C. McE. | 40800 | 7.1 84 | 35 | 103.4 F. 101.3° F. 102.2° F. | 112 | 22 | Tuboovarian abscess. |
| XLI. C. McE. | 16000 29600 | 80 | +3 -15 | 102.2° F. | 100 | 24 26 | Tuboovarian abscess. Chronic salpingitis, acute exacer- |
| XLIV. M. S | 19200 | 85 | +1 | 101.2° F. 106.8° F. | 120 | 24 24 | Abscess of the broad ligament. Cellulitis of the broad ligament, |
| | 23500 16600 | 92 88 | + 1 + 3·5 + 6 | 102 20 F | 120 | 28 | Ruptured ectopic gestation. |
| XLVI. M. G | 18200 | 93 | +4 +7 +5 | 104.6° F. 104.2° F. | 82 160 | 32 | Septic endometritis. Septic endometritis. |
| XLVIII. E. K | 11800 | 82 | +5 | 101 F | 1.28 | 20 | Septic endometritis. Septic endometritis. |
| XLVIII. E. K. XLIX. D. J. L. H. Z. | 7500 7800 | 69 64 | —3·5 —9 | 103.2 F. 102.8° F. | 140 | 28 24 | Septic endometritis. |
| Forty-eight hours apart. | | | | Three days | s apart. | | |

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 - 445 West Eighty-first Street.

oIn fourteen hours.

GUNSHOT WOUNDS OF THE ABDOMEN.

By Gray G. Holladay, M. D., Portsmouth, Va.

Gunshot wounds which penetrate the abdominal cavity may, for convenience, be considered in practice as of two kinds, those received in civil life and those received in war. The treatment of these two kinds is exactly the reverse. The teaching of such men as Treves and Makins, of Great Britain, and of our own Nicholas Senn is, that gunshot wounds of the abdomen received in war do better when let alone. Borden in his Prize Essay says: "Traumatisms, which might be treated conservatively in civil practice, often require radical operations under the environment and conditions incident to military surgery; and, on the other hand, injuries, which in civil practice would require immediate surgical intervention, are frequently best treated expectantly, under the conditions which obtain in the field. The latter is well illustrated in the difference which obtains in civil and military surgical treatment of gunshot wounds of the abdomen. With the resources of the civil hospital and surrounded by aseptic safeguards, the civil surgeon uniformly opens the abdominal cavity whenever penetration is suspected. While the military surgeon, having in view the frequent recovery of such cases when treated expectantly, and knowing the almost certainty of producing infection under the conditions which obtain in the field hospitals, does not usually resort to laparotomy unless death without operation may be considered certain. Makins quotes Watson Cheyne as follows: "After the fighting at Karre Siding, on March 29th, of ten wounded (five having died within twenty-four to twenty-eight hours) nine were let alone and four died within the next twenty-four to thirty-six hours. Five were alive on April 1st and one upon whom I operated died on April 2d. (One of the others died later.)'

Senn wrote, that so far as he knew, there were but four operations done for gunshot wounds of the abdomen during the Cuban campaign. He says later, in speaking of these cases: "Four laparotomies for gunshot wounds were made here by a volunteer surgeon, but as all the patients died it was deemed expedient to assign him for duty where he could do more good than harm." This is somewhat modified when he says later: "This unfavorable experience should not deter surgeons from operating in the future in cases in which from the course of the bullet it is reasonable to assume that the bullet has made visceral injuries which would be sure to destroy life without surgical intervention." I would add to this, or where a serious hæmorrhage is taking place. Makin tells us that "perforating wounds of the small intestines are very fatal injuries; every patient in whom the condition was certainly diagnosticated died." Otis wrote that he doubted if there was even one incontestable instance of recovery from wounds of the small intestines. He gives five cases which were under observation during the civil war, and says of them: "The five foregoing cases are the only instances of recovery from gunshot wounds of the abdomen reported during the war, in which there was any plausible

ground for suspecting that the small intestine was the seat of the lesion." In that war there were 3,717 perforating wounds of the abdomen with but seventy-nine cases where the stomach was injured. In the Spanish-American war, in addition to the four cases spoken of before, there were forty cases in which there was no operation; of these forty patients, twenty-five died; a mortality of 62.5 per cent.

In civil life the experience of all surgeons is that those patients operated upon promptly frequently get well, those treated expectantly usually die. In these days when small calibre but very high power rifles are used in warfare, experience has taught that the percentage of recoveries is very much less with operation than without, except under the most favorable conditions. These are seldom or never found at the front. "To summarize, it may be concluded that modern surgical methods have not as yet proved available to markedly reduce the mortality of the wounded in penetrating wounds of the abdomen received in war, but that the mortality in these cases has been lowered to some extent by the use of the small calibre rifle." (Borden.) In civil life the reverse is true, because of the very different character of the weapon usually used and the different character and surroundings of the patient.

Personally I believe that all cases of gunshot wounds of the abdomen in civil life should be operated on at the earliest possible moment, unless there is positive evidence that the cavity has not been penetrated; for I think it far safer and better surgery to take it for granted that harm has been done than to sit still and await symptoms. When well defined symptoms of intestinal injury manifest themselves it will usually be too late for surgical intervention to be of avail.

From the location of the wound of entrance I do not believe that any one can say what deeper structures or organs have been injured, nor do I believe that any one can say whether or not its contents have been injured, even when it is known that the cavity has been penetrated. The angle at which the ball strikes the wall may cause it to take any kind of a course, and it is frequently difficult, if not impossible, to get any idea from what direction the ball came.

I recall one case (Case IV) where, judging from a previous case, I was certain that the large intestine had been injured, and laughingly remarked that had the ball entered at a similar spot on the right instead of on the left side it would probably have done an appendectomy. Upon operating I found that the large intestine had escaped injury, but that the bullet had missed the appendix by the fraction of an inch, it having traversed the abdominal cavity, perforated the mesoappendix and grazed the caput coli. Again, I believe that where the bullet enters below the umbilicus, if the intestines are empty, while the fæcal extravasation is less, the chances are better for a large number of perforations, for the empty small intestines naturally gravitate toward the pelvis, and a bullet is perhaps more apt to perforate an empty collapsed coil than one distended with gas. I believe that many times bullets will enter the abdominal cavity above the umbilicus and

do no harm, and in this opinion I but follow the oft expressed opinion of Senn, and it is derived from experiments and cases recorded by him and from my experience in my own cases and those seen with others.

In regard to symptoms I regard an increasing rigidity of the abdominal muscles as the most important single symptom of visceral injury, and in the absence of all other symptoms, but with an increasing rigidity, I should never hesitate to operate. In my experience the pulse, even in patients when there was a large hæmorrhage, has not been as rapid as I should have expected to find it. It will always be rapid enough, however, if there is a beginning peritonitis from fæcal extravasation; and it is a source of ever growing wonder to me how patients can be so dangerously injured and yet show so few symptoms of more than a trifling injury, as many of these cases do, even after a lapse of several hours. In every case I have seen where there has been a visceral injury, no matter what other signs or symptoms were absent or present, there has always been present an increasing rigidity.

Right here I may mention the hydrogen gas test, and if I may be pardoned for so saying, I "mention but to condemn it." To my mind it is far less certain and very much more dangerous than an exploratory laparotomy. Every particle of fæcal matter which escapes from a perforation adds to the gravity of the case. When this test is used who can say how much fæcal matter is (or may be) forced out by the gas? When an exploratory laparotomy is made under the proper surgical technique, even if no perforations are found, the dangers of the operation are not so great as those incurred by the gas test, should there be a perforation.

When operating I think it is the safer plan to suture each perforation as found, as I think there are several advantages in this method. Small perforations in the mesentery which are not bleeding may be let alone, especially when there is need for haste, as may wounds of the omentum. Should a large vessel in the former be cut, however, it will probably render a resection of the gut necessary, and in the latter a portion of the omentum may require ligation and removal. For suturing the liver I have found nothing so good as a very large needle ground down to a very blunt end, armed with large catgut.

I differ from those eminent authorities who tell us, as almost all of them do, that the abdomen should be opened in the median line in all cases. In this I may appear presumptuous, but I can see no good reason for this advice, and, in the light of my present experience, I shall not follow it unless there exists some very strong reason in some special case. Of course, where there are two or more wounds of entrance the question is rendered more difficult. In such a case (Case III) I should take chances and open where the most important organs were probably injured.

Also, I differ with those who contend that a probe should never be used, for, as the late Greig Smith well said, "where a bullet has passed, surely a probe may follow without much increase of danger." However, I seldom use a probe until the patient is on the operating table ready for operation, and then

I use it more as a guide than as a director. (Yet I always use a "director.") The question of resection will have to be decided in each individual case, as no set rules can be given. Where a large vessel in the mesentery is cut, or where perforations are so close together that by suturing them the lumen of the gut will be too much narrowed, or where one perforation is so large that suturing it will have the same effect, a resection will be necessary. In one case I have resected, and in another I have not, when the surgical indications were just as strong apparently in one as in the other.

Drainage, too, is another matter about which no fixed rule can, in my opinion, be laid down. "When in doubt, don't drain." When free fæcal matter is found in the cavity, or when there is a beginning peritonitis, or when for any reason it has been necessary to use irrigation, I should drain. In Case II, had I known that the patient had drunk the milk I should have drained; not knowing it I did not drain, and, as things went, I am glad that I did not know it. In cases where four or more hours have elapsed between the receipt of the injury and the operation it will be well to drain. I think that, naturally, where there is much hæmorrhage more fæcal matter may be extravasated, with less danger than where there is a less amount of blood poured out in the abdominal cavity, for where there is a very free hæmorrhage the fæcal matter is of necessity "diluted," and, therefore, less virulent.

As regards mortality, in one series of 110 operations there were thirty-six recoveries, a mortality of 68 per cent.; in another series of ninety-six cases seventy-one patients died, a mortality of 73.95 per cent. To-day the mortality seems to vary between 52 and 73 per cent. Fenner has reported six operations with one death, and Douglas had eight operations with two deaths. I have operated five times, and four of the patients made perfect recoveries and the fifth died of double pneumonia after all the perforations had healed.

The results of operation depend very largely upon the length of time which elapses between the receipt of the injury and the operation. Those patients who are operated upon within four hours show about 20 per cent. less mortality than those operated upon after a longer time.

As regards the number of perforations, in a series of eighty-one cases there were found 439 perforations, an average for a case of 5.4. In a very much larger number the average has been between five and seven for a case. Iden rports one case where there were nineteen perforations. In 165 cases, there were but nine in which all the perforations were not found.

In the five cases which I now report the average number of perforations of each case was 9.4 of the gastrointestinal tract, one ball passed also through the liver and the diaphragm. The average time which elapsed between the shooting and the operation was 8.8 hours.

CASE I.—J. M.; age thirty seven years. This man was shot at 11 p m., 158 miles from my home, and was brought to me, coming part of the way on a freight train. After being shot he had done some walking about. It

operated upon him at 7 p. m. the next day, and at the time of the operation his condition was surprisingly good, although he failed very rapidly after the operation was As so often happens when an abdominal cavity full of blood is opened, I presume that it is from the relief from pressure which invites collapse similar to that

sometimes seen in tapping for ascites The wound of entrance was three inches to the left and on a level with the umbilicus, and the ball (a. 32 calibre pistol ball) was cut from under the skin just above the left trochanter major. The abdomen was opened through the bullet hole and the omentum prolapsed into the wound, thus preventing any hæmorrhage from appearing exter-nally. As soon as this omentum was replaced there was a very free gush of blood. (One objection to opening through the bullet hole; the escaping blood may greatly obscure the field.) Upon getting into the cavity it was found to be full of blood with much fecal matter floating about. Two perforations and a slit one and one half inches long were found in the descending colon. A further inches long were found in the descending colon. A further search revealed six perforations in the small intestine within a space of not over four inches. These were so close together that a resection was deemed best and hurriedly done, and, as the patient's condition was now very bad, a Murphy button was used. Besides these perforations there were several in the mesentery and omentum (six or eight), but as I am not now sure of the number, I put this case down as having nine perforations. Gauze drains were used in this case, and the patient made a good recovery, though not a very rapid one. His bowels moved naturally on the third day. At the next movement he passed a very large number of watermelon seeds; his last meal before the shooting had been made of watermelon. This case was published in the International Journal of Surgery for April, 1907

Case II.—E. K.; age fifteen years.

This boy was shot about 5 (?) p. m. with a .22 calibre pistol, and walked to the hospital, where a fly dressing was put on over the wound; then he walked home and for supper drank a glass of milk. I operated upon him at 10 p. m., and opened him up through the bullet hole, which was two inches to the right and slightly above the umbilicus; some blood was found in the cavity, but no perforations could be found in the intestines. The stomach, which was in view, seemingly rather low, was next examined, and a perforation was found in its anterior and one in its posterior wall. There had been some leakage of stomach contents, which was carefully sponged out. The perforations were sutured and the abdomen cleansed without drainage. The boy made a rapid and uneventful recovery.

CASE III.—T. H.; age twenty years

This man was shot between 5 and 6 o'clock in the after noon with a .32 calibre pistol, while stealing chickens. He was carried some miles to the county jail, and later brought to the hospital, where I saw him at 11:30 p. m. His condition when I saw him was very bad, but in spite of the shock I decided to operate at once. He had been shot twice, one ball entering between the seventh and eighth ribs, the other about two and one half inches to the right of (or behind) the anterior superior spine and on a level with it. In this case, as there were two wounds of entrance and very marked rigidity of the abdominal wall. I decided to open the abdomen through the median line between the ensiform cartilage and the umbilicus. There was some blood in the cavity, and solid fæcal matter was protruding from the perforation in the transverse colon. This was at once cleaned off, and the perforation sutured. Another perforation was found in the transverse and two in the ascending colon; these were at once sutured. The ball was found to have passed through the liver and diaphragm. The wound in the liver was sutured with large phragm. The wound in the liver was survived acteut. The appendix, which came into view, was acutely categories and a freed concretion, was reinflamed and, as it contained a fæcal concretion, was re moved. The second ball had not entered the abdominal eavity at all and was, a few days later, cut from under the skin of the right buttock. This case was closed without drainage, and the patient made a quick and uneventful

CASE IV .- G. D.; age fourteen years.

This boy was shot between 3 and 4 p. m. with an un-known weapon and from an unknown direction. I saw him between 2 and 3 a. m., when his condition was only

fairly good. I found the wound of entrance to be three inches to the left and slightly below the umbilicus. I at once opened him up through the wound. The cavity was full of blood with omentum acting as a plug, so that no blood was escaping externally. Twenty-one perforations were found in the small intestines and sutured as found. From many of these fæcal matter was oozing. Four perforations of the mesentery were found, and, as two of these were very large and ragged, they were sutured. A large vessel in the mesentery had been cut, and it was from this that most of the blood was coming. The ball had gone across the abdomen from left to right, gone through the mesoappendix and grazed the caput coli. Gauze drains were used and, at the first dressing, during the boy's violent struggles, a stitch pulled out and a large amount of the small intestine protruded. In spite of the number and character of the perforations the boy made a splendid recovery and was well in three weeks. In this case the perforations made a most interesting study, for there were all kinds, some very small and clean cut, as if done with a punch, some very ragged, some as large as the end of my thumb, some had the mucous membrane protruding and some did not. In several places there was profituding and some did not. In several places there was one perforation in the gut and not another one nearer than twelve inches; in other places there were three perforations within two inches. Evidently, in some parts of the canal, the ball had traveled inside the lumen. Otts says that "the mucous membrane prolapsed almost constantly." This has, however, not been my experience by any means.

CASE V .-- T. R.; age thirty-seven years.

This man was shot twice with a .32 calibre pistol at 7 p. m. One ball entered the abdomen three and one half inches to the left and on a level with the umbilicus and passed right through, being cut from under the skin of back at a little higher level. The other ball entered his left thigh. The muzzle of the pistol was pressed right against the man when the first shot was fired, and his clothing was set on fire. I operated upon him at 9:30 p. m., and compand him through the bullet held. I found much and opened him through the bullet hole. I found much blood in the cavity, with some free fæcal matter. Seven perforations were found in the small intestine; of these three were sutured, and twelve inches of gut resected, because to close the four perforations entirely would have closed the lumen of the gut. Gauze drains were put in and the abdomen closed. The next morning the man complained of difficulty in and of great pain on breathing, and stated that he could not breathe with any comfort except when lying on his side. His bowels moved on the second day and again on the third. He was dressed daily, and while there was some discharge it was of normal odor and appearance. Except for the lung complication, which was diagnosticated as pneumonia, he seemed to be doing nicely. He died quite suddenly in collapse at the end of eightyfour hours.

The autopsy showed all the perforations healed entirely and the line of anastomosis good. There had been no leakage, and while there was a mild grade of peritonitis present it was not thought to have accounted for his death even if no other cause had been found. The lower lobe of the left lung was solidified, as was the lower part of the right lower lobe. The patient had been frequently turned on his sides. There was also no pus in the abdominal

Note.—Since the foregoing was written I have operated in two more cases, with recovery in each. In one the colon was perforated; in the other the stomach and small intestine, and in the same case an intussusception of the small intestine was found.

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516 MIDDLE STREET.

SOME TYPES OF PNEUMONIA ASSOCIATED WITH INFLAMMATION OF ADENOID GROWTHS.

BY EDWARD JOHN BERO, M. D., New York.

Adenoid vegetations interfere with proper nasal These vegetations are found microrespiration. scopically to be swarming with microorganisms. As a result of the air not being moistened and warmed by the passage through the nasal chambers, mouth breathers are predisposed to inflammation of the respiratory tract.

During the past year I have been impressed by certain types of pneumonia coincident with inflammation of adenoid growths. Observations made in similar cases during previous years seem to correspond to those made recently. The chief characteristics were very high temperatures, at first remittent, towards the end of the illness becoming intermit-

Pneumonia with inflammation of adenoid growths has been met in the following forms: I, Without purulent middle ear inflammation; 2, with purulent middle ear inflammation, a, the middle ear inflammation appearing early in disease, and, b, later in disease.

Group I. CASE I. -G. B., twenty-one months old; had several attacks of otitis media due to adenoid growths.

Present history: A few days before the appearance of high temperature, the child looked tired, catarrhal, slept with open mouth, snoring loudly. On the morning of November 30, 1907, temperature began to rise. In the evening the child looked quite ill. The next morning the temperature became normal, but general condition did not improve. The child breathed rapidly and coughed frequently. After a few hours the temperature rose to 106° F. Physical examination of the chest revealed the presence of râles. No consolidation was found. An otologist called in consultation found both ear drums characteristic of adenoids; suspecting a middle ear inflammation behind the more inflamed ear drum, he performed a paracentesis. No discharge followed. During the first week of December the child con-tinued to be ill. Temperature was remittent for a few days, with high exacerbations, then became intermittent. Breathing became more labored. Cough was loose. Over the upper part of the left lung, posteriorly, an area of diminished resonance with moist râles was found. This case was diagnosticated as pneumonia. From the eighth until the thirteenth day the temperature was intermittent, being every day normal or subnormal for a few hours. Inflammation of the adenoids subsided, and no purulent dis-

Case III.—(Notes.) Child, L, eighteen months old, started its illness with severe gastrointestinal symptoms and high temperature on May 4, 1908. The following day vomiting and diarrhoxa subsided, but the temperature rose to 106° F. The nose was discharging freely. Inflamed adenoids were present. Ear drums were congested, but no bulging noticed. The child's breathing became labored from nasal obstruction. Cough was loose. Over both lungs railes were present. Patches of diminished resonance and bronchovesicular breathing found over both lungs. The temperature in this case during the first week of illness was remittent; evening temperature about 106° F. From the tenth to the sixteenth day of illness temperature was intermittent. The child became well on sixteenth day. No purulent otitis media followed.

Case III.—Child, A. C., three years old. First call made on July 10, 1905, after appearance of high temperature. Examination revealed presence of inflamed adenoid growths. Diffused râles were found over both lungs. The temperature was intermittent in character and continued so for some time. No consolidation of the lungs could be detected. Being unable to find any positive signs of pneu-monia, I decided to have the ears examined. A specialist found the left ear drum very much inflamed. Paracentesis was made; no discharge followed. Course of fever had not

changed in the mean time. Spleen was not enlarged. Plasmodia were not found in the blood. Child became well after eleven days of illness. I diagnosticated the case as adenoiditis and pneumococcæmia. Adenoiditis alone could be excluded, as inflammation of adenoid growths without middle ear inflammations never give tem-

peratures for a considerable length of time.

Group II, a. CASE IV.—Annie G., three years old. History of mouth breathing and earache. On the 10th of August, 1906, child became ill, with high temperature. Temperature was remittent for first few days. Breathing labored. Numerous rhonchi, sibilant and sonorous breathing over both lungs found. On the third day of illness both ears were examined. Left drum was bulging. Paracentesis made, purulent discharge followed. Child continued to be ill, notwithstanding the perfect drainage from the ear. Diagnosis of bronchopneumonia with otitis media was made. Towards the end of the illness temperature became intermittent and continued so for five days, giving the impression of a pneumonia with four pseudocrises. The spleen was somewhat enlarged towards the end of illness, but no malarial plasmodia were found. Quinine did not modify the character of fever. Child became well on the four-

CASE V .- The child of Case I became ill again two months after previous illness. After some exposure the thild showed symptoms of inflamed adenoid growths. On the 15th of March it became quite ill. A few days later a distinct area of lobar pneumonia of left inferior lobe could be made out. Temperature at the time was remittent. Highest temperature recorded was 106.5° F. On the sixth day of illness the temperature became normal for some time after profuse sweating. Two days later a complication of measles set in. The area of consolidation remained the same. A purulent of till media followed. The eruption gradually subsided. The temperature became intermittent and continued so for over a week. On the twenty-first day of illness the layers became the results.

of illness the lungs began to resolve.

The complication of purulent otitis media observed in the last named group of pneumonia cases often hampers the observer, as it may, by itself, give the same characteristic temperatures. Bearing in mind that inflamed adenoid growths are always accompanied by a congestion of ear drums, methods must be used to prove that there is no purulent secretion behind them. To make the above supposition of the direct relation between inflammation of adenoid growths and pneumonia following it, probable, the characteristic course of pneumonia must be observed in cases without any complicating otitis

Basing the description of the adenoid pneumonia upon cases used as illustration of types, and upon others of a similar nature, I can give the following general description of adenoid pneumonia:

Child or infant previous to its illness is a mouth breather, snoring in sleep; sleeps with eyes half closed, suffers from night terrors, or has frequent attacks of otitis media. The pneumonia is preceded by catarrhal symptoms, as running from the nose, suffused eyelids, or in infants by gastrointestinal symptoms. A high temperature appears, which may become normal after a few hours, then rises again and remains remittent for some time. Child begins to look very sick. The temperature may go up to 106° F. during the first few days of illness, then subsides somewhat. The patient moans in sleep. His breathing is labored. Respiration may be between 60 to 80 to the minute. Pulse, 135 to 160. Extremities are cold. There may be frequent, dry or soft, cough. Physical examination of chest may show signs of typical lobar pneumonia or area of diminished resonance with moist râles and bronchovesicular breathing. An otologist called in consultation may not find sufficient cause for puncturing the ear drums. Paracentesis would not

show in many cases the presence of a purulent secretion behind the congested ear drum. At the end of the first week or beginning of the second, the temperature becomes intermittent. The duration of fever is indefinite. It may end in the second week or follow a protracted course in cases where a purulent discharge from the middle ear follows.

The cases described here have shown the follow-

ing characteristics:

1. Very high temperature was noticed.

2. The height of temperature did not correspond to the severity of illness, as in other forms of pneumonia, and did not make the progress unfavorable.

3. The temperature towards the end became intermittent, giving the impression of a number of

pseudocrises.

4. The same characteristic temperature was observed in cases complicated by otitis media as in those without it.

5. Complications with the exception of otitis media have not been seen in robust as well as weak

persons. 6. Early puncture of the ear drum did not modify

the course of the disease.

- 7. Spleen was not enlarged; malarial plasmodia were not found. Quinine did not modify the intermittent temperature.
 - 8. The disease had often a protracted course.
- 9. The patient was left prone to relapses of similar character in cases where adenoid growths were not removed.

58 SEVENTH STREET. ---

Our Beaders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVIII.—How do you treat acute corysa? (Closed

EAAVIII.—How do you treat sick headache? (Answers LXXIX.—How do you treat sick headache? (Answers due not later than October 15, 1908.)

LXXX.—How do you treat asphyxia neonatorum? (Answers due not later than November 16, 1908.)

swers due not later than November 10, 1908.)
Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish.

address, both of which we must be at tiberty to publish.
All papers contributed become the property of the JOURNAL.
OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.
The prize of \$25 for the best essay submitted in answer to question LXXVII has been awarded to Dr. Maxwell S.
Simpson, of Titusville, N. J., whose article appears below.

PRIZE QUESTION LXXVII.

THE TREATMENT OF VARICOSE ULCER.

By MAXWELL S. SIMPSON, M. D., Titusville, N. J.

The typical varicose ulcer exhibits an unhealthy floor covered with exuberant flabby granulations, spots of necrosed tissue, and is surrounded by an

infiltrated zone supporting an eczematous skin (the dermatitis hæmostatica" of Klotz and which he regards as distinct from true eczema) of varying intensity. The venous circulation is always faulty; if the varicose veins do not stand out above the level of the skin they are imbedded in a sodden tissue which does not pit on pressure, is glazed and tense on the surface, differing thus from ordinary cedema in which mechanical obstruction only is offered to the return of the blood ("solid cedema"-Lister).

It is commonly situated on the front of the lower third of the leg, or over the malleoli, where there is but little celluloadipose tissue. It heals but slowly, and the ineffectual effort of the surrounding skin to form a cicatrix bounds the wound with a hardened bluish red border, preventing further epidermization.

Innumerable remedies and methods of treatment, each successful in a certain number of cases, spring up in so intractable a disease as this, and it is well before advocating any one plan to give them some consideration. In the early eighties oily dressings were much in use, chiefly oiled gauze with several layers of dry gauze and a protective layer of rubber tissue. Sometimes balsam of Peru was added to the oil; one of the best mixtures being balsam of Peru, alcohol, and castor oil; and sometimes iodoform was added. The castor oil mixture is viscid and will remain on the wound without spreading. If sufficient absorbent material is used the wound will remain moistened yet drain its serum, and the granulating surface remain clean and dry when the dressing is removed, but this dressing is no protection against erysipelatous infection, does not actively prevent suppuration, and the time required for healing is prolonged.

The aqueous dressings of Lister were then used; sterile gauze, medicated, and with an impermeable covering. With the moist dressings there is no retention of secretions, depletion ensues and more rapid repair results. But it is far from satisfactory. By keeping the surface warm and moist the dressings act as poultices, increase inordinately the secretions from the wound, the granulations become exuberant, and the eczematous condition of the skin is increased. Acute cedema with exfoliation of the epidermis is of common occurrence. Proliferation of bacteria render the dressings putrid, and frequent

change becomes necessary.

A routine plan of treatment will not suffice; success must be based on causal factors. In many cases constitutional attention is not called for, but internal medication should not be overlooked. Many slow healing ulcers improve through influence of the iodides even when not syphilitic. The active elements in this form of ulcer are varices and eczema, and no plan of treatment is successful that ignores them. Pressure applied smoothly and uniformly is essential. This has been so long recognized that Ibn Sina Avicenna, the Arabian physician and writer of the tenth century, favorably indorsed it. Thomas Baynton in 1792 treated these ulcers by adhesive strips so arranged as to approximate the edges of the wound and used a roller bandage for pressure. Martin, of Boston, introduced the use of the rubber bandage for the same purpose, and to-day all these expedients, or the principle involved, are in use.

During a term of service of nearly two years among the native tribes of Luzon, P. I., a region peculiar even among other tropical countries for its vast number of skin diseases, and not least varicose ulcers, the writer made use of a method which at the present time he desires to recommend as the treatment par excellence for this affliction, and is

the following: If the patient can be kept in bed, hot fomentations or emolient poultices are first applied and the limb elevated. If the patient cannot have the benefit of this procedure, as a substitute it may be packed overnight with lint saturated with petrolatum, or an oily dressing applied. After twenty-four hours of this treatment the floor of the ulcer is cleansed of all crusts of inspicated secretion, epidermis, and necrosed tissue by placing the limb in a hot water bath and gently rubbing with mops of absorbent cotton and gauze. This may be aided by a three per cent. solution of hydrogen peroxide, particularly in ulcers of an atonic base; or, it may be mopped with a solution of potassium permanganate (4 in 1000), or of bichloride of mercury (1 in 1000), especially if fœtid. The redundant granulations and marginal induration are thoroughly removed by curette and curved scissors. A second application of the oiled dressing is then made, to which some stimulation is added to overcome the tendency to necrosis of the granulations. This may be iodoform, lightly dusted over the surface, or aristol in a ten per cent. ointment; the latter is odorless and has an excellent effect on the eczematous zone, or bismuth subgallate, or ichthyol. On removing this second dressing the wound should show smooth margins, with a base of healthy granulation. It seldom has to be repeated for that effect.

Having thus secured a simple healing ulcer, the surrounding indurated tissues, the eczematous skin, and the varices must receive attention and a more perfect circulation be established. It is necessary now to keep the wound as dry as circumstances will permit. Moisture propagates eczema, plain water irritates, unguents and oily dressings retain the secretions, are a nidus for microorganisms, induce phlegmonous infiltration, and have a tendency to necrosis of the granulations. A dry dressing favors epithelial growth, insures drainage without irritation, checks proliferation of bacteria, and the formation of epithelium over granulating surfaces pro-

ceeds more quickly and easily. This is best accomplished by means of a finely levigated powder. It may have as its base talcum (magnesium silicate), impalpable and nonirritable, or zinc stearate. To this may be added acetanilide, which is desiccant and hæmostatic but not germicidal. Acetphenetidin, now inexpensive, is more analgesic. In an extensive use of acetanilide in this manner by the writer toxic symptoms have never been encountered. Its action is to somewhat retard the growth of granulations, but which may be stimulated when necessary by the addition of iodoform or aristol, which may be first dusted over the surface. Then a mixture of one third acetanilide or acetphenetidin with the base, in a generous layer, is placed over the ulcer. A pad of six or more layers of sterile gauze then covers the wound, and a

roller including the foot and extending to or above the knee joint is laid snugly, with a uniform pressure greater near the ankle than above. It should be applied while the foot is elevated to drain blood from the distended varices, aided by gentle massage.

The first dressing is not to be removed for three days. With dressing forceps and absorbent cotton cleanse the wound, maintaining its dry condition, but removing necrosed tissue and purulent secretion. Make a liberal use of the powder and reapply gauze and roller. This treatment rapidly develops healthy granulation and heals kindly with most gratifying results.

When cicatrization is completed an elastic stocking must be worn. This must be made to measure, properly fitted, and have an equal pressure, and extend from the instep to above the knee. It should not be worn next to the skin, but over a thin stocking, and when removed at night the leg must be bathed in cold water and treated to friction with a woolen cloth.

The preference for this treatment is obvious. The time of healing is much shortened, pain is lessened, the dressings are fewer, cicatrization is firmer, and the result permanent.

Dr. Edward Adams, of New York, says:

There are three essential indications to be fulfilled in order to treat a varicose ulcer with success:

- I. To provide for the absorption and disinfection of the discharges.
- 2. To improve and restore the circulation to its normal condition.
- 3. To treat the varicose veins by palliative or radical means.
- 1. Cleanliness is best obtained by washing the leg once a day with soap and hot water, shaving when necessary. Warm applications should be used, such as saturated solution of boric acid, two per cent. solution of aluminum acetate, bichloride of mercury, I to 8000; and where there is a profuse foul discharge, two per cent. solution of creolin can be employed. The stronger antiseptics are uncalled for and often give rise to eczema. The dressing should be removed every other day at first and the skin about the ulcer should be cleansed each time, the fat being removed by ether. Wet dressings are to be preferred becaues: 1, They are aseptic; 2, they permit free drainage; and 3, no new granulations are disturbed in changing the dressing. Under such treatment, in most instances, the swelling and irritation will subside and the ulcer becomes cleaner and granulating in appearance, especially if the patient is confined to bed with elevation of the limb, not only until cicatrization is complete, but also until it becomes firmly organized. This often means overcoming the objections of the patient, who is only too much inclined to stand or sit up for a few hours as soon as the condition improves and the pain ceases, or who is unable for social reasons to give the limb the necessary rest and protection. Ambulatory treatment is successful at times, but recovery is more rapid by the recumbent position. In cases where the skin will not tolerate moisture, or where the ulcer is small with very little discharge, various dusting powders may be used, such as iodoform,

dermatol, calomel, aristol, boric acid, and orthoform, either alone or in combination with starch powder. Where the ulcers are sluggish, in order to stimulate the granulations a silver nitrate stick can be used with beneficial results. Tincture of iodin, balsam of Peru, or a five per cent. solution of zinc chlorid, give at times good results. A twenty per cent. solution of boric acid petrolatum, a ten per cent. ichthyol ointment, or the red oxide of mercury, can also be used.

2. To improve the circulation. Whenever possible the patient should be kept in the recumbent position with the limb elevated, but when circumstances do not permit of such, the veins can be supported in various ways. Elastic stockings are excellent, but expensive and not durable. Bandages of rubber cloth or woven bandages rendered elastic by the character of the mesh, or Martin's plain rubber bandage, may be employed. The latter is put on smoothly but not tightly, for in walking the leg swells, so that a uniform pressure is established. As the rubber prevents evaporation, it acts like a wet compress stimulating the granulations, but often producing eczema around the ulcer. The bandage should be washed carefully at night with soap and cold water, and must be kept clean. In one patient a firm elastic stocking of vulcanized rubber will give the greatest ease and comfort, while in another the irritation caused by such a bandage will prove unsupportable. The cotton web bandage in such cases is a good substitute and is found very serviceable. The essential feature of ambulatory treatment is a good bandage to prevent congestion, and, to my mind, Unna's bandage is the ideal one. The paste necessary for the bandage is prepared as follows: First dissolve four parts of the best gelatin in ten parts of water by means of a hot water bath. While the fluid is hot add ten parts of glycerin and four parts of powdered white oxide of zinc; stir energetically until the mixture is cold. Always melt the paste before using by placing the receptacle in a hot water bath, as it must be applied while hot, solidifying on cooling and resembling rubber. The limb should be carefully cleansed with soap and water, then alcohol, and must be thoroughly dried before the paste can be used. After heating, it is brushed on from knee to foot and a gauze bandage is applied, cutting it frequently instead of reversing, in order to prevent wrinkles; then another layer of paste and another layer of bandage, until a support of several thicknesses is obtained. If the ulcer is secreting freely, a window can be provided or the dressing changed. After the last application of the paste some nonabsorbent cotton can be applied, giving the bandage a mole skin finish; or some talcum powder can be used, giving the appearance of a plaster of Paris dressing. The bandage can be worn anywhere from two to eight weeks.

3. Palliative and radical means. Another method of treating these ulcers is by means of strips of adhesive plaster, an inch in width, applied shinglewise, directly over the ulcer and reaching some distance above and below it. Curetting the ulcer, x ray treatment, or skin grafting may be resorted to in healing this condition; and of the latter, Thiersch's, Krause's, or Reverdin's method can be employed.

The radical method of treating varicose ulcers after healing, especially when caused by enlarged veins, is by operative interference. The operations chiefly performed are those of Trendelenburg, Schede, or Mayo. Trendelenburg's operation is the ligation and extirpation of the internal saphenous vein by a longitudinal or transverse incision at the upper and middle thirds of the thigh, about one and one half inches in length, along the course of the vein. In suitable cases the relief follows quickly, the wound healing by primary union in about ten days. The operation, however, is not without its dangers, for, in spite of complete asepsis, thrombosis of the proximal stump and embolism have occurred, giving a warning against operating without a strict indication.

Schede's operation consists of a circular incision at the upper and middle third of the leg, encircling the limb, and removing all the veins to the deep fasia.

Mayo's operation is by the subcutaneous method of dissection. He exposes the vein high up, divides it, and passes over the lower portion an instrument which resembles a dull wire curette. This can be wormed along beneath the skin, dissecting out the vein until it breaks, usually three to four inches from the first exposure. The instrument is reintroduced and the procedure followed as above.

After an operation for varicose veins, the leg should be placed in a Volkmann splint and the patient should remain in bed for three weeks. Massage with active and passive motion should be gradual, and no active work should be attempted until three weeks more have elapsed. A supporting bandage should also be worn at least for six months after an operation of this character.

The chief complication occurring with varicose ulcers is phlebitis. Rest, with elevation of the limb and a wet dressing, must be insisted upon; however, if the case is seen early enough, an operation can be performed with excision of the thrombus.

Constitutional treatment should be given when necessary, and tonics, like iron, strychnine, and arsenic, are advisable. Constipation and other ætiological factors should be treated accordingly.

Dr. Frederic H. Wilson, of New York, remarks:

The varicose ulcer. What a series of pictures is conjured to the brain of the clinician by the mere mention of that name. To those of us who have spent hours in a dispensary room (and who of us has not), the memory comes of an endless line of stout "cook ladies," buxom mothers of from eight to ten children, and beery, red faced motormen, each presenting a mammoth calf of rainbow hue, bearing its erosion and wrapped up in its dirt begrimed bandage. How they sit on the bench outside the door and proudly compare notes on how many years they have been coming to the clinic for this same ulcer, and what tides of students and nurses have ebbed and flowed past them, learning to put on leg bandages and, incidentally, to be sure, treating (?) the ulcer at the same time. As one of the veterans put it, "Sure, I don't know phwat they'd hov done in this horsepittle without my leg for the students to practise on, these seven years.

And right there, in that seriocomic remark, is a caustic commentary on the average treatment of varicose ulcer. Do we not too frequently regard it more as a nuisance than a disease, and pass it by with the application of a little ointment and a careless bandage? And yet I think that, taken seriously, it forms as interesting and instructive a feature of our clinic work as any other one condition we meet. Far from being something to be handed over to the nurse or student, on the contrary it often becomes a "foeman worthy of our steel," and many are the clinicians who have felt themselves baffled by its obstinacy. Select the worst one in your dispensary, gentlemen of the clinics, and make up your mind that you are going to conquer it, and then see if you have not found a hard

proposition.

How are we going to begin? In the first place, on true surgical principles, and treat it aseptically. Use sterile instruments and dressings, touch it with clean hands, and impress on the patient the importance of guarding it from dirt, and you will have gone a long way toward the desired result. The varicose ulcer, by its nature and its location, collects unto itself large quantities of dirt, and the abolishment of this is of first importance. Then, having got it clean and kept it so, begin its cure. I believe in that "elixir of life," hydrogen peroxide, for a first application. Flood the ulcer with that and do away with the ichthyol, the boric acid ointment, and the oil. Gently dry off the peroxide and prepare some narrow strips of sterile adhesive plaster. Apply these crosswise right across the ulcer, even though they do not seem to be doing any good in the way of bringing the edges together. Put on some fluffed gauze and apply a bandage from toes to knee. When you dress it next time, you will find that the edges under the plaster have become a little turned in and drawn toward each other, and that is another big step toward cure. You will find a more or less abundant secretion, yellow, foul, and noxious. This is not a sign of wrong treatment; on the contrary, it is the natural result of the strapping. Again flood the ulcer with peroxide, but do not remove the straps unless they are very loose. Then apply a very small amount of balsam of Peru and castor oil, equal parts, cover with sterile gauze, and rebandage. Use the balsam not oftener than once a week, in the meantime keeping up the peroxide washing and adhesive dressings. The strapping will gradually make its effect noticeable, and the ulcerated area will become smaller. Do not expect very rapid improvement. The condition has probably been present for years, everything is against its restitution to the normal, and the progress of repair will be painfully slow. But keep at it and the result will justify the trouble. I do not mean to say that the treatment just outlined will cure every case of varicose ulcer you meet, but I do believe it to be the sanest and most valuable method we can use, and certainly a reason can be given for every part of it, which is more than can be said for the ointments and oils so indiscriminately applied in most dispensaries.

A word as to that most important adjunct, the bandage. It should be of muslin, of course, and pref-

erably about three inches wide. The large calves to which they are applied offer strong inducements to put on the beautiful "picture bandages" of the textbooks, with their spiral reverses, etc. But the patient is fortunate indeed if this kind of bandage holds until home is reached, when it must be put on again, this time usually in a way that makes the leg resemble a bundle tied up with cord. Beauty should be a very secondary consideration here. The object of the bandage is to hold the dressing in place, and especially to afford firm, even pressure, not too tight, on the veins of the leg until the next time the ulcer is dressed. And if it loosens or comes off in that time the whole treatment is worthless, and that much time is lost. I have found the so called "bellevue walking bandage" to be the most reliable for these cases. It certainly is not a thing of beauty, but it is a joy forever to the doctor and the patient, and that is what counts. I anchor it at the ankle, then go down to the toes and work back to the ankle. From there it is taken with one large spiral all the way up to the knee and the calf, then covered in with figure of eight turns. The bandage is finished with simple circular turns around the leg above the calf and fastened with a strip of adhesive plaster. Never pin it and especially never split and tie it, for obvious reasons. I have repeatedly seen this bandage keep its position for a week, the patient going about her work as usual.

In conclusion, I want to advocate strongly the need for establishing, in our large city hospitals, wards for the treatment solely of these cases. There are thousands of men and women pursuing their work in our cities, suffering the while from this chronic condition, which is so difficult of cure unless they are confined to bed, and yet scarcely a hospital will admit them, because of the triviality of their ailment. Could they receive hospital care and nursing for a short time the results would be plainly evident, and, moreover, time and space now taken by them in the dispensaries could be saved for the treatment of more serious cases, at present slighted,

of necessity.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

The Sixth Report of the Cancer Research Fund.—Treatment in the Cancer Hospital.—The Care of Mental Defectives.—A Case of Alleged Malpractice.—The Franco-British Exhibition.—An Audacious Advertisement.

LONDON, August 25, 1008.

The Sixth Annual Report of the Imperial Cancer Research Fund has just been published, and contains much interesting matter. During the year there has been a very great increase in the scope and number of investigations conducted in the laboratories, and these have been made possible only by the largely increased accommodations liberally placed at the disposal of the fund by the Committee of Management of the Royal College of Physicians of London and the Royal College of Surgeons of England. The laboratories have also been visit-

ed by a large number of distinguished scientific men from America, France, Germany, and other coun-Dr. Edgar Gierke, assistant to Professor Aschoff, of the University of Freiburg, worked in the laboratories for six months, and since his return to Germany he has been appointed director of the Pathological Institute at Carlsruhe, and a paper by him, founded on his work in the Imperial Cancer Research Fund laboratories, will appear in the scientific reports of the fund. Dr. Murray deals with spontaneous cancer in mice, on which subject he has been occupied four years. He has also been working with a transplantable squamous celled carcinoma. At the time of the second scientific report the value of Jensen's tumor was not generally recognized, and not a few even disputed its cancerous nature. Now, the investigators working under the Imperial Cancer Research Fund have obtained a large number of inoculable tumors, and all have admitted the really cancerous nature of the growths. The value of trypsin as an empirical remedy in cancer has been investigated, but it was found that the benefits alleged for the treatment by this ferment had not been confirmed. It has been suggested that an international committee on cancer research should be established, with its headquarters in Berlin, and the general superintendent, Dr. E. F. Bashford, has been invited to join it, but the Executive Committee of the Imperial Cancer Research Fund considers that more advantage is to be gained by encouraging an active interchange of views and of material between the workers in the laboratories in the various countries.

Investigations on cancer are also being made from the clinical standpoint in a special department of the Middlesex Hospital and in the Cancer Hospital. At the latter institution there are 110 beds available for the treatment of cancer cases. A notable feature at this hospital is that any remedy brought forward as a cure for cancer is impartially investigated and fully tested. Among the methods which have been tried lately are the trypsin and amylopsin treatment, the treatment by Colev's fluid, that by Doyen's serum, the various forms of electrical treatment, x rays, high frequency currents, and also the treatment by violet rays. tunately, none of these methods have fulfilled the expectations of those who introduced them, although some of them have their special uses in alleviating the various forms of cancer. Dr. Paine, who is in charge of the pathological laboratory at the Cancer Hospital, considers that all cancer research should be conducted in close conjunction with the observation of patients, and for this reason he thinks that this institution offers many advantages as a centre of cancer research, seeing that its wards always contain upwards of a hundred cases of cancer and allied diseases.

The Royal Commission which was appointed in 1904 to consider the question of the care and control of the feeble minded has just issued its report. The commission held its sittings in London, Edinburgh, and Dublin, five of the members visited the United States, and various members from time to time visited institutions in Great Britain and on the Continent. In all, 248 witnesses were examined. From all these sources the commission has amassed

and considered an enormous bulk of information, which will be published in eight large volumes. Only the last of these, containing the whole conclusions and recommendations of the commissioners, has been issued. The report points out the very grave state of affairs at present existing. The problem of the mentally deficient has not met with the attention it deserves, and as a result of their inquiries the commissioners recommend some far reaching alterations. One section of the report deals with criminal lunatics and is in strong support of Lombroso's doctrines. The commissioners found that large numbers of persons were annually committed to prisons for repeated offenses, which, being the manifestations of a permanent defect of the mind, there is no hope of repressing, much less stopping, by short punitive sentences; consequently they make the recommendation that all courts of justice, including courts of summary jurisdiction, should have the power to order the detention of a convicted mentally defective person in a suitable institution, instead of pronouncing a sentence of imprisonment, and they should be detained there until the approval of the Secretary of State for their discharge has been obtained. Another important section deals with mental defect and inebriety.

The commissioners found that from sixty to seventy per cent, of the habitual inebriates dealt with under the acts were mentally defective. In harmony with this view, they arrived at the conclusion that mentally defective inebriates should be dealt with in the same way as other mentally defective persons, and that all processes for the detention of the insane should also apply to the mentally defective inebriates. The whole document is of extreme interest and importance, and if the recommendations of the commissioners were adopted, it is not too much to say that there would be a vast improvement on the present system. In this connection it is very interesting to note that in 1891 there was established in Belgium a system of periodical inspection of prisons by alienists, giving recognition to the view held by the principal alienists and criminologists that a large proportion of the persons undergoing legal detention were insane. Many distinguished psychologists in Great Britain are enthusiastic advocates of the Belgian system and recommend its introduction into this country.

An interesting case of alleged malpractice was tried at Greenock, in Scotland, recently. woman on whose behalf the action was brought was a primipara, and it was alleged that the medical attendant had failed to take the usual and proper antiseptic precautions at the birth. The doctor claimed £25 for professional attendance, and the defendant put in a counter claim for £89, being fees and expenses incurred owing to the negligence of the plaintiff. The sheriff pointed out that the implied condition of the contract between a medical man and a patient was the exercise of average skill, although it was not always easy to determine the standard of such skill. Summarizing the charge of negligence, it amounted to this, namely, that the forceps, needle, sutures, and scissors used at the confinement were not sterilized, that the birth was unduly hurried by the use of the forceps, that the cervix was badly torn and the perinæum severely

lacerated, and that the medical man neglected his patient by leaving her to go on a holiday when she was in a critical condition. With regard to sterilization, the sheriff found it was not usual to effect this by boiling in a private house. With regard to the use of the forceps, that did not, in his opinion, constitute gross negligence. There was no medical evidence as to the tear in the cervix, while the rent in the perinæum had nothing to do with the patient's condition, for it healed up aseptically. As to the cause of the illness, he was quite unable to hold the view that it was due to unsterilized instruments. The claim for fees was allowed with costs, and the counterclaim dismissed. This case is of interest as disclosing to the general practitioner certain professional risks to which he is exposed.

The London Hospital has a very interesting exhibit at the Franco-British Exhibition, one of the notable features being a varied assortment of dainty dishes demonstrating invalid cooking. One of the results of the exhibit is that a large number of visitors have inspected the hospital itself during the last few months. Among them many visitors from France have taken advantage of the special permits to view the London Hospital, which can be obtained from the hospital stall at the exhibition. For the benefit of the foreign visitors several special "tours" round the hospital have been arranged for large parties with great success. This medical entente cordiale was further demonstrated by the election of Dr. Lucas-Championnière, consulting surgeon to the Hôtel Dieu, Paris, and senior surgeon at the Beaujon Hospital, to the honorary fellowship of the Royal College of Surgeons of England last Tuesday.

A certain quack institute in England has adopted most audacious methods of advertising. Some of the most eminent medical men in England, in America, and on the Continent are given in a list, and they are stated to approve of the treatment at the institute. The Queen and President Roosevelt are also dragged in. These names are apparently introduced in order to persuade a simple public that the treatment at this institute receives the sanction, approval, or praise of these distinguished individuals. This advertisement has appeared in most of the daily papers, occupying half a page. It is surprising that good class newspapers should lend themselves to such unblushing effrontery and auda-

cious exploitation.

Therapeutical Motes.

The Hypnotics of the Newer Materia Medica. In a recent number of the Pharmascutische Zeitung (No. 33, 1908) there appears a review of two papers which were read before the Congress of Internal Medicine at Berlin, dealing with the newer somnifacients, and the review is abstracted in the American Druggist for August 24, 1908. H. Thoms took up Fraenkel's classification of these substances, which divides them into three groups. The first another which depend for their action on the halogen content the ground upon the presence of an

alkyl, and the third upon an aldehyde or ketone. This grouping is, as Thoms remarks, not strictly applicable, as certain substances are of such combinations as to be classed in more than one of these groups. It forms, however, a working chemical scheme by which the hypnotics may be studied. The first group may be subdivided into two further divisions: (a) the chloral hydrate class, containing also chloralformamide, chloralose, dormiol, hypnal and isopral; and (b) halogen containing acid amides, such as veronal (diethylbromacetamide) and bromural (alphamonobromisovalerianylurate). The second group is also subdivided into (a) alcohols (ethylalcohol and amylene hydrate); (b) methane derivatives of sulphone, as sulphonal, trional, tetronal, and (c) substituted carbamic amides, the derivatives of carbamic acid, as urethane and hedonal (methylpropylcarbinolurethane), and derivatives of urea, as veronal and proponal. The third group, aldehydes and ketones, includes acetaldehyde, acetone (dimethylketone), propion (diethylketone), paraldehyde, and hypnone (acetophenone). In discussing the pharmacological action of these chemical groups, Thoms draws attention to the fact that the halogen compounds (group 1) have been shown to exert a depressing action upon the heart and respiratory system, that the methane derivatives of sulphone, such as sulphonal and trional, have not an innocent record, and finally that evidence is accumulating that veronal and proponal are sometimes injurious, particularly when administered in large doses. He concludes that the ideal hypnotic is yet to be discovered. Ziehen, who treated the subject from the clinical standpoint, stated that the subcutaneous use of these agents had been up to the present unsuccessful, with the exception of the veronallike substances, which could be used without danger, especially in nervous diseases. He advised using a suitable combination of drugs and frequent changes. The ideal procedure, according to Ziehen, was never to prescribe one hypnotic, but always two, and change the proportion of one to the other at intervals. This is naturally not always possible in practice but is a valuable principle to bear in mind.

The Treatment of Chronic Gastritis.—This is the subject of a study by Crämer, who recommends the following bitter tonics to increase the appetite and the gastric secretion. First in order of effectiveness he places condurango, followed by gentian, calumba, quassia, nux vomica, wormwood, tincture of cinchona, and tincture of orange peel, in this order, given in appropriate combinations. Giving preference to condurango he orders the following:

When there is a feeling of pain in the stomach, the gastralgia is overcome by the following mix-

Timeture of helladonna,
Timeture of walerian,
Timeture of valerian,
Al et Sig Twenty drops to be taken in peppermut water two or three times daily.

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PLAGUE INVESTIGATIONS IN INDIA.

The May number of the Journal of Hygiene constitutes a fourth extra plague number. It contains further reports of the work of the investigators who have been studying the problems connected with the present epidemic of bubonic plague, under the auspices of the Advisory Committee. The former plague numbers have been commented upon in these columns; the present number begins with the publication of the translation of a paper written in 1902-'03 and presented as a thesis for the degree of doctor of medicine to the University of St. Petersburg in 1904. This paper, which is entitled The Part Played by Insects in the Epidemiology of Plague, written by Dr. D. T. Verbitski, goes over the ground subsequently covered by the workers of the Advisory Committee. The next report is by Dr. Bannerman and Dr. Kápadiâ, on experiments to discover whether the common domestic animals of India are affected with plague. Pigs, calves, fowls, turkeys, geese, and ducks were fed with the flesh of rats that had died of plague, but in no instance was plague contracted by the animals. These results entirely reverse those obtained in Hongkong in 1902 by Simpson. The suggestion is made in the report that Dr. Simpson's animals were suffering with an infection with the hog cholera bacillus.

The next paper, which is anonymous, details additional observations on the septicæmia of human plague and gives an account of experiments on the infectivity of the excreta. It is found that a severe

septicæmia may be present at a comparatively early stage of the disease, and that it is surely present for a number of hours before death. This septicæmia increases, as a rule, as death approaches, and is in direct relation to the acuteness of the illness. It may be progressive, diminishing, irregular, or fluctuating. Virulent Bacillus pestis may be excreted in the urine of patients with plague; but the urine and the fæces of such patients are not capable of transmitting plague in the natural way. After a paper on the bionomics of fleas, a description of the mechanism by means of which the flea clears itself of plague bacilli appears. The investigators of this subject found that a clearing process, which is more active at 90° F., existed, which is probably of a phagocytic nature. The seasonal prevalence of plague was studied in six different places in India, places widely separated and subject to different climatic conditions. It was found that the rat epizootic and the human epidemic depended upon a suitable mean temperature, somewhat below 85° F., and in general over 70° F.; a sufficient number of susceptible rats; and a sufficient number of rat fleas. A fall of the rat epizootic, and consequently of the human epidemic, is determined by a high mean temperature. above 85° F., a diminution in the total number of rats, an increase in the proportion of immune to susceptible animals, and a diminution in the number of rat flees. The number ends with a paper on the distinction of Bacillus pestis from certain allied organisms, such as Bacillus pseudotuberculosis rodentium, bacilli of the hæmorrhagic septicæmia group, and organisms of the Bacillus enteritidis group.

DEATH FROM OLD AGE.

All multicellular organisms, plants and animals, have only a limited period of life, some longer, some shorter, but all must die. Men can reach an age of a hundred or a few more years, but after the vigor of full manhood man's faculties decline, he becomes a senile person, of no more use to society, and finally dies.

But why death, why must all organisms die, including man? And why do the different species of organisms have different limitations to the period of life? These questions are as old as thinking man himself; they have often been discussed; much has been written about them; and many investigations have been and will be made without finding even a partially satisfactory answer. But every new effort to solve this riddle is of great attraction.

Dr. Hugo Ribbert, professor of pathology in the University of Bonn, has written a pamphlet on the subject. He does not produce any new theories or bring us nearer to our goal, but he reviews our pres-

ent knowledge thoroughly and gives us the different theories in a very scientific manner, giving a résumé which is very interesting to read. It is peculiar that at about the same time there appeared in Germany another book on this subject, entitled Todes Prognosen, oder Wann stirbt der Mensch? by A. A. Michaeles, but in such a contrast to Dr. Ribbert's essay, so unscientific, that one can hardly understand how any sane man could write or publish such nonsense.

But, to come back to Professor Ribbert's book. He reminds us that all the cells of our body are capable of regeneration and rejuvenation, with the exception of the ganglion cells of our central nervous system and of the sympathetic and the germ cells, which latter cells have nothing to do with the question of death. These general bodily cells are in a perpetually regenerating and rejuvenating condition, while, according to our present knowledge, the ganglion cells remain the same from earliest youth, whether they belong to a brain for eighty, ninety, or a hundred years. They are always the same elements. Sooner or later it will be found that the general bodily cells do not possess their former vitality; there will appear changes in their development, their life, their multiplication, their protoplasm, and their nuclei, and, finally, their action, changes which appear from within, resulting in the end in atrophy of the several organs. But for a longer or a shorter period these cells possess the faculty of being rejuvenated, while the ganglion cells lack this power. This can also be demonstrated by transplantation; it is possible to transplant, not only parts of organs, but also entire organs, and these transplanted structures will live in their new surroundings; but not so with the brain or parts of the brain, for transplantation of brain matter is always unsuccessful. The heart possesses such rejuvenating cells, and, next to the brain, if is the most important organ of the body. The ganglion cells, not having the power of rejuvenation, will be the first cells to cease to be able to perform their functions properly. This shows that the brain, or rather the central nervous system, is the first organ which, in natural death, begins the process of death, and, by its ceasing to live, is the prime cause of natural death, proved also by the appearance of natural death, the increasing psychic debility, the gradually falling asleep, etc., while the other organs, especially the heart, retain their functions for a for or time, until they also become impaired and

This is the great distinguishing feature between physiological and pathological death. In pathological death the general cells cease to possess their properties to prove the content of t

teria or toxines), and the heart will cease to perform its function, while physiological death is mostly the result of failure of the brain (central nervous system).

Natural death in senility is therefore a sequence of anatomical and, with them, functional changes of the component factors of the body, partly the cells, partly the intermediate substances. These changes in physiological death are not the result of external influences (too much or improper food, disease producing influences, such as toxines, according to Metchnikoff's theory), but they are the necessary sequelæ of the chemical and physical expiration of the phenomena of life. In the cells are formed clinkers, so to speak, deposits which are a product of metabolism, which produce atrophy of the protoplasm. The intermediate substances, which in the real sense of the word are not living matter, commence to gradually relax in their more or less mechanical functions, thus damaging the blood circulation. This fact, again, is of detriment to the cells, the atrophy of which is then increased. Diseases of senility, especially arteriosclerosis, will favor the accomplishment of the conditions of old age, but they do not belong as such to senility; they are only complications. Old age as such is free from diseased conditions. Of the cells of the body, the ganglion cells are especially responsible for natural death in old age. Physiological death is therefore more or less a brain death.

THE UNTOWARD EFFECTS OF COR-ROSIVE SUBLIMATE.

Pursuing his very practical consideration of the undesirable effects of various surgical antiseptics, which we have mentioned in previous issues, M. Salva Mercadé (Archives générales de médecine, July) takes up the subject of the occasional toxic action of corrosive sublimate. A somewhat prolonged application of a solution of mercuric chloride to the skin, he remarks, produces thickening and induration of the integument. In rare instances a faint erythema results, and in some cases the erythematous area is covered with vesicles.

It is uncommon for the absorption of corrosive sublimate from a traumatic surface to be carried to the extent of producing systemic poisoning. Brun, however, gives the history of a case in which signs of toxic action appeared on the sixth day after an operation by Bakelman for prolapse of the rectum and vagina, the patient having been treated with douches and lotions of a one to one thousand solution. The woman felt a burning sensation in the mouth, and salivation and gingivitis were noted.

These symptoms subsided in three days. Longuet (cited in Zimmer's *Thèse de Paris*, 1907) observed a metallic taste in the mouth, with ptyalism, after five minutes' immersion of the hands in a corrosive sublimate solution. Mercadé does not inform us of the strength of the solution. Possibly idiosyncrasy or self suggestion had something to do with producing the results mentioned.

In the grave cases of general poisoning the whole digestive canal suffers, and we observe salivation, sponginess and ulceration of the gums, gangrenous patches, vomiting, colic, and diarrhœa. The pulse is small, and there is albumin in the urine. Often, too, there are extensive eruptions. Such cases have been recorded by Maurer and Reichel. Ruggi, of Bologna, saw a woman die rapidly in collapse after an operation for a fibrous tumor; by inadvertence the compresses had been soaked in a solution of corrosive sublimate. But such occurrences are rare. As a general thing, untoward results are produced only when one of the natural cavities of the body is irrigated with the solution or when it is used in ragged wounds, so that some of the liquid is retained. In all instances the poison must be eliminated as soon as possible by mean of diuretics, the stomatitis may be combated with potassium chlorate, and collapse should be met with injections of ether and caffeine.

THE DIRTY STREETS OF PARIS.

Here in New York we are accustomed to the reproach of neglecting to keep the streets clean. The charge is not undeserved, and the tu quoque retort does not relieve us of blame. Nevertheless, it is consolatory to find distinguished Parisian authority for the statement that the French capital is one of the dirtiest cities in the world. The Progrès médical, in its issue for September 12th, so declares, and it finds one of the great causes of the uncleanliness of the streets to be the extent to which waste paper is thrown upon the pavements. Handbills, it appears, are distributed to pedestrians in great numbers, and they are cast aside in almost total disregard of the baskets provided in the parks and squares as receptacles of waste paper. Almost every inhabitant, says our contemporary, takes a newspaper and reads it at home, and many papers are read in the streets also, only to be cast to the ground when they have been read.

We have long been accustomed to this broadcast scattering of newspapers in the streets of New York. It was one of the difficulties with which the late Colonel Waring had to contend. His fertility in resources was severely taxed by the carelessness of our people in the matter of waste paper, but he met the problem with a device which is still in

advantageous use. The New Yorker without his newspaper is like the *Bayern ohne Bier*. His ways of making himself a nuisance with the aid of his paper are multifarious, but the final disposition which he makes of it leads now to far less trouble than it did formerly, thanks to Colonel Waring's device, to the boxes established for the benefit of hospital inmates, and to the avidity with which cast off newspapers are gathered up by the employees on public conveyances.

But it is not littering with paper only that interferes with the cleanliness of the Paris streets, according to our contemporary. Too many of the municipal street cleaners, it declares, are either superannuated, infirm, or lazy, more industrious at tippling than at plying the broom, and the result is that the streets are dirty. Nevertheless, says the Progrès, extravagant sums of money are spent by the city of Paris for the purpose of cleaning the streets. The personnel of the street cleaning force, it suggests, ought to be reformed. Younger men should be employed, and their ambition should be stimulated by the prospect of promotion as the reward of good work. Our contemporary points to Berlin as a capital in which excellent work is done in the matter of street cleaning. It is to be feared that New York is not yet worthy of being pointed out as a shining example of cleanliness.

THE PUBLIC HEALTH AND MARINE HOS-PITAL SERVICE.

We have always contended that confirmation and extension of the powers of this bureau were much to be preferred to any other means of nationalizing the sanitary activities of the country. We are glad to see that the same view has been taken by the American Public Health Association, as was shown by a resolution adopted at its recent Winnipeg meeting, for the text of which we refer our readers to the Toronto letter published in our last issue. The bureau has done excellent service in the past, and we believe that in its organization is to be found the best means of performing the sanitary service, both foreign and domestic, that the country needs.

STRIÆ ATROPHICÆ FROM VARIOUS CAUSES.

In the September number of the *Practitioner Dr.* F. Craven Moore records a case of striæ atrophicæ of the back discovered on the fifth day of convalescence from double pleuropneumonia in a lad, nineteen years old. They were transverse in direction and were situated in the dorsolumbar region of

each side, corresponding approximately to the course of the posterior branches of those dorsal nerves which would be related to the diseased areas. He has found in literature the record of only one other case following pneumonia. He finds that atrophic stripes are occasionally met with after typhoid fever, over the patellæ, on the outer sides of the lower limbs, and occasionally on the abdomen. They have been observed, too, after appendicular inflammation, after scarlet fever, in connection with malignant disease of the pleura and peritonæum, and in young adults without apparent cause. He suggests that there must be causes for their appearance which are not of a mechanical nature.

Rems Atems.

Changes of Address.—Dr. William S. Wray, from 114 South Eighteenth Street, to 2007 Chestnut Street, Philadei-

Personal.—Dr. Samuel M. Brickner has returned to New York, and resumed practice at 130 West Eighty-fifth

The Medicochirurgical College of Philadelphia inaugurated its session for 1908-1909 on Monday, September 28th. Dr. L. Webster Fox delivered the address.

A Bronze Bust to Dr. Byron Robinson.-Dr. Byron

A Bronze Bust to Dr. Byron Robinson.—Dr. Byron Robinson's students are planning to erect a bronze bust to him. Dr. Benjamin Orndorff, 2277 Wilcox Avenue, Chicago, has the matter in charge.

St. Joseph's Hospital's New Isolation Ward.—The new isolation ward of St. Joseph's Hospital, Philadelphia, was dedicated on Thursday, September 24th. The ward will be known as St. Edmund's ward, and will be devoted on the study and treatment of containing diseases. entirely to the study and treatment of contagious diseases.

Contagious Diseases in Chicago.-During the week ending September 12, 1908, there were reported to the Department of Health 228 cases of contagious diseases, as follows: Diphtheria, 54 cases; scarlet fever, 70 cases; measles, 6 cases; chickenpox, 3 cases; pneumonia, 8 cases; whooping cough, 16 cases; tuberculosis, 28 cases; others, of minor

The Lewis County, N. Y., Medical Society.—A meeting of this society was held in Lowville, N. Y., on September 14th. There was a large attendance of members, and many visitors were present. The principal feature of the programme was a paper on Appendicitis, read by Dr. G. D. Gregor, of Watertown. At the close of the meeting a banquet was served at the Kellogg House.

The St. Tammany Parish Medical Society, New Or-

leans.—This society was reorganized recently, and officers elected as follows: President, Dr. G. R. Tolson; vice president, Dr. R. B. Paine; secretary, Dr. J. F. Pigott; treasurer, Dr. P. R. Outlaw. Every physician in the parish is expected to join the association, which meets once a mooth, on the birst Wednesday of the month

Richmond, Va., Academy of Medicine and Surgery. At the regular monthly meeting of this academy, which was held on Tuesday, September 22d, Dr. Wilhelm Karo, of Berlin, Germany, read a paper on Tuberculosis of the Bladder. In the afternoon a clinic was held at the Memorial Hospital, at which Dr. Karo performed a suprapubic

prostatectomy under spinal anæsthesia.
Union of Old German Students in America.—The Philadelphia branch of this organization held a reception ciety on the evening of Wednesday, September 23d, in honor of the many celebrated physicians from foreign countries who have come to the United States to attend the Countries who have come to the United States to attend the International Congress on Tuberculosis. Among the invited guests were Dr. Robert Koch, Dr. v. Leube, Dr. Pannwitz, Dr. Helm, Dr. v. Pirquet, Dr. v. Schroetter, Dr. Rumpf, Dr. Kirchner, Dr. Spengler, Dr. Calmette, Dr. Maragliano, and Dr. Fibiger.

The International Association for the Investigation of Cancer.-Professor von Leyden, of Berlin, has been of Cancer.—Professor von Leyden, of Berlin, has been elected homorary president of this association, which was established in Berlin in May. Professor von Czerny, of Heidelberg, has been elected president, and the vice-presidents of the association are Professor Pierre Marie, of Paris, and Professor Fibiger, of Copenhagen.

The Medical Corps of the Army.—The recent examination for first lieutenants in the Medical Corps of the Illied States Army resulted in the annoniment of themps.

United States Army resulted in the appointment of twenty successful candidates. Of the one hundred and fifty candidates who made application, only eighty-three qualified in the physical examination. The young men who passed the examination will enter on a course of instruction at the Army Medical School on October 1st.

The Northern Medical Association of Philadelphia .-A stated meeting of this organization was held on Friday A stated fleeting of this organization was field on Friday evening. September 25th. The programme included the following papers: Ætiology and Treatment of Sterility in the Female, by Dr. W. E. Parker; Ætiology and Treatment of Sterility in the Male, by Dr. Orville Horwitz. The discussion was opened by Dr. Charles P. Noble, Dr. Brooke M. Ap. 3h and Dr. Orville Horwitz

The Mortality of New Orleans .- During the month of August, 1908, there were reported to the Board of Health of the City of New Orleans 504 deaths from all causes, 301 white and 203 colored. The annual death rate in 1,000 of population was 14.00 for the white population, 26.19 for the colored, and 17.23 for the total white and colored. There were 58 still births, 30 males and 28 fecolored. There were 58 still births, 30 mars males. The total infant mortality was 81; under one year of age, 70; between one and two years, 11.

following apointments have been made to the staff of the Division of Pharmacology of the Hygienic Laboratory: Dr. W. H. Schultz, instructor in physiology and pharmacology at the University of Missouri; Dr. Worth Hale, instructor in pharmacology at the University of Michigan; Mr. M. I. Wilbert, of the German Hospital, Philadelphia; and Dr. M. G. Motter, professor of physiology at the Georgetown University

Medical Society of the County of Kings, N. Y.—A meeting of the Section in Padiatrics was held in the Library Building, 1313 Bedford Avenue, Brooklyn, on Friday brary Building, 1313 Bedford Avenue, Brooklytt, on Friday evening, September 18th. The programme included the report of a case of congenital heart, presented by Dr. F. B. Van Wart, and a paper entitled The Blood in Infancy and Childhood, by Dr. A. D. Smith. The officers of this section are as follows: Dr. Archibald D. Smith, chairman; vice chairman, Dr. John W. Parrish; secretary and treasurer, Dr. William H. Woglom.

The Hartford, Conn., Medical Society.-The Surgical Section of this society will meet on Monday evening, September 28th. Dr. A. J. Wolff will report an unusual case of abdominal pregnancy. Dr. Oliver C. Smith will present instructive specimens from recent operations. Dr. H. G. Howe will report a case of dislocation of the shoulder with double fracture of the humerus. Observations of interest noted in foreign hospitals will be the subject of papers to be read by Dr. William Porter, Jr., Dr. W. G. Murphy, Dr. J. W. Felty, and Dr. J. B. Boucher.

Society Meetings for the Coming Week:
MONDAY, September 28th.—Medical Society of the County
of New York.

THURSDAY, October 1st.—New York Academy of Medicine; Dansville, N. Y., Medical Association.

FRIDAY, October 2d.—New York Academy of Medicine (Section in Surgery; New York Microscopical Society; Gynacological Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society, New York; Practitioners' ciety of New York.

St. Agnes's Hospital for Crippled and Atypical Children.—The Sisters of St. Francis have established a hospital at White Plains, N. Y., for the treatment of cripples and mental defectives. The property, which was formerly the Westchester County Temporary Home, conformerly the westchester County Temporary Home, consists of sixteen acres, with modern buildings well adapted for hospital purposes. It will have accommodations for one hundred and fifty patients, and will be supported by volutary contributions. Applications for admission may be made to Dr. John Carling, 120 Fast Thirty fourth Street, New York.

Scientific Society Meetings in Philadelphia for the Week Ending October 3, 1908:

Monday, September 28th,—Mineralogical and Geological Section, Academy of Natural Sciences. Section,

THURSDAY, October 1st.—Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting. Franklin Institute; Germantown Branch, Philadelphia County Medical Society.

FRIDAY, October 2d.—American Philosophical Society; Kensington Branch, Philadelphia County Medical So-

ciety.

The Medical Society of the State of Pennsylvania held its annual meeting in Cambridge Springs, Pa., on Monday, Tuesday, Wednesday, and Thursday, September 14th to 17th. The following officers were elected: President, Dr. George W. Wagoner, of Johnstown; vice presidents, Dr. James I. Johnson, of Pittsburgh; Dr. Glennis E. Humphrey, of Cambridge Springs; Dr. Howell M. Gates, of Scranton, and Dr. Samuel Z. Shoate, of Harrisburg; secretary, Dr. Cyrus L. Stevens, of Athens; assistant secretary, Dr. Theodore B. Appel, of Lancaster; treasurer, Dr. C. M. Harris, of Johnstown; trustees, Dr. George W. Guthrie, of Wilkesbarre, Dr. George W. Drutt, of Wilkesbarre, Dr. Georger D. Nutt, of Williams-Guthrie, of Wilkesbarre, Dr. George D. Nutt, of Williamsport, and Dr. J. H. Wilson, of Beaver. Bedford Springs was selected as the next place of meeting.

was selected as the next place of meeting.

Philadelphia County Medical Society.—The Central Branch of this society held a meeting on Wednesday evening, September 9th. The programme consisted of a "symposium" on exophthalmic goitre. Papers on the subject were read by Dr. Edward J. G. Beardsley, Dr. George A. Müller, Dr. William Zentmayer, Dr. W. Wayne Babcock, Dr. George Pfahler, and Dr. Robert N. Willson. At a meeting, bald on September, and the avening way desired. meeting held on September 23d the evening was devoted to a consideration of the question of the division of the fee. Dr. John H. Gibbon read a paper dealing with the question from the viewpoint of the surgeon. The internquestion from the viewpoint of the surgeon. The internist's point of view was the subject of a paper by Dr. Solomon Solis-Cohen, and the general practitioner's opinion of the evil was discussed in a paper by Dr. M. H. Fussell,

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statement of new cases and deaths reported for the two weeks ending Sep-

| | Sej | it. 12- | SeT | it. 19 |
|--------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmonalis | 423 | 153 | 531 | 140 |
| Diphtheria | 189 | 19 | 206 | 28 |
| Measles | 65 | 1 | 103 | 5 |
| Scarlet fever | 91 | 3 | 112 | 6 |
| Smallpox | 1 | | | |
| Varicella | 1.4 | | Q | |
| Typhoid fever | 132 | 17 | 168 | 18 |
| Whooping cough | 5 | 3 | 23 | = |
| Cerebrospinal meningitis | 4 | () | 8 | 6 |
| | | | | |
| Totala | 0.34 | 20.2 | * *60 | 20 |

The Tri-Professional Medical Society of New York .-The second annual meeting of this society was held at the Hotel Astor, New York, on September 15th. The programme included the annual address of the president, J. Monroe Lieberman, and the following papers: Electricity—An Indispensable Therapeutical Agent in Nervous, Dermatological, and Genitourinary Diseases, by Dr. J. Monroe Lieberman; Sequelæ due to Nonremoved Adenoids Monroe Lieberman; Sequelæ due to Nonremoved Adenoids in Childhood, by Dr. Arthur J. Herzig; Sexual Anæsthesia in Women, by Dr. B. S. Talmey. Among those who participated in the discussions were Dr. G. M. MacKee, Dr. T. M. Townsend, Dr. Augustine Goelet, Dr. M. C. O'Brien, Dr. George Lesser, Dr. H. B. Sheffield, and Dr. J. Sohl. A resolution was adopted by the society censuring Governor Hughes for signing the osteopathic bill. While on his way to attend the meeting, Dr. G. B. McAuliffe fell from a street car and sustained a Pott's fracture of the

The Mortality of Chicago. During the week ending September 12, 1908, there were reported to the Department of Health of the City of Chicago 556 deaths from all causes, as compared with 553 for the previous week and 570 for the corresponding period in 1907. The annual death rate in 1,000 of population was 13.38, as against a death rate of 13.31 for the corresponding week last year. Of the total number of deaths 239 were of children under five years of age, and of these 136 were due to diarrhocal diseases. The principal causes of death were: Apoplexy, 12 deaths; Bright's disease, 33 deaths; bronchitis, 11 deaths; consumption, 66 deaths; cancer, 22 deaths; diphtheria, 12 deaths; heart disease, 30 deaths; intestinal diseases, acute, 144 deaths; nervous diseases, 24 deaths; pneumonia, 24 deaths; scarlet fever, 10 deaths; suicide, 7 deaths; typhoid fever, 5 deaths; violence (other than suicide), 20 deaths; whooping cough, 4 deaths; all other causes, 132 deaths

The Health of Philadelphia .- During the week ending September 12, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Malarial fever, I case, o deaths; typhoid fever, 78 cases, 12 deaths; scarlet fever, 16 cases, I death; chickenpox, 2 cases, o deaths; diphtheria, 55 cases, 12 deaths; measles, 12 cases, 1 death; whooping cough, 5 cases, 2 deaths; tuberculosis of the lungs, 71 cases, 52 deaths; pneumonia, 19 cases, 13 deaths; crysipelas, 1 case, 0 deaths; puerperal fever, 2 cases, o deaths; cancer, 22 cases, 27 deaths. The following deaths were reported from other transmissible diseases. Tuberculosis, other than that of the lungs, 12 deaths; diarrhea and enteritis, under two years of age, 44 deaths; dysentery, 2 deaths; cholera morbus, 2 deaths. The total deaths numbered 445 in an estimated population of 1,532,-738, corresponding to an annual death rate of 15.01 in 1,000 736, corresponding to an annual death rate of 15.0 in 1,300 in 1,300 for population. The total infant mortality was 115; under one year of age, 96; between one and two years of age, 19. There were 27 still births, 17 males and 10 females.

Charitable Bequests.—By the will of William J. Eavenson, the Home of the Merciful Saviour for Cripble (Children of Dividately). The Philodolphis Home for Inc.

Children, of Philadelphia, the Philadelphia Home for fants, and the Home for Consumptives, of Philadelphia,

By the will of Mrs. Jane A. Townsend, who died recently in England, the Presbyterian Hospital, New York, will receive \$15,000 to endow three free beds in memory of two sons and a daughter, deceased. The Presbyterian Home for Aged Women in the City of New York will receive \$34,500.

By the will of George F. Parkman, the Massachusetts General Hospital, Boston Home for Aged Women, Boston Home for Aged Men, Children's Hospital, and the McLean Home for Aged Men, Children's Hospital, and the McDean Insane Hospital will each receive \$5,0,000. Provisional bequests are made of \$100,000 to the Massachusetts Institute of Technology, and \$20,000 each to the New England Hospital for Women and Children and the Massachusetts Charitable Eye and Ear Infirmary.

By the will of Henry J. Braker, who died recently in Plymouth, England, St. John's Guild, New York, receives \$10,000 to create a Conrad Braker, Jr., Fund, the income of which to go to the floating hospital fund of that institution. The Sheltering Arms, 504 West 129th Street, receives \$10,000 to erect a cottage in memory of Mr. Braker's mother, to be known as the Frances J. Braker Cottage.

The Cholera Epidemic.—According to press despatches there is no improvement in the cholera situation in Russia. In St. Petersburg the epidemic is reported to grow worse daily, and hospital facilities are said to be entirely inade-quate to meet the requirements. It is reported that five hospitals will be opened immediately, and the number of ambulances, disinfectors, and physicians increased. The disease is also spreading in the Provinces.—In the Philippines the vigorous measures of inspection, disinfection, and increased hospital facilities carried on by the authorities seem to have resulted in an improvement in the cholera situation there. The work is still being carried on, and it is hoped that Manila will soon be freed from the disease.-Every preparation is being made to deal with the epidemic should it make its appearance in Germany. A conference of representatives of the Imperial Department of Health, the Department of the Interior, and the Army and Navy was held on September 22d to consider the cholera situation. It is feared that the disease has already reached Berlin, and a number of suspected cases of cholera are under supervision at the Virchow Hospital,—France is also taking precautions against the disease gaining a foothold there. Emergency ambulance stations and disinfecting plants have been established at the terminals of the northern and eastern railroads, and a rigid inspection of all baggage is insisted upon. Orders have been issued that all vessels from the Russian Baltic bound for French ports are to be thoroughly disinfected.—Every precaution is being taken to prevent the sailors of the Atlantic Fleet from being exposed to cholera in the Philippines. Before the fleet reaches Manila a wireless message will be sent to Admiral Sperry regarding the cholera situation at that time. and giving him instructions how to proceed under the conditions then prevailing.

Vital Statistics of New York .- During the week ending September 5, 1908, there were reported to the Department of Health of the City of New York 1,321 deaths from all causes, as compared with 1,402 for the corresponding period in 1907. The annual death rate in 1,000 of population was 15.58. There were 654 deaths reported in Manhattan, 108 in the Bronx, 450 in Brooklyn, 87 in Queens, and 22 in Richmond. Of the total number of deaths 509 were of children under five years of age, and of these 244 were due to diarrhœal diseases. There were 115 still births. Seven hundred and eighty-six marriages and 2,384 births were reported during the week.

During the week ending September 12, 1908, there were for the corresponding period in 1907. The annual death rate for the corresponding period in 1907. The annual death rate in 1,000 of population was 14.38. Of the total number of deaths 625 were in Manhattan, 120 in the Bronx, 393 in Brooklyn, 56 in Queens, and 25 in Richmond. There were 438 deaths reported of children under five years of age, and of these 203 were due to diarrheal diseases. There were 138 still births. Nine hundred and seventeen marriages and 2,332 births were reported during the week.

The International Congress on Tuberculosis.-This The International Congress on Tuberculosis.—This congress, which meets triennially, was formally opened in Washington, D. C., on Monday, September 21st. It will continue for three weeks, closing on Monday, October 12th. More than fifteen hundred official delegates have been appointed, representing nearly every civilized country in the world. Each of the forty-six States of the Union is reported. resented by its own committee, and among the foreign countries which have sent delegates are the following: Argentina, Austria, Belgium, Bolivia, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Cuba, Denmark, Ecuador, France, Germany, Great Britain (including her more important dominions and colonies), Greece, Hawaii, Holland, Hungary, Italy, Japan, Mexico, Norway, Panama, Peru, Portugal, Puerto Rico, Roumania, Russia, San Salvador, Siam, Spain, Sweden, Switzerland, Syria, Uruguay, and Venezuela. The transactions of the congress will be published in four large volumes, which are forces to all active members of the congress. volumes, which are free to all active members of the conrolumes, which are tree to all active members of the congress who have paid their membership fee of \$\frac{8}{5}\$. The congress is divided into seven sections, and the meetings of these sections will be held in the New National Museum during the week begining September 28th. The sections are as follows: (1) Pathology and Bacteriology, Dr. William H. Welch, of Baltimore, president; (2) Clinical Study and Therapy of Tuberculosis, Dr. Vincent Y. Bowditch, of Boston, president; (3) Surgery and Orthopædics, Dr. Charles H. Mayo, of Rochester, Minn., president; (4) Tuberculosis in Children, Dr. Abraham Jacobi, of New York, president; (5) Hygienic, Social, Industrial, and Economic Aspects of Tuberculosis, Mr. Edward T. Devine, of New York, president; (6) State and Municipal Control of Tuberculosis, Surgeon General Walter Wyman, of Washington, D. C., president; (7) Tuberculosis in Animals and Its Relation to Man, Dr. Leonard Pearson, of Philadelphia, president. A tuberculosis exposition is being held in the New National Museum, which is practically a World's Fair on Tuberculosis. Clinics and demonstrations will be held in connection with this exhibition, which will be open during the entire time. Prizes, in the form of money, medals and diplomas, will be awarded for exhibits that are particularly meritorious. President Rosewell is president of the Congress, Dr. Edward L. Trudeau, of Saranac Lake, to be provident and Wise President series and the proper decident and Wise President series and the proper decident series and the congress, Dr. Edward L. Trudeau, of Saranac Lake, to be president and Wise President series and the proper decident series and the president for the proper deciden gress who have paid their membership fee of \$5. of the Congress, Dr. Edward L. Trudeau, of Saranac Lake, is honorary president, and Vice-President Fairbanks, is honorary president, and Vice - President Fairbanks, Speaker Cannon, and the governors of States are the vice-presidents. Dr. John S. Fulton, of Washington, D. C., is secretary general. The other officers of the congress are soflows: Dr. Lawrence F. Flick, of Philadelphia, chairman of the Central Committee; Dr. Joseph Walsh. of Philadelphia, secretary; Mr. Henry Phipps, of New York, treasurer; Dr. Henry G. Beyer, of Washington, chairman of the Committee on Exhibition; Dr. Charles J. Hatfield, of Philadelphia, chairman of the Committee on Prizes; Dr. George M. Kober, of Washington, chairman of the Committee on Special Lectures; General G. M. Sternberg, of Dr. H. M. Bracken, chairman of the Transportation Committee; Dr. Joseph Walsh, of Philadelphia, chairman of the Committee on Translation and Interpretation; Dr. Livingston Farrand, of New York, chairman of the Committee on Printing and Publication; Dr. Lawrence Litchield, of Pittsburgh, chairman of the Committee on Entertainment.

Bith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL. September 17, 1908.

- Nontuberculous Bone Infection about the Hipjoint. A
 Clinical and Röntgenological Study,
 By Arrhur T. Leca and Urial W. George.
 An Analysis of the Symptoms in Forty Cases of Suppuration of the Kidney or Kidney Pelvis.
- The Necessity of Disinfection after the Death or Removal of Tuberculous Patients, By Henry Jackson.

 State Sanitary Supervision, By Herrer Ackson.
- Nontuberculous Bone Infections about the Hipjoint.-Legg and George remark that pyogenic infection of the bone, though it may occur in the epiphysis, most commonly takes place in the diaphysis. Osseous infection of the tubercle bacillus, on the other hand, occurs in the epiphysis with but few exceptions. One of these occurs in children at an age when there is no osseous epiphysis; another, by direct infection from a focus in the epiphysis. Clinically, the symptoms of acute pyogenic infections outside the hipjoint, namely, acute onset, rapid thickening of the neck, trochanter, or upper shaft, pain, spasm, and constitutional symptoms with high white count, will generally easily distinguish this class from tuberculosis. The distinctive diagnosis of the chronic cases, those produced by a low grade organism, is, however, much more difficult from a clinical standpoint. The deformity, limitation of motion, spasm, and atrophy may be the same as that seen in tuberculosis of the hip. Thickening is felt earlier than in tuberculosis, and the white count is considerably higher than we find in uncomplicated tuberculosis. There may be no more constitutional symptoms in this class of cases than is seen in tuberculosis. Of all points in the physical examination of cases referable to the hipjoint, rotation is of the greatest importance. In cases with a focus outside the hipjoint, rotation may be free, limited, or even absent. If any is present, however, it will have the normal quality, while, where any change has taken place in the articular cartilage, the rotation, if present, has a peculiar characteristic quality. In the acute pyogenic infections within the joint there are classical symptoms of acute joint infection, acute onset, rapid joint distention, pain, constitutional disturance, and high white count. The subacute or chronic cases, those starting in the epiphyseal line or as a general joint infection, may differ in no respect clinically from tuberculous hip disease. These will generally clear up much earlier than tuberculosis, with possible perfect function. This type will show an ultimate permanent lengthening from the irritation of the epiphyseal cartilage. It is thus seen that although acute extraarticular and intraarticular pyogenic bone infections may be made clinically, the subacute or chronic cases cannot, early at least, be distinguished from tuberculosis. Here we must use the Röntgen ray to show the exact location and the extent of the process.
- 2. Suppuration of the Kidney or Kidney Pelvis. Chate gives the following symptoms for suppuration of the kidney or kidney pelvis: Less than one balf of the patients in his series, 42.5 per cept give a history of humbar pain. In only a lit-

tle more than one fourth, 28.5 per cent., could he make out any enlargement of the diseased kidney. Tenderness was present in 38.5 per cent. Casts, on which some place much importance, appeared in but 17.5 per cent. A very striking thing to him was the fact that eleven of these forty cases, 27.5 per cent., presented neither pain, renal mass, tenderness, nor casts. From an analysis of his forty cases it appears that we have in suppurations of the kidney and kidney pelvis but one sign that is always present, that is, a turbid urine. The next most frequent sign, present in 85 per cent. of the cases, was a disturbance of micturition; both these symptoms also occur almost constantly in conditions limited to the bladder. There was a considerable proportion of renal suppuration, 27.5 per cent., in which we get only these two signs. This brings the author to the points that he wishes to emphasize, first, the lack of distinctive symptoms in many renal suppurations; second, the absolute unreliability of negative findings in these cases; last, the tremendous importance of the use of the cystoscope in the study of urinary suppurations.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION September 19, 1908

Criminal Abortion in Its Broadest Sense. Chairman's Address, Section in Obstetrics and Diseases of Women, By WALTER B. DORSETT. In Memoriam: Nicholas Senn; The Responsibilities of the Hour. Chairman's Address, Section in Surgery and Anatomy, By RUDOLPH MATS.

gery and Anatomy,
Simplicity in Prescribing. Chairman's Address, section in Pharmacology and Therapeutics,
By M. Howard Fussell.
Diphtheritic Genital Infection Simulating Puerperal
By WILLIAM CUTHERISON,
By AUGUST MARTIN. Genital Tuberculosis, By August Martin.
The Conservative Surgeon and the Symptomless Uter-

ine Fibroid,
Metabolism in Typhoid,
Bacteriological Diagnosis of Typhoid,
By Francis W. Peabody,
Rv William H. Park.

Typhoid Bacilli Carriers,
Treatment of Typhoid,
By WILLIAM H. PARK.
The Prescribing of Proprietaries, Especially Proprie-Typhoid Bacilli Carriers, Treatment of Typhoid, tary Mixtures By SOLOMON SOLIS COHEN

12. New Bloodless Method of Amputating the Anus and Rectum,

13. Relative Merits of the Operations for Hæmorrhoids,

By J. D. SINGLEY.

14. Ranula and Other Diseases of the Salivary Glandular

System,
Thrombosis of Superior Longitudinal and Lateral
Sinuses Treated by Opening the Torcular of
Herophilus,
By Louis C. Deane. 16. The Factors in the Estimation of Blood Pressure,

By Joseph Eichberg 17. Uterus and Stomach. Their Anatomical, Physiological, and Pathological Relationship. By FRED J. TAUSSIG.

1. Criminal Abortion in Its Broadest Sense .-Dorsett, in his address as chairman of the Section in Obstetrics and Diseases of Women, states that self induced abortion, or abortion produced by a fashionable or fad doctor, is, as we know, a fruitful cause of the horrible pus cases in which we are now and then called to operate. This fad doctor is one with a lucrative practice, and is often the lion at social functions. He it is who empties the uterus in cases of emesis gravidarum without first racking his precious brain in trying all recognized remedies and methods to check the vomiting. He it is who finds so many cases of contracted pelvis where it is

utterly impossible to do anything but an early abortion to save the woman's life. He it is who finds so many cases of retention of menses that require dilatation and curettement. He it is who finds the urine loaded with albumin, necessitating an immediate emptying of the uterus to prevent death from Bright's disease. Such men and women prostitute the profession of medicine and should be exposed.

4. Diphtheritic Genital Infection Simulating Puerperal Fever.—Cuthbertson remarks that it is, unfortunately, the almost universal custom to call every septic fever occurring during the puerperium puerperal fever, and this arises from the fact that bacteriological examinations are not made often enough to determine the exact cause of the fever, and thus properly to classify the variety of the disease. In the light of our present knowledge, it is as manifestly improper to call a diphtheritic genital infection in the puerperal woman puerperal fever as it would be to call a malarial infection occurring during the same period by a similar name. We know that true puerperal sepsis is one of the most fatal infections we are called on to treat, while diphtheritic infection, if recognized early, is one of the most hopeful. Early recognition of the disease by bacteriological examination, and the resort to antidiphtheritic serum, should enable us to cure every one of these cases, and thus contribute materially to the reduction of the mortality at this critical period of woman's life. The diphtheria invasion does not seem to have any definite period after confinement for making its appearance, the time varying from the third to the twenty-sixth day. Pain in the genitals is apparently one of the prominent symptoms. The membrane covering the genitals is grayish white in color, with a red coloration around the edges. In all but one of the reported cases its appearance was accompanied by fever, ranging from 100° F. to 104° F., with a corresponding acceleration of the pulse. After the favorable experiences in the use of the diphtheria antitoxine serum in the cases reported, there is no doubt that in all patients suffering from diphtheritic puerperal infection, where the Klebs-Loeffler bacillus has been demonstrated, diphtheria antitoxine is a specific for the disease. Curettement, either with a sharp or dull curette, or with the finger, should be scrupulously avoided, as the membrane being densely adherent, its removal results in leaving raw surfaces which serve as open avenues for the absorption of a greater amount of toxic material.

5. Genital Tuberculosis.-Martin describes his experience with genital tuberculosis. He observes that in the large majority of cases the infection arises from other tuberculous deposits in the bodya secondary form-more frequently it seems to come from the alimentary tract rather than from the respiratory. In most instances, the bacillus may be brought down in the lymphatics or blood vessels, but we know that immigration does occur also by means of immediate contact. In more than two thirds of his cases it came from the ovarian follicles to the Falloppian tubes; to the uterus in only one It was also found in the corpus uteri. Localization in the cervix is very rare, still more than in the vagina. Peritoneal infection was observed in the majority of cases. The infection may

occur at any age, but particularly during the menstruation and gestation periods. The clinical diagnosis in most instances is made with difficulty. In fact, the insignificance of the symptoms is characteristic. Menstruation, in his material, was disturbed in only fifty-five per cent.; more or less aching feeling was complained of; many patients denied all such. Some complained of a reddish colored, offensive discharge. They feel uncomfortable, weak, unable to work, lose flesh, and show an unsatisfactory complexion. The sexual appetite not rarely seems to be increased. Not very rarely this disease arises from a well noted incident, puerperium, abortion, gonorrheeal infection, local treatment. A severe cold was often mentioned, particularly in virgins and sterile women. In fact, seriously developed genital tuberculosis seems to exclude impregnation. There is no doubt that we find not very rarely tuberculosis of the placenta, particularly in case of general tuberculosis, which spreads to the ovum by the way of the blood. Sixty-six per cent. of his patients had never been pregnant. Thirty per cent. of the pregnancies occurred before tuberculosis manifested itself. One person in nineteen gave reasons to infer that she fell ill three weeks after confinement. Tuberculosis of other organs, heredity, and contact with tuberculous people is very important for the diagnosis. The general condition of health, the slow development of the disease, the inefficiency of any treatment as to convalescence, must be particularly looked at. Treatment is both general and local, and the author refers only to the local. Tuberculous ulcers of the ulva and vagina and of the endometrium can easily be removed. Especially attention should be paid to a complicating genorrhea and septic infection. Tuberculous diseases of the tubes and ovaries can be diagnosticated definitely only after operation. These organs should be removed when destroyed by the tuberculous process. Especial attention is to be paid to the after treatment.

8. Bacteriological Diagnosis of Typhoid. -Peabody says that of all laboratory methods in the diagnosis of typhoid fever there is none which has been used so extensively, or has given such excellent results in the hands of many clinical observers, as has the agglutination reaction. That it has been generally adopted the world over is due to its high degree of accuracy combined with its simplicity. The establishment of public laboratories, where samples of blood are examined for individual practitioners, has brought the test within the reach of a vast number of physicians. While, however, the reaction has proved itself of inestimable value, there are certain important drawbacks to its use. The chief of these is that the agglutination reaction is often late in making its appearance. It is frequently not obtained during the first week of the disease, and while it is present in about three quarters of the cases during the second week, it may be delayed much longer, and even into convalescence. Its value is, therefore, limited at the very period in the disease in which a diagnostic test is most needed; for while it is often comparatively simple to recognize typhoid fever in its later stages, it is at the onset, during the first week, that the most doubt arises, and it is in the early days of the disease that the danger of contact infection is probably greatest. Moreover, there are certain atypical cases in which the reaction is never obtained. Next to the lateness of the appearance of the agglutination test, its greatest disadvantage is that it is not absolutely specific. It does not always give an ætiological diagnosis. In the early stages of the disease, before the agglutination test is positive, the diagnosis is made in most cases by the culture; and in the later stages, when the organism can no longer be isolated from the blood, the agglutination reaction is usually present. Thus the one test is supplemented by the other, and in these two comparatively simple clinical methods—the agglutination test and the blood culture in ox bile—we have the means of making an accurate diagnosis of typhoid fever, in the great majority of cases, at any stage in the course of the disease.

16. Blood Pressure.—Eichberg concludes that the routine interrogation of the blood pressure should constitute part of the regular examination of each case. Both systolic and diastolic pressures are necessary in the solution of the problem. Systolic values of more than 130 mm. call for further study. The most important feature of the study of blood pressure is found in its behavior under tests with measured amount of work. Increase of blood pressure is often conservative, and then calls for no interference. A pressure that is at all times above normal may be the only, as it often is the earliest, evidence of arteriosclerosis.

MEDICAL RECORD. September 19, 1908.

Wounds of the Heart, with a Report of Three Cases, and Conclusions Drawn,
 By L. L. Hill.
 Observations on the Treatment of Exophthalmic Goitte

By Annew I McCosh.

Goitre, By Andrew J. McCosh.
3. The Early Diagnosis of Pulmonary Tuberculosis,
By Joseph Walsh.
4. Acute Anterior Poliomyelitis. A Pathological Study
of Three Cases, By Williams B. Cadwalader.

5. Kaolin as a Remédy, By George Richter.
6. Some Observations on the Urethral Length,
By Walter S. Reynolds.

1. Wounds of the Heart.—Hill draws the following conclusions from his own three cases and from a review of the literature: Any operation which reduces the mortality of a given injury from ninety to sixty per cent, is entitled to a permanent place in surgery, and every wound of the heart should be operated on immediately. Whenever the location of the external wound and the attending symptoms cause suspicion of a wound of the heart, it is the duty of the surgeon to determine the nature of the injury by an exploratory operation. Unless the patient is unconscious, and corneal reflex abolished, an anæsthetic should be given, and preferably chloroform. Struggling is liable to produce a detachment of a clot, and renew the hæmorrhage. Never probe the wound, as serious injury may be inflicted upon the myocardium. Rotter's operation renders access to the heart extremely easy, gives an opportunity of removing any extravasation of blood, and inspection of the pleural cavity with reference to the injuries. Steady the heart before attempting to suture it either by carrying the hand under the organ and lifting it up, or if the hole is large enough, introduce the little finger, which will serve the double purpose of stopping the bleeding and facili-

tating the passage of the stitches. When the hæmorrhage is so profuse as to preclude the possibility of suturing, with the right hand gently lift the heart out of the pericardium and introduce from below the left hand and press between the index and ring finger the vena cava inferior and its inosculation into the right atrium, and pressing upwards displace the inosculation of the vena cava superior. It has been stated that the heart will stand complete compression for a minute and a half and incomplete for four minutes. Catgut sutures should be used, as wounds of the heart heal in a remarkably short time. The sutures should be interrupted, introduced, and tied during diastole, not involve the endocardium, and as few as possible should be passed commensurate with safety against leakage, as they cause a degeneration of the muscular fibre with its tendency to dilatation and rupture. In cleansing the pericardium, it should be sponged out and no fluid poured into the sac, as quickly produced tension may cause serious consequences to an already disabled heart. Until every aseptic precaution has been taken the mechanical stoppage of the heart from accumulation of blood in the pericardium should be prevented by aspiration, as diminished resistance from loss of blood and want of cleanliness from hurry of preparation are largely contributive causes to the forty per cent. of deaths from infection. For drainage, tubes are preferable to gauze, as the latter is liable to cause retention of the discharge and may strangulate the heart. needle may be removed at once, but a knife blade must not be touched until the surgeon has bared the heart and is master of the situation, as an uncontrollable hæmorrhage might occur from premature extraction.

4. Acute Anterior Poliomyelitis.—Cadwalader reports three such cases and observes that acute anterior poliomyelitis is essentially an acute polioencephalomeningomyelitis. The process is the same during infancy and adult life and is most marked in the lumbar and cervical enlargements of the cord and frequently may extend upward as far as the cerebral cortex. Interstitial changes predominate and occur together with parenchymatous changes. Parenchymatous changes never occur without interstitial changes. The localization and intensity of cellular infiltration depend upon the distribution and vascularity of the area affected. Neuronophagia is an important factor in the destruction of ganglion cells.

LANCET.

September 5, 1908.

I. On Certain Aneurysms of Cerebral Vessels, By J. R. BRADFORD.

An Extensive Enterectomy for Gangrene,
By A. E. J. Barker.
Exophthalmic Goitre: A Discussion on Its Pathology
and Treatment.
By A. G. Gullan,

Some Points Regarding Spinal Analgesia, with a Record An Application of Opsonic Methods in Comparing Human and Bovine Tuberculosis, Epidemic Infantile Diarrhea, By V. I. Groves, An Unusual Case of Chamber Chamber

man and Bovine Tuberculosis, By F. L. Pochin.

Epidemic Infantile Diarrhœa, By V. J. Glover.

An Unusual Case of Chronic Binitrobenzine Poisoning, By E. WALKER.

A Case of Foreign Body in the Left Bronchus,
By H. A. Moffat.
An Outbreak of Cowpox,
By A. B. Green.

An Outbreak of Cowpox,

10. On a Localized Outbreak of Scarlet Fever, Presumably Attributable to Infected Milk,

By SIR C. A. CAMERON. II. A Case of Ectopic Gestation on the Goldfields,

By R. S. TAYLOR. I. Cerebral Aneurysms.—Bradford states that the frequency of aneurysm of the cerebral vessels is considerable when contrasted with aneurysms affecting vessels of similar size in other parts of the body. He uses the term cerebral aneurysm to describe an aneurysm which is gross and obvious to the naked eye and does not require any special methods of demonstration to show it. The cerebral vessels are peculiar anatomically in the thinness of their coats owing to the absence of any considerable amount of fibrous tissue. They are peculiar in their mode of support; they run in very large lymph channels. They are also peculiar in their physiological relationships, being very subject to high tension. The cerebral arteries are engorged passively whenever the tension rises in the systemic vessels. The vessels at the base of the brain most commonly affected by aneurysm are, first and foremost, the middle cerebral; secondly, the basilar; thirdly, the internal carotid; and, fourthly, the anterior cerebral. The aneurysms are usually saccular; false, interstitial, or dissecting aneurysms very rarely occur. The aneurysms have extraordinarily thin walls, which can possibly be correlated with the absence of any marked amount of fibrous tissue in the cerebral vessels, as compared with some vessels where aneurysms are developed elsewhere. The aneurysms are very prone to be full of blood clot, and vary enormously in size. Some of them are no larger than a pin's head, while others are almost as big as a wal-They are usually about the size of a pea. When they rupture, in the majority of cases the pia mater is not broken, and the blood is extravasated between it and the surface of the brain. Another form of rupture is where the aneurysm becomes adherent to the cerebral substance, and gives rise to intracerebral hæmorrhage which bursts into the brain and not externally. The aneurysm may not rupture, but may cause death by pressure and consequent cerebral softening. These aneurysms may occur at almost any time of life up to extreme old age, but the bulk of them occur before the fortieth year, and a very considerable proportion between the twentieth and thirtieth years. They are the result of local disease of the vessel wall, the disease being in most cases atheroma, usually of syphilitic origin. Such a syphilitic origin is more characteristic of cerebral aneurysms, than of aneurysms elsewhere. Clinically four groups of cases may be recognized:-First, those that produce no symptoms at any time, the patient dving from some other cause. Second, those where the patient simply presents the symptoms of a cerebral hæmorrhage, rapidly proving fatal. Third, where the patient presents symptoms in a greater or less degree of a cerebral tumor. Fourth, cases characterized by the following phenomena: (1) There is an early seizure followed by (2) a period in which there are no marked symptoms of any kind perhaps with the exception of some stiffness of the neck, and (3) subsequently there is a fatal seizure. Probably first of all a slight rupture occurs and then a big and fatal

rupture. It is doubtful whether aneurysm at the base of the brain can be diagnosticated with certainty, but it can be suspected. It is most likely to be confounded with a purely functional condition, the pa-

tient being thought to be neurasthenic.

3. Exophthalmic Goître.-Gullan calls attention to the following instructive facts regarding exophthalmic goitre. It mainly affects women between the ages of sixteen and forty years—i. e., at the period of sexual vitality—and is rare before puberty and after the menopause. The disease may occur in members of the same family, and, indeed, in several generations. It is often supposed to be consequent upon fright, mental shock, worry, or prolonged mental strain; or appears to date from an acute illness, such as influenza. But in most of the cases the disease has really existed before the worry or shock occurs. The thyreoid gland from a case of exophthalmic goitre shows marked changes, the cells having become columnar instead of cubical, the vesicles stellate instead of square or rounded, and a mucous substance instead of a colloid filling those vesicles. This is strongly suggestive that the goitrous change in this disease is due to a true hypertrophy, which produces an increase of the In support of the contention specific secretions. that the disease is due to excessive activity of the thyreoid (thyreoidism) is the fact that the manifestations of exophthalmic goitre are the exact opposite to those of myxœdema, which disease is undoubtedly due to a deficiency of thyreoid secretion (athyreoidism). Excessive metabolism is shown in exophthalmic goitre by the frequent, raised tension pulse, accentuated action of the heart, active and alert mental and physical condition, tendency toward elevation of the temperature, moist skin, looseness of the bowels, increased excretion of urea, and loss of body weight. It is probable that the normal function of the thyreoid is detoxication of metabolic The intimate relation which exists beproducts. tween the thyreoid and the generative organs-the gland often swells at the menstrual period, involutes or atrophies at the menopause, causing myxœdema, hypertrophies at puberty or during pregnancy, causing exophthalmic goître-inclines the writer strongly to the view that some abnormality in the function of the generative organs may be the starting point of the thyreoid derangement. It is improbable that parathyreoid insufficiency has anything to do with exophthalmic goitre.

4. Spinal Analgesia. - Renton reports fifty consecutive operations in which spinal analgesia was carried out, and gave great satisfaction. The procedure has been greatly improved of late by the use of an injection compound of greater specific gravity than the cerebrospinal fluid. The heavy compound travels to the lowest part of the spinal canal, and by moving the patient or shifting his position, the height of analgesia can be definitely controlled. The position of the patient is one of the most important factors in the success of the method. The patient lies on the side to be operated on, and the knees are fully flexed on the abdomen. The head and neck must always be raised. Only a slight elevation of the pelvis is necessary. Puncture can be done between either the third and fourth, or second and third lumbar spines. As a rule two or three

drachms of cerebrospinal fluid should be removed before making the injection. The compound used consists of stovaine, five grains; glucose, five grains; and sterilized water to one hundred minims. One cubic centimetre (seventeen minims) is used each time, of which two minims remain in the needle. Of course strict asepsis is essential to the safety of spinal analgesia. Abdominal relaxation is perfect, and no straining can take place, as the abdominal muscles are paralyzed. Cutting of the peritonæum is painless, but traction causes discomfort and nausea. Acute abdominal cases do extremely well. In hæmorrhoid and perineal cases the puncture is done in the sitting position, and the effect of the heavy compound is well seen, only analgesia of the perineal region resulting, the legs and abdomen remaining unaffected. The procedure is most satisfactory in hernias, the relaxation of the muscles being perfect. The same is true of operations on the extremities. Out of fifty cases there were two failures to puncture, and insufficient analgesia in three. In the latter failure was probably due to the compound having been injected outside the dural sac. The longest operation performed lasted eighty minutes. No bad results of any kind developed afterward in any of the cases. Nervous patients usually prefer general anæsthesia, but spinal analgesia is better in cases of arteriosclerosis, of old age, of alcoholism, and in certain acute abdominal conditions.

LA PRESSE MEDICALE.

August 15, 1908.

2. The Urinary Sulphoethers in Pathological Conditions,
By Labbe and G. Vitry.
3. Graphic Electrodiagnosis. Its Importance in Accidents
Among Workmen,
By J. Larat.
By J. Larat.

- r. Deformity of the Pelvis in Lumbar Scoliosis.—Desfosses presents fourteen plates which illustrate the deformities found in pelves of patients suffering from scoliosis. He says that beyond doubt the inequality in the volume of the pelvis is due in part to the displacement of the lumbar vertebræ. Nevertheless, this inequality of volume is very often absolutely real and corresponds not only to a diminution of the volume of the soft parts, but to an arrest of development of the pelvis on the side of the convexity of the lumbar column.
- 2. The Urinary Sulphoethers. Labbe and Vitry declare that in the present state of our knowledge the relation of the sulphoethers to the total urinary azote is destitute of clinical signification.

August 10, 1008

The Lipoids,
 Present State of Antitetanic Serum Therapy,
 By L. Lagane.

1. The Lipoids.—Iscovesco divides the lipoids into three classes based on their biochemical properties. One class of these bodies, particularly lecithine, has the property of forming extremely toxic compounds by uniting with certain substances, other lipoids are toxic themselves and differ from the true toxines in their resistance to heat and in their solubility, while a third possesses the property of neutralizing various biological toxic agents. The latter include the antitoxines, or antihæmolysines, or bactericide substances.

August 22, 1908.

Typhobacillosis of Landouzy. Bacteriological Diagnosis during the Typhoid State, By H. Gougeror.

BERLINER KLINISCHE WOCHENSCHRIFT August 3, 1008

I. Plastic Repair of Traumatic Defects of the Auricle,

By SCHMIEDEN. 2. Relations Between the Adrenal System and the Kidneys, By K. REICHER. Trade Accidents

3. Further Communications Concerning Trade Accidents of Telephone Girls, By M. Bernhardt. By H. STRAUSS. Proctitis Sphincterica,

5. Experimental Studies Concerning the Fulguration of

By Georg Arndt and August Laqueur. 6. The Applicability of the Dark Field Illumination in Clinical Microscopy, By C. Posner.
7. The Importance of the Dark Field Illumination in Ex-

amination of the Blood,

Concerning the Action of Hydrochloric Acid upon the
Ferment Secretion of the Stomach and the Pancreas,

By R. EHRMANN and R. LEDERER.

Method of Determination of the Neutral Sulphur in the

The Present Stand on the Question of Whooping Cough, By G. ARNHEIM. II. Relations between Immunity and Ferment Action.

By KRAUSE and KLUG. 12. Experiments with Various Derivatives of Tubercle Ba-cilli (Concluded). By A. WOLLFF-EISNER. cilli (Concluded).

1. Plastic Repair of Traumatic Defects of the Auricle.—Schmieden reports two cases. In the first he replaced the lobe of the ear, the lower part of the helix, by means of a skin flap taken from the upper arm. In the second the entire auricle was gone, and the operation was rather complex. A portion of the cartilage of the rib cut into the shape of the cartilage of the ear was taken out and implanted with its perichondrium under the skin of the breast. Second, a large skin flap was formed with its base below the clavicle, containing the piece of cartilage. Third, the flap was freed so that its pedicle was on the clavicle, the scar about the auricular opening was excised, the graft applied and secured with sutures, while the head was bent over to meet it and retained in position, with the arm going over the head by a plaster bandage. Fourth, the graft was cut free from the breast. Fifth, a posterior surface was formed for the graft from a flap taken from the skin of the head.

2. The Adrenal System and the Kidneys .-Reicher states that it is very probable that the adrenal secretion and the internal relations between the adrenal system and the kidneys has a weighty pathogenic importance in many forms of nephritis.

5. Experimental Studies Concerning the Fulguration of Vital Organs.-Arndt and Laqueur thus sum up the results of their experiments: Deep narcosis is not absolutely necessary for the fulguration treatment so long as the skin remains outside the field of the sparks or is protected from them. Fulguration of the skin causes a little irritation, that of the muscles and bones no noticeable effect upon the heart and respiration. 2. Fulguration may be applied to the brain and dura mater even for a considerable time without immediate injurious consequences. Minor irritative effects, which in fulguration of the dura may be ascribed to increase of the blood pressure, may be avoided by use of short sparks. 3. Fulguration of the thoracic organs must be made only with certain precautions, as the heart reacts immediately to the sparks with anythmia and

lowering of the blood pressure, and is only slightly protected by the pericardium. This injury is particularly great in bipolar application of the fulguration. Carbonic acid cooling is to be avoided in fulguration of the internal organs of the thorax. Fulguration of the digestive tract and of the bladder calls forth strong peristalsis and contraction, but only by the direct application of the sparks. The skin of the abdomen or dry compresses afford a certain protection against this action. 5. Immediately after the fulguration pieces of tissue and tumors show no injury aside from a little superficial necrosis. 6. The physiological action of direct monopolar application of the high frequency current is in many respects the same as that of fulguration and is sometimes better. This shows that the effect of fulguration is not wholly due to the discharge of the sparks, but that the high frequency current is also a factor.

8. Action of Hydrochloric Acid.—Ehrmann and Lederer assert that the statement made by Pawlow that hydrochloric acid was a specific excitant of

the pancreas is incorrect.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT August 4, 1908.

I. The Clinical Diagnosis of Sclerosis of the Pulmonary Artery, Changes in the Nervous System after Stovaine An-

By SPIELMEYER. æsthesia. Artificial Hyperæmia of the Brain in Initial Sclerosis

of the Cerebral Arteries,

Results of the Cytological Investigation of the Cere-By GALLI. Ву КЕНМ. brospinal Fluid and their Aspects,

5. Carrot Soup in Nutritive Disturbances of Infants, By Moro.

6. Concerning the Resorption of Antitoxine through the Rectum,

By Hamburger and Monti. Rectum,

7. Operation for Recurrence after Carcinoma of the Uterus, By von Franqué.

8. The Diazoreaction of the Normal Urine,

By Engeland. By SIEGMUND 9. Gastric Disturbances in Masturbators,

10. An Angioma in the Region of the Pons, By ENDERS.
11. A Rare Disturbance after Submucous Resection of the Nasal Sæptum,

By MÜLLER By SAALFELD 12. Obituary of Oskar Liebreich,

1. Clinical Diagnosis of Sclerosis of the Pulmonary Artery.-Posselt discusses the question under what circumstances is a clinical diagnosis of stenosis of the pulmonary artery possible, and comes to the conclusion that: A. With a primary mitral stenosis and in the presence of the subsequent symptom complex it may be made with the greatest probability, 1, by the physical examination which reveals a zone of dulness over the upper left margin of the sternum with tenderness to pressure and percussion, especially in certain positions, an unusual extension of the cardiac dulness to the right, the x ray picture of the upper part of the middle arch, and gradual extension outwards of the diastolic thrill and of the diastolic (presystolic) murmur towards the pulmonary orifice; 2, by clinical symptoms; marked cyanosis as an early symptom and the great difference lasting a long time between this and either absent or slight dyspnœa, ædema, and other symptoms of stasis; onset of attacks of dyspragia intermittens angiosclerotica pulmonalis (angina hypercyanotica); absence of the formation of drumstick fingers in spite of the high degree of cyanosis; repeated large pulmonary hæmorrhages without pronounced infarct character. B. Accurate observation of the preceding makes also possible the recognition of the extremely rare primary pulmonary sclerosis. C. When the pulmonary sclerosis appears with sclerosis and insufficiency of the semilunar valves of the aorta, which is very rarely combined with it, there are some peculiarities which form an indication of diagnostic value. Such are the marked cyanosis instead of the pale facies aortica to be expected, a hypertrophy of the right heart not explained by other causes, and an abnormal direction of the diastolic murmur to the left.

2. Changes in the Nervous System after Stovaine Anæsthesia.-Spielmeyer found by experiments on dogs that degenerative changes were apt to persist in the cells of the nervous system, but concludes that, as in one group of cases in which only 0.05 to 0.07 of stovaine was given, no characteristic cell changes could be detected, possibly the reduction of the dose may abate the chances of the onset of

changes in the nervous system.

5. Carrot Soup in Nutritive Disturbances of Infants.-Moro recommends highly carrot soup as a diet for sick infants, contraindicated only in cases where the child is ædematous and where the nutritive disturbance has been occasioned by an exclusive or disproportionate carbohydrate diet.

- 6. Resorption of Antitoxine through the Rectum.—Hamburger and Monti found that in only one out of twenty-four cases in which the method was tried was there an evident result from the rectal application of serum. They therefore conclude that in man tetanus antitoxine, and probably other antitoxines, rubbed into the rectum usually fail to be resorbed.
- 11. A Rare Disturbance after Submucous Resection of the Sæptum.-Müller reports a case in which, after submucous resection of the sæptum, the patient was annoyed by a whistling sound in his nose during respiration. This was found to be due to a tense fold of membrane at the edge of an aperture two millimetres in diameter visible only in the left cavity.

ARCHIVES OF PÆDIATRICS

The Modern Babies' Dispensary,

By H. J. GUSTENBERGER. Dental Caries as a Cause of Disease in Children,

By C. HERRMANN.
The Distribution of Bacteria in Bottled Milk and its 4

Application to Infant Feeding, By A. F. Hess, Rubella. A Report of an Epidemic of Eighty Cases, By M. Michael.

Congenital Laryngeal Stridor du to an Enlarged Thymus Gland, By A. W. Myers. Congenital Laryngeal Stridor due

The Modern Babies' Dispensary.—Gustenberger says an ideal institution ought to comprise the following elements: 1, A dispensary to which mothers could bring both healthy and sick babies soon after birth, get proper instructions, and have her history recorded, also in which nurses, students, and physicians could get proper training. The person in charge should ascertain whether any given applicant is worthy, and the dispensary should cooperate with other institutions, find mothers for babies, and homes for both. There should be a waiting room, a weighing room, examining rooms, a room for minor surgery, isolation rooms, lecture room, and clinical laboratory. 2, A milk laboratory

to supply clean milk in pints and quarts, or in suitable nursing bottles, and where food could be pasteurized and sterilized. 3, A hospital for sick babies with all suitable furnishings and for the working out of pathological problems. 4, An isolation house for contagious disease. 5, Branch dispensaries in the crowded districts, to be supplied with milk from the central establishment and to send their sick to the central hospital. 6, Convalescent homes and fresh air camps in the country.

2. Dental Caries as a Cause of Disease in Children.—Herrmann states that in rickets, syphilis, and tuberculosis we have examples of constitutional disease which may cause characteristic changes in the teeth. Scurvy, diabetes, and leuchæmia also show characteristic conditions in the month. It is believed that these and many distinctly oral diseases could be studied with advantage by physician and dentist in conjunction. Cause and effect must not be confounded in the analyses of constitutional diseases associated with oral changes. The changes may be primary, but they frequently represent only one manifestation of the oral condition. The following are cited as diseases which may result from an abnormal condition of the teeth: I, Diseases of the tooth itself. 2, Diseases of adjacent structures, gingivitis, pyorrhœa alveolaris, alveolar abscess, periostitis, ostitis, necrosis. 3, Different forms of stomatitis, including ulcerative and gangrenous stomatitis and tonsilitis. 4, Diseases of the maxillary sinuses. 5, Diseases of the cervical lymph nodes, cellulitis (Ludwig's angina). 6, Diseases of the alimentary tract. 7, General infections, septicæmia, pyæmia. 8, Diseases of the blood, disturbances of nutrition, nervous diseases.

3. The Distribution of Bacteria in Bottled Milk and its Application to Infant Feeding .-Hess summarizes his paper in the following conclusions: In bottled milk the bacteria are by far the most numerous in the upper layers of the cream, becoming gradually less numerous in the lower portion. The upper two ounces contain the greatest number of bacteria. This is true of tubercle bacilli as well as of streptococci and other bacteria. Instead of using the upper cream it is therefore safer to discard the upper two ounces. The average bottle of such partially skimmed milk contains three per cent. fat, and three and five tenths per cent. proteid, and is well adapted for infant feeding. Discarding the upper two ounces we then have seven ounces of twelve per cent. milk, then eight ounces of ten per cent. milk, then twelve ounces of seven per cent. milk. The usual top milk formulæ may be prepared with these figures as a basis.

ANNALS OF SURGERY.

September, 1908.

The Treatment of the Undescended or Maldescended Testis Associated with Inguinal Hernia, By W. B. COLEY.

Operation for Undescended Testicle, By F. N. G. STARR.

The Radical Treatment of Carcinoma of the Bladder, By A. A. BERG.

Disturbances due to Disease of the Verumontanum and Its Treatment with the Posterior Urethroscope, By G. K. SWINBURNE.

Fibrinous Calculi in the Kidney, By H. G.vo. and H. W. Beal.

- 6. Hæmaturia as a Complicating Factor in Appendicitis, By M. G. SEELIG. By A. S. TAYLOR. Volkmann's Ischæmic Paralysis,
- A Recurrent Dislocation of the Ulnar Nerve. of a Second Case Cured by Operation, By F. Cobb.
 The Operative Treatment of Recent Fractures of the
 Femoral Shaft,
 By T. W. HUNTINGTON.

 10. Reduction of Supracondyloid Fracture of the Humerus.

By W. C. Lusk.

II. Twenty-five Hundred Cases of Gas Ether Anæsthesia without Complication, By J. A. VAN KAATHOVEN.

Treatment of Undescended or Maldescended Testis Associated with Inguinal Hernia.--Coley thinks the following conclusions justifiable: 1. The organ is usually of little or no functional value. It is more subject to inflammation and pain than the normally placed testis, and may be more subject to malignancy. 2. It should never be sacrified in children and rarely in adults in operating for radical cure of hernia. It is valuable in developing the male characteristics of a child and in promoting his general health. It should be saved in the adult on account of the influence on the patient's mentality. 3. Operation should seldom be performed earlier than the age of eight to twelve unless the hernia demands intervention. The testis may descend spontaneously as puberty approaches. Abdominal ectopia should remain untreated unless double. eration requires free opening of the inguinal canal by Bassini's incision, freeing the testis from adhesions and bands, bringing it into the scrotum, and suture of the canal without transplantation of the The removal of any of the structures of the cord is seldom indicated. 5. No case of double un-descended testis should be allowed to reach the age of puberty.

b. Hæmaturia as a Complicating Factor in Appendicitis.—Seelig thinks the following classification of cases of this condition is appropriate: I. Cases of hæmaturia due to the action of toxines upon the kidneys. 2. Cases due to direct involvement of the kidneys. 3. Cases due to direct involve-ment of the ureter. 4. Cases in which the urinary bladder has been perforated by an appendicular abscess, one of the resulting symptoms being blood in the urine. In other words, hæmaturia complicating appendicitis may be due to general systemic invasion resulting from acute appendicitis and affecting the kidney indirectly, toxic nephritis, direct involvement of the kidney or ureter, or the urinary

bladder.

Volkmann's Ischæmic Paralysis.—Taylor finds that this is essentially a myositis resulting from prolonged deprivation of oxygenated blood. muscle substance is replaced by fibrous tissue, varying in quantity and degree, of resulting contracture with the severity of the case. The nerves may be involved from the ischæmia and pressure, or from compression by the cicatricial mass. Most of the cases occur in children as the result of too tight dressings, especially when applied for fractures near The diagnostic symptoms are pain, the elbow. swelling, and simultaneous appearance of rigid contracture and paralyzed muscles. The condition may occur after six hours of tight compression. phylaxis is all important, no tight dressings being used for fractures, especially when near the elbow Allowance must be made for traumatic reactionary swelling, and dressings frequently in-

Should the lesion occur, dressings must be removed and effort made by massage, electricity, etc., to restore muscle function. Should this fail a more or less extensive operation upon the tendons or bones will be required, which must be followed by a careful course of physical therapeutics. The prognosis is unfavorable, a cure may be deferred for months or years.

AMERICAN JOURNAL OF SURGERY. September, 1908.

Flatfoot. By ROLAND O. MEISENBACH. A Report of a Case of Brain Abscess Associated with Chronic Purulent Otitis Media, with Special Reference to the Operative Technique Followed, By JOHN RANDOLPH PAGE

Report of Two Interesting Cases of Mastoiditis, By J. H. CRAWFORD.

A Report of Three Cases of Laryngeal Growth Removed by Direct Laryngoscopy, By John McCov. Remarks on the Importance of Early Surgical Treat ment of Callstone Disease, Based upon an Experience of Forty-two Operative Cases

By G. E. GAVIN. An Apparatus for Providing a Large Number of Visitors with a Complete View and for Securing Photographs and Moving Pictures of Operations, By CHARLES H. DUNCAN.

Practical Points in Anæsthesia,

By FREDERICK EMIL NEEF Litholopaxy as an Office Operation, with Report of Cases, By George Knowles Swinburne. A New Rectal Speculum, By G. A. Humphreys.

Remarks on the Importance of Early Sur-5. Treatment of Gallstone Disease.-Gavin gical states that to properly diagnosticate gallstone disease we cannot lay too much stress upon the importance of taking a careful history of the early symptoms of the disease; the gallbladder being in apposition with so many other important organs, any inflammatory trouble of a few weeks' duration will involve another organ; thereby changing greatly all of the symptoms; hence the importance of the early history. We generally find the affected gallbladder in one of three conditions: (1) Cholecystitis without stone is really a more serious condition than with stone; as we know, the more virulent the infection the less likely we are to have stone formation. The main symptoms in this condition are, a slow type of fever, a dull aching pain in the epigastrium, with distinct tenderness on pressure which lasts several days and passes off gradually; always more or less fever present. (2) Cholecystitis with stone may be subdivided into (a) those cases where the gallstones are confined to the gallbladder, and give rise to the intermittent attacks of gallstone colic; (b), those cases where stones have passed out into the cystic duct; and (c), those cases where the stones are lodged in the common duct. (a) Given a case with a history of acute attacks of severe colic in the right side of the upper abdomen, coming on at irregular intervals, not being caused by anything that has been taken into the stomach, passing off as a rule suddenly, either by vomiting, rumbling of gas, or taking an opiate, and followed by a quick return to normal health, we are dealing with cholecystitis with the stones confined in the gallbladder. (b) Given a case, with the history of one or more of the attacks, coming on suddenly and passing off quickly, but after this attack the patient is found complaining of more or less tenderness

over the gallbladder, has a temperature of 100° F. or 102° F., coated tongue, skin of a "bilious" hue, and a constant aching in the upper abdomen, as though he might at any time have another attack of the severe colic, then we are dealing with a stone in the cystic duct and the small lymphatic gland at the junction of the cystic and common ducts is involved. (c) Given a case, with a history of previous attacks, as related, with a distinct jaundice, that some days is more prominent than others, with all kinds of symptoms referable to the gastrointestinal tract, and we are dealing with cholecystitic with stone formation in the common duct. (3) Cholecystitis with contraction of the gallbladder is really a later result where the organ has safely withstood the onslaught of many attacks of acute cholecystitis, and we may find stones present or not. All cases of gallstone disease, if not operated on, will terminate in one of three ways: (1) Rupture that may cause diffuse peritonitis, or enter the alimentary tract. (2) By adhesions to the surrounding organs, causing such distortion of the tissues that we have slow emaciation from indigestion, and often a secondary ulceration of the stomach or duodenum. (3) By developing malignancy.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of April 16, 1908.

The President, Dr. John A. Wyeth, in the Chair.

The Pathological Changes in the Thyreoid Gland as Related to the Varying Symptoms in Graves's Disease; Based on the Pathological Findings in 275 Cases of Exophthalmic Goître.— Dr. Louis B. Wilson, of Rochester, Minn., read this paper, illustrating it with lantern slide projections and stereopticon views. He said the material for the study had been obtained from operations and autopsies in cases of hyperthyreoidism (exophthalmic goître) in St. Mary's Hospital, Rochester, Minn., from March 3, 1898, to April 10, 1908. The series consisted of: (a) Eleven cases in young females whose symptoms had existed without remission or abatement from two months to two years, but who at the time of examination presented all the classic symptoms of Graves's disease in a severe form. The pathological diagnosis in all these cases was that of typical exophthalmic goître. (b) Nine cases in females whose symptoms had existed from one to eleven years, but all of whom were better at the time of examination than they had been at some previous period. In all these cases the pathological report was either of typical exophthalmic goitre or exophthalmic goitre with colloid. Fourteen cases in females whose symptoms had been present from three to thirty years, or from three months to a year following a previous long period of nonsymptomatic goitre, and at no time had shown symptoms of more than moderate severity. The pathological report in these cases was that of colloid adenoma. All specimens were brought persodiately from the operating room to the laborators, where the were examined fresh and then placed in fixatives, usually within ten minutes after they were removed from the patients. The histology in each case was carefully reviewed from all the preparations at hand, and notes made according to a formula compiled from the reports of previous observers. While this review was in progress every care was taken to exclude all knowledge of the clinical histories of the cases, in order that there might be no clinical bias entering into the pathological estimate. As the work progressed it was found that certain pathological pictures were repeating themselves with monotonous frequency. When the examinations were completed these pictures were found to represent cases constituting four large natural groups, and there was little trouble in arranging the remainder of the cases so as to form connecting groups between the large and more striking ones. On the basis of this grouping, which was from study of the specimens alone, and on the working hypothesis that Graves's symptoms arose from increased absorption of thyreoid secretion, Dr. Wilson ventured to make a conjecture of the probable clinical history in each case. This was an attempt to determine in as unbiased a manner as possible whether or not there existed any definite relationship between the varying pathological changes in the thyreoid gland and the varying symptoms in Graves's disease. For determining the value of these conjectures, Dr. H. S. Plummer, who had written the original office histories in the majority of the cases, kindly reviewed his own histories, as well as those of the other clinicians, and grouped them as follows: Grade I. Acute cases of mild, moderate, severe, or very severe degree. Grade 2. Cases which had been severe but at the time of examination showed remission of symptoms. Grade 3. Cases of previously severe hyperthyreoidism, but with symptoms now chiefly of severe vital organ lesion type (heart, nervous system, etc.) rather than hyperthyreoidism. Grade 4. Mild continuous cases slowly developing. When the clinical and pathological classifications had been definitely made, the two were compared case by case. He then presented and described a few stereoscopic photographs of Graves's thyreoids. The following pathological grouping was presented:

PATHOLOGICAL GROUP A.

- 1. Small Intraalveolar Parenchyma Increase.
 - a. Size of gland.
 - b. Increased number of cells in a single layer.
 - c. Reduplication of layers.
- 2. Small Amount of Thin Secretion. Shown by
 - a. Dryness of fresh specimen.
 - b. Small amount of secretion in stained sections. This is noneosine staining.

Pathological Group B.

- t. Large Intraalveolar Parenchyma Increase. Shown by
 - a. Size of gland.
 - b. Increased number of cells in a single layer.
 - c. Reduplication of layers.
 - d. Infolding of alveolar walls.
 - a Papilla formation,

2. Large Amount of Thin Secretion.

Shown by

a. "Glair" of fresh section.

b. Large amount of secretion, which is noneosine staining in stained sections.

PATHOLOGICAL GROUP C.

I. Large Intraalveolar Parenchyma Increase. Shown by

a. Size of gland.

b. Increased number of cells in a single layer.

c. Reduplication of layers. d. Infolding of alveolar walls.

e. Papillæ formation.

2. Large Amount of Thin Secretion.

Shown by

a. "Glair" of fresh section.

b. Large amount of secretion, most of which is noneosine staining in stained sections.

3. Beginning Degeneration.

Shown by

a. Denser staining of some of the secretion.

b. Beginning exfoliation of parenchyma.

PATHOLOGICAL GROUP D.

I. Old Intraalveolar Parenchyma Increase.

Shown by

a. Size of gland.

b. Remains of infolding.

c. Remains of papillæ.

2. Large Amount of Thick Secretion.

Shown by

a. Gelatinous appearance of fresh secretion.

b. Large amount of secretion, most of which is eosine staining in stained sections.

3. Advanced Degeneration.

Shown by

a. Dense staining of most of the secretion.

b. More or less complete exfoliation of the parenchyma.

PATHOLOGICAL GROUP E.

I. Small Multialveolar Parenchyma Increase. Shown by

a. Size of gland.b. Recently formed alveoli.

2. Small Amount of Thin Secretion.

Shown by

a. Dryness of fresh secretion.

b. Small amount of secretion, which is noneosine staining in stained sections.

PATHOLOGICAL GROUP F.

I. Large Multialveolar Parenchyma Increase. Shown by

a. Size of gland.

b. Recently formed alveoli.

2. Large Amount of Thin Secretion. Shown by

a. "Glair" of fresh secretion.

b. Large amount of secretion, which is noneosine staining in stained sections.

PATHOLOGICAL GROUP G.

1. Large Multialveolar Parenchyma Increase. Shown by

a. Size of gland.

b. Recently formed alveoli.

2. Large Amount of Secretion.

Shown by

a. Large amount of secretion, most of which is noneosine staining in stained sections.

3. Beginning Degeneration.

Shown by

a. Denser staining in some of the secretion.

b. Beginning exfoliation of parenchyma.

PATHOLOGICAL GROUP H.

1. Old Multialveolar Parenchyma Increase. Shown by

a. Size of gland.

b. Sometimes scattered groups of recently

2. Large Amount of Thick Secretion.

Shown by

a. Gelatinous appearance of fresh section.

b. Large amount of secretion, most of which is eosine staining in stained sections.

3. Advanced Degeneration.

Shown by

a. Dense staining of most of the secretion.

b. More or less complete exfoliation of the parenchyma.

This grouping was made on the following working hypothesis, which was merely an elaboration of Möbius's theory: First, the symptoms of Graves's disease are associated with increased absorption of an increased secretion of the thyreoid gland. Second, the more functionally active parenchyma cells in the gland the larger the amount of its secretion. Third, the more fluid the secretion of the gland the more readily will it be absorbed. Fourth, the cells partly disintegrated found inbedded in the secretion in alveoli with partially or wholly naked walls are mostly if not entirely desquamated epithelial cells. Fifth, the increased concentration of the stained secretion by the absorption of its more fluid constituents and by the desquamation of the alveolar epithelium must tend to reduce absorption from the gland as a whole. Sixth, the dense gelatinous well stainable secretion, the so called "colloid," in any thyreoid gland is not, strictly speaking, a normal product, but the complement of the absorbed portion. Seventh, when dense colloid material fills the alveoli of the thyreoid gland it must be regarded as evidence, not of present secretion, but as indicative of degeneration. Eighth, when, therefore, we measure either histologically or chemically the relative colloid (globulin) contents of the gland, we should bear in mind that we are probably not determining factors which have actually caused the symptoms, but only their associated phenomena.

On such a basis, a very simple hypothesis of the development of Graves's disease might be formulated as follows: 1, Following a metabolic, chemical, or extraorganismal irritant, thyreoid parenchyma proliferates, but is functionless and degenerate. 2, This process may be primarily simple adenoma or adenopapilloma. 3, Either process may start in a gland not previously enlarged by retained secretion, or in one which is already distended with nonabsorbed secretion. 4, The severity of the symptoms depend upon (a) the amount of absorbable secretion, and (b) the patient's ability to neutralize the

The author said that, while their cases were too-

few from which to draw positive conclusions, yet. so far as they went, one would seem to be warranted in making the following tentative statement from the clinical standpoint: I. Very early acute cases showed pathologically hyperæmia and cellular hyperplasia, if not throughout the gland, at least in much of it, provided, of course, the more enlarged lobe had been removed. 2. Later acute, moderate, severe, and very severe cases showed greater parenchyma increase and in many instances evidence of increased absorbable secretion. Speaking broadly, the parenchyma increase was in direct proportion to the intensity of the symptoms. The relatively few variations from this rule might be accounted for by the varying resisting power of different individuals. Where relatively small amounts of absorbable secretion were found in alveoli whose walls were crowded with functionally active cells, we must assume that the secretion had already been absorbed. In fact, it would seem a necessary conclusion that, in any gland with a given amount of secreting parenchyma, the less secretion found in its alveoli at any given moment the greater the amount that had been absorbed. In regard to the secretion, both the histologist and the chemist were measuring only the complement of that portion which had been absorbed and which was directly responsible for the symptoms. 3. Cases which clinically were showing any remission of toxic symptoms, showed somewhere within the gland more or less evidence of decreased function in the exfoliation or flattening of parenchyma cells, or of decreased absorption, by the presence of thick, gelatinous, stainable, secretion so called "colloid." 4. Patients who had recovered from their toxic symptoms, and were now suffering principally from long previously acquired heart or nerve lesions, showed exfoliated or flattened, nonsecreting epithelium and large quantities of well stained, thick, gelatinous, nonabsorbable colloid. In this class of cases it would seem as futile to search for previous causative parenchyma increase as to look for diphtheria membrane in the throat of a patient suffering from postdiphtheritic paralysis. As for the thick, gelatinous colloid itself, it was difficult to conceive of its ever being absorbable, but even in the thyreoids of healthy individuals it was but the retained complement-degenerated probably-of the absorbed portion of the secretion. Its presence in large quantities in any thyreoid would seem to bear a similar relation to secretion and excretion by the gland as the retained urine in a hydronephrosis did to secretion and excretion by the urinary apparatus. 5. The recently developed, very mild, or the moderately mild cases of long standing were almost always pathologically adenomata in which, while there was some total parenchyma increase by the multiplication of alveoli, there was not greatly increased functional power of the individual parenchyma cells. Goitre of the adenoma type apparently passed through the same changes of hypertrophy and degeneration as the cof the adenopapilloma type: 6. Simple goitres hould be regarded as multiple retention cysts filled with nonabsorbable secretion, cell detritus, etc.

The Surgical Aspects of Exophthalmic Goître. —Dr. WILLIAM S. HALSTED, of Baltimore, said that surgeons were interested in this disease not only

from the surgical aspect, but from the ætiological and pathological aspects as well. Dr. Wilson's demonstration had interested him very much, the pictures showing familiar conditions met with in this disease, but seldom had the opportunity been given to see such beautiful reproductions of sections. It was interesting to observe that the histological history often gave evidence of the clinical history, and in a few instances indicated a grave condition. He reported some experiments made on dogs, producing artificially hypertrophy of the thyreoid. Excising a portion of one lobe of the thyreoid in a dog produced an hypertrophy of the remainder of the gland and of the accessory thyreoids. He gave a blackboard demonstration of what took place in the dog's gland after such a procedure. The dog might present the typical gland of exophthalmic goitre, but with no symptoms whatever of the disease. He agreed practically to all that Dr. Wilson had stated in his paper.

Without entering into an elaborate classification of this disease, he said that a patient might present himself with quite a large paranchymatous goitre which did not offer the gross lobulations that occurred in the colloid goitre. There might be slight exophthalmic symptoms, without exophthalmos; and, again, there might be nervousness, tachycardia, and a large thyreoid. Although this was not an ordinary colloid goitre, at the same time the patients would state that certain symptoms occurred with the appearance of the goitre. In such a case one could not say that it was a simple case of exophthalmic goitre. Such a condition was not what was generally known as Basedow's disease.

The operation for exophthalmic goitre might be a partial one, such as ligation of the arteries, or the removal of portion of the gland; or one might do a lobectomy. In doing the latter operation one should be very careful not to injure the parathyreoids or to interrupt the circulation. The operation should be as bloodless as possible. One should be careful not to injure the recurrent laryngeal nerve; this nerve was injured more often than surgeons would admit. Dr. Halsted made it a point to look for this nerve after every operation upon the thyreoid gland. Once he found it caught in the ligature, and to-day he used catgut ligatures, because if it was once caught, it would be released when the ligature was absorbed, and so restored in all probability to function. He also made it a point to see that the circulation in the parathyreoids was not cut off.

Transplantation of the parathyreoids could now be done, as had been proved experimentally. But it seemed to him that, to be successful, they first should create a need for parathyreoid tissue. As a result of the work done in Baltimore he felt certain that they were justified in returning parathyreoids in the same human being; but whether they were justified in asking another to give up his thyreoid for such a purpose was open to question. It was interesting to recall the fact that last winter a man presented himself for the removal of a lymphangeioma of the neck, and who was willing to give up his parathyreoids. Upon operation, they found. to their keen disappointment, that no parathyreoids yers to be found. Never before in human beings or animals had they failed to find the parathyreoids.

He said that if they included Basedow's goitre, adenoma, and cysts with symptoms of the disease, they probably had had 170 cases of exophthalmic goître. Until this last winter they had had but one death as a result of the operation. In all, they had had only three or four perfect cures, although they had given much relief in a large number of the

Some Considerations of Exophthalmic Goître from a Medical Standpoint.-Dr. ALFRED STEN-GEL, of Philadelphia, read this paper. (See page 577.)

Retters to the Editors.

SUNLIGHT AND TUBERCULOUS DISEASE

NEW YORK, September 19, 1908.

To the Editors:

I did not intend that my contribution on The Explanation of Seeming Paradoxes in Modern Phthisiotherapy, which you were good enough to publish in your last issue (September 12th), should lead to any controversy. I thought I had confined myself to facts, stating the experience of others and my own. I concluded my communication with the glad admission that all of us would be willing to learn from Dr. Woodruff's further studies.

To my regret, I see that Major Woodruff, in his article entitled The Dangers of Excessive Sunlight in Tuberculosis, has not confined himself to facts, but indulged in fancies and personalities. May I first say a word in defense of Dr. Vincent Y. Bowditch, of Boston, whom Dr. Woodruff accuses of partiality because he could not accept the major's preliminary Report on Sunlight for his section of the Tuberculosis Congress? When Dr. Woodruff told me of Dr. Bowditch's decision, the latter had not yet any knowledge of the subject of my paper. Furthermore, all who know Dr. Bowditch will agree with me that he is too conscientious and scientific a man to refuse any communication for which there was room on the programme, even should his very best friend or the most distinguished colleague of the board of directors of the national association hold a different opinion from that expressed by the author desiring to be heard.

Dr. Woodruff places me in a peculiar light by making the statement that he had not said to me that "about one hundred per cent. of the white soldiers who contract tuberculosis in the Philippines die from this disease," but that all cases in white people in the tropics promptly perish unless they are

It is possible that I may have misunderstood him, presuming that, being a military surgeon, he referred to soldiers alone. But I fail to see the difference between "one hundred per cent." and "all cases in white people," since most of our soldiers are white people, and he admits having stated that "all white people in the tropics contracting tuberculosis promptly perish unless they are sent home.

I have given in my paper above referred to the full names and addresses of all the authorities who kindly expressed their opinions on the subject of sunlight and solar therapy in tuberculosis. Dr.

Woodruff contents himself by saying that a prominent physician of Philadelphia expresses an opinion in accord with what Dr. Woodruff pleases to call the "modern view" that "sunshine is less impor-tant," etc. When one wishes to have his views endorsed by an authority, it would seem to me that it would be better to name this authority. There are many prominent physicians in Philadelphia, and it is hard to surmise whom Dr. Woodruff means.

The major quotes Dr. Sanford Hascom's table, according to which granite cutters have the highest percentage of mortality from tuberculosis, namely, 38.73, printers have 25.44 per cent., barbers 22.61, bookkeepers 18.30, moulders 17.48, and miners the lowest percentage, 2.94. Hotel proprietors have 5.44, city firemen 6.66, master mariners and pilots 6.97, railway trainmen 7.86, and farmers 8.42. I fail to see that these statistics bear out Dr. Woodruff's argument. He says: "This latest table is so important that it is quoted in full to show that light or darkness might have opposite effects from what we now believe. . . . It is remarkable that those that have the most light suffer most and those that have the least have the best record.

Granite cutters do not always work in sunlight. They often work under sheds. Perhaps the majority of printers work at night (particularly those engaged in printing newspapers). Barbers always work indoors and very often, as, for example, in our modern hotels, in badly or artificially lighted basements. It has been demonstrated by post mortem examinations that the high mortality from tuberculosis in granite cutters and printers is due to the inhalation of relatively large amounts of inorganic irritating dust (stone and lead). The remarkably low mortality of miners from tuberculosis in Dr. Hascom's statistical table may be explained by an unusually well ventilated mine where the miners, belonging to the East Summerville branch of the Royal Arcanum, are employed. It must also be remembered that miners' phthisis is not nearly so fatal as tuberculosis pulmonum.

The low mortality of hotel proprietors may well be accounted for, because they live well and usually do not have to work very hard. City firemen, master mariners, pilots, railway trainmen, and farmers are, perhaps, as much benefited by the rays of the sun as any class of workers, and this doubtless is one of the principal reasons for their low mor-

tality from tuberculosis.

No one has ever doubted that excessive sunlight is injurious, as perhaps all excesses are. The object of my paper was not to express a disbelief in the dangers of excessive sunlight, but to refute the major's wholesale condemnation of sunlight as a therapeutic factor and his designating it as a cause of tuberculosis, and to show that his views regarding the greater susceptibility of blondes to tuberculosis and their lesser chances of cure as compared with brunettes had no statistical or scientific basis.

Lastly, Dr. Woodruff in his concluding paragraph refers to Germany, the country of my birth, as my "dark native land," What the place of birth of an American physician, for such I proudly call myself, has to do with his opinions on any medical subject I fail to see. Why Dr. Woodruff should call Germany dark is still a greater mystery to me for

surely a country which has given to the world within one generation an Esmarch, a Brehmer, a Robert Koch, a Röntgen, and a Behring can hardly be called dark regarding medical science. In Germany, my native land, in the United States, the land of my choice and my adopted fatherland, in England, in France, and everywhere, earnest scientists and physicians are imbued with only one desire -to arrive at the truth. Their motto was given to them by a man trained as a physician, a German by birth, it is true, but a poet of the world. It was he, the immortal Goethe, who, on his deathbed, gave to the world as his last message the significant words, "More light! More light!" S. A. KNOPF.

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Principles of Pathology. By J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University and Pathologist to the Royal Victoria Hospital, Montreal; late Fellow of Jesus College, Cambridge, England. Volume I, General Pathology. With 322 Engravings and 16 Plates. Philadelphia and New York: Lea & Febiger, 1908. Pp. xvi-17 to 948.

This is one of the profoundest books that have appeared in medicine, in any language, for many a year. It may well be called a philosophy of pathology, with-almost for the first time in our literature—an adequate dash of embryology, that rock on which medicine ought to be largely founded. If the average reader finds much of it hard to understand let him not blame the learned author, for Dr. Adami's diction is beyond criticism in the matter of clearness; let him rather impute his difficulty to the intricacy of many of the subjects handled, and study his way to an appreciation of the great Montreal pathologist's teaching.

Dr. Adami's own convictions, always substantially based, rule in the text, as they ought to do, but he presents the views of others fairly, and he criticises, if criticise he must, with that courtly courtesy for which he is noted. He cites other men's observations and opinions freely - with wonderful comprehensiveness, we may say, when we reflect upon the great loss that he sustained in the destruction of his private library by the fire which not long ago afflicted McGill. In the preface he says pathetically, but without the emotional display for which he might well have been pardoned: manuscript had been completed, and all save a few chapters sent to my publishers, when, in April, 1907, the greater part of the Medical Building at the McGill University was burned to the ground, and with it my library, the chapters in question, and the illustrations I had made or gradually collected over many years for the purposes of the book. It has been impossible to reproduce most of these illustrations, and I have had to fall back upon illustrations from many sources." With characteristic modesty he adds: "I am very far from uncertain as to whether the work has not greatly gained from the greater diagrammatic clearness of the selected illustrations." Here we cannot agree with him, for we think his immercus schemata are more incomi uis

and clearer than those of any other medical author since the late Dr. John C. Dalton. At the same time we feel sure that all Dr. Adami's friends and their name is legion-bewail his grievous loss.

Though this first volume is devoted to general pathology, there are to be found here and there interesting remarks on points in special pathology. Among the sections which the practitioner of medicine will perhaps find most attractive are those on inheritance and allied subjects, on marriages of consanguines, on placental disease and its influence upon the fœtus, on monstrosities and malformations, on the exogenous causes of disease, on the endogenous intoxications, on the pathogeny of puerperal eclampsia, on bacteria and inflammation, on Ehrlich's side chain theory, on opsonic practice, on the nature of Hodgkin's disease, and on Beard's proposed treatment of cancer. It would be a mistake, however, for the reader to neglect any part of the volume; it deserves careful study in its entirety. It is to be hoped that the second volume will be issued before long.

Seventh Annual Report of the Metropolitan Water and Sewerage Board, for the year 1907.

This district in Massachusetts includes Boston, eight other cities, and ten towns, and has an area of 171.7 square miles and a population of 980,900. The condition of the various dams, reservoirs, filter beds, water works, and sewerage works is described. The daily per capita consumption was 133.8 gallons, an increase over the preceding year. A large amount of this increase was waste, due to bad plumbing, leaks, and the custom of allowing the water to run in winter to prevent its freezing in the pipes; the latter waste was enormous, amounting in the coldest week in the year to a daily average of twenty-five per cent. greater, over thirty million gallons more, than the daily average consumption for the entire year. Wherever meters were installed there was a marked decrease in unnecessary consumption; in one town the latter was reduced to almost one third of the amount used before meters were introduced. The work is well illustrated and maintains the high standard of reports from Massachusetts.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Beitrage zur topographisch-chirurgischen Anatomie der Pars mastoidea. Von Hakase Dr. H. E. Kanasugi. Mit 40 Tafeln nach photographischen Aufnahmen der Präparate in natürlicher Grösse. Wien und Leipzig: Alfred Holder,

in natürlicher Grösse. Wien und Leipzig: Airieu Ab., 1908. Pp. 25.
Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. February I, 1906, to February I, 1907. An Account of the General and Special Clinical and Pathological Work done by Members of the Staff at the Institute during the Year. Edited by Joseph Walsh, A. M., M. D. Philadelphia: Henry Phipps Institute, 1008. Pp. 430.
Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A. B., M. D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 10-10-534.

trated. Philadelphia and London: W. B. Saunders Company, 1998 Pt 16 to 534.
Gynaccology and Abdominal Surgery. Edited by Howard A. Kelly, M. D., F. R. C. S. (Hon, Edin.), Professor of Gynaccological Surgery at the Johns Hopkins University, etc., and Charles P. Noble, M. D., S. D., Clinical Professor of Gynaccology at the Woman's Medical College, Philadelphia, etc. Illustrated by Hermann Becker, Max Brodel, and Others. Volume Two. Philadelphia and London: W. B. Scender, Company, 1908. Pp. vi 862.

(... Deaths.

Miscellanp.

A Correction.-In an article by Dr. William F. Bernart, of Chicago, published in our issue for September 12, 1908, on page 511, first column, twelfth was inadvertently substiline, the word "cocaine" tuted for codeine.

Official Hews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, been reported to and plague has United States Public Health and Marine Hospital Service, during the week ending September 18, 1908: Smallpox United States

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| Germany-General July 23-29 1 | |
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| Spain—BarcelonaAug. 10-20 | 4 |
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| Japan Tokyo, vicinity | 12 1,332 276 114 103 Epidemic. |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 16, 1908

CLARK, T. A., Passed Assistant Surgeon. Granted two days leave of absence from September 15, 1908.

FOSTER, M. H., Passed Assistant Surgeon. Granted twenty-one days' leave of absence from September 16, 1908.

HOBDY, W. C., Passed Assistant Surgeon. Granted fourteen days' leave of absence from September 16, 1908; directed to proceed to Mare Island Naval Station on special temporary duty.

Keiller, William, Acting Assistant Surgeon. Leave of absence for twenty-three days from August 13, 1908.

MEGAW, H., Pharmacist. Directed to proceed to Washington, D. C., for temporary duty.

OSBORN, J. L., Pharmacist. Assigned to station at Chelsea,
Boston, Mass. amended to read seven days from August 13,

Schereschewsky, J. W., Passed Assistant Surgeon. Granted thirty days' extension of leave of absence from September 17, 1908.

STIMSON, A. M., Passed Assistant Surgeon. Directed to proceed to Los Angeles, Cal., upon special temporary

WALKLEY, W. S., Acting Assistant Surgeon. Granted cleven days' leave of absence from September 12, 1908. WASDIN, E., Surgeon. Granted fifteen days' extension of leave of absence.

WERTENBAKER, C. P., Surgeon. Detailed to represent the Service at the International Congress on Tuberculosis, September 21 to October 3, 1908.

WHITE, J. H., Surgeon. Granted seven days' leave of absence from September 9, 1908, under paragraph 189, Service Regulations.
Young, G. B., Surgeon. Directed to proceed to Milwaukee,

Wis., upon special temporary duty.

Appointment.

J. L. Osborn appointed a pharmacist of the third class, September 12, 1908

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Chicago, Ill., September 18, 1908, for the purpose of making a physical examination of an applicant for the position of Cadet in the Revenue Cutter Service: Surgeon G. B. Young, chairman; Assistant Surgeon C. E. Wood, recorder.

Board of medical officers convened to meet at New Orleans, La., September 17, 1908, for the purpose of making reexamination of alicns: Passed Assistant Surgeon H. W. Wickes, chairman; Assistant Surgeon C. M. Fauntleroy, and Acting Assistant Surgeon J. T. Scott, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending September 19, 1908:

BAILEY, EDWARD, Medical Reserve Corps. Ordered to ac-

tive duty in the service of the United States, and assigned to duty at Fort George Wright, Washington.

BAILY, H. H., Captain. Appointed a member of a board of officers to meet at the Army Dispensary, Washington, September 22, 1908, and on such other dates as may be necessary for the purpose of conducting the physical examinations prescribed in G. O. 79, War Department, May 14, 1908, on such field officers as may

partment, May 14, 1908, on such field officers as may be ordered before it.

Bruns, E. H., First Lieutenant. Relieved from further duty at Fort Monroe, Va., and ordered to proceed to Fort Bayard, N. M., and report in person to the commanding officer of the General Hospital, for duty.

CULLER, R. M., Captain. Relieved from duty at Fort Monroe, Va., and ordered to Fort Ontario, N. Y., for duty, instead of Fort Logan H. Roots, Ark., as heretofore ordered

CUTLIFFE, W. O., Medical Reserve Corps. Ordered to
Fort McIntosh, Tex., for duty.

Dade, W. H., Medical Reserve Corps. Granted leave of

absence for two months and fifteen days.

Duncan, L. C., Captain. Appointed a member of a board of medical officers to meet at Fort William H. Harrison, Mont., for the examination of such officers of the Medical Reserve Corps as may be brought before it to determine their fitness for retention in service.

FORD, J. H., Captain. Appointed a member of a board of medical officers to meet at Fort William H. Harrison. Mont., for the examination of such officers of the Medical Reserve Corps as may be brought before it to determine their fitness for retention in service.

LLIDAY, C. H., Medical Reserve Corps. Relieved from duty at Fort Sam Houston, Tex., and ordered to Fort

Fremont, S. C., for duty. HALLIDAY, F. A., First Lieutenant. Retired from active

service, September 13, 1908.

Jones, G. B., Medical Reserve Corps. Relieved from duty at Fort George Wright, Washington, and ordered to Fort Benjamin Harrison, Ind.

KILBOURNE, E. D., Captain. Relieved from duty at Fort

Brady, Mich., to take effect at such time as will enable him to comply with order; will proceed to San Francisco, Cal.; take transport sailing for Manila, November 5, 1908; and on arrival, will report to the commanding general, for assignment to duty.

Lynch, Charles, Major. Detailed to act as judge at the third annual contest of the First Aid Corps of the Pennsylvania Coal 'Co. and the Hillside Coal & Iron Co., to be held on Saturday, October 3, 1908, at Inker-

man, near Scranton, Pa.

PED, G. P., Captain. Relieved from duty at Fort Ontario, N. Y., and ordered to Fort Monroe, Va., for duty. Quinton, W. W., Captain. Granted thirty days' sick leave, SCHMITTER, FERDINAND, First Lieutenant. Ordered to Fort Logan H. Roots, Ark., for duty.

SILER, J. F., Captain. Detailed to act as judge at the third annual contest of the First Aid Corps of the Pennsylvania Coal Co. and the Hillside Coal & Iron Co., to be held on Saturday, October 3, 1908, at Inkerman, near

Scranton, Pa. WINTER, F. A., Major. Appointed a member of a board of officers to meet at the Army Dispensary, Washington, September 22, 1908, and on such dates as may be necessary for the purpose of conducting the physical examinations prescribed in G. O. 79. War Department, May 14, 1908, of such field officers as may be ordered

before it. WOODBURY, F. T., Captain. Leave of absence extended fif-

Navy Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Navy for the week ending September 19, 1908:

BISHOP, D. W., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, New York.

BOGERT, E. S., Surgeon. Detached from the Naval War College, Newport, R. I., and ordered to the Naval Recruiting Station, New York.

DOLLARD, H. L., Assistant Surgeon. Detached from the Rhode Island and ordered to the Albatross.

FORTED T. G. Assistant Surgeon.

FOSTER, T. G., Assistant Surgeon. Detached from the Naval Training Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

GILTNER, H. A., Assistant Surgeon. Appointed an assistant surgeon, from September 10, 1908.

HENRY, R. B., Assistant Surgeon. Appointed an assistant

surgeon, from September 10, 1908.
Hoen, W. S., Passed Assistant Surgeon. Detached from duty as assistant to the inspector in charge of the third lighthouse district, Tompkinsville, N. Y., and ordered to the Naval Hospital, New York, for treatment. McCormick, A. M. D., Surgeon. Detached from the Naval

Academy, and ordered to the Naval Recruiting Station.

Baltimore, Md.

McMurdo, H. B., Acting Assistant Surgeon, Detached from the Naval Training Station, San Francisco, Cal.,

and ordered to take a course of instruction at the Naval Medical School, Washington, D. C.

MACKENZIE, E. G., Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to take a course of instruction at the Naval Medical School, Washington, D.

Washington, D. C.
May, H. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to duty with lighthouse vessels en route to the Pacific Coast.

MARSTEILER, E. H., Surgeon. Transferred to the retired list from September 15, 1908, upon his own application after the completion of thirty years' service, in accordance with a provision of the naval appropriation act of May 13, 1908; detached from the Naval Recruiting Sta tion, Baltimore, Md., September 15th, and ordered

MURPHY, J. A., Surgeon. Ordered to temporary duty on board the Franklin.

OLD, E. H. H., Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va., September 15, 1908.
PHELPS, J. H., Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to take a course of instruction at the Naval Medical School, Washington, D. C., October 1st. Reed, E. U., Assistant Surgeon. Detached from the navy

yard, Mare Island, Cal, and ordered to the Naval Training Station, San Francisco, Cal.

STERNE, C. F., Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to take a course of instruction at the Naval Medical School. Washington, D. C

Wells, H., Medical Director. Detached from the Naval Recruiting Station, New York, and ordered to the navy yard, Portsmouth, N. H., and to additional duty in command of the Naval Hospital at that yard.

WHITESIDE, L. C., Acting Assistant Surgeon. Detached from duty at the Naval Hospital, Newport, R. I., and ordered to take a course of instruction at the Naval Medical School, Washington, D. C.

Births, Marriages, and Beaths.

Born.

NELSON.—In Manila, Philippine Islands, on Monday, July 6th, to Captain Kent Nelson, Medical Corps of the United States Army, and Mrs. Nelson, a daughter.

Married.

KENNEY—FARRANT.—In Norwich, Connecticut, on Tuesday, September 15th, Dr. John W. Kenney, of Northampton, Massachusetts, and Miss Rose C. Farrant.

LOBB-CHARLTON.—At Paoli, Pennsylvania, on Wednesday. September 16th, Dr. Norman H. Lobb, of Devon, Pennsylvania, and Miss Mary Isabel Charlton.

OWENS—SEYMOUR.—In Lakeville, Connecticutt, on Sat-urday, September 12th, Dr. William Dunlop Owens, United States Navy, and Miss Elise Seymour. PRIEST—Dowdy.—In Fort Bayard, New Mexico, on Wednesday, September 9th, Lieutenant Howard Priest, Medical Reserve Corps, United States Army, and Miss

SHRIER—DANZIGER.—In New York, on Tuesday, September 15th, Dr. Albert F. Shrier and Miss Clara E. Danziger.

To no. Konyy 19 Salem, New Jersey on Wednesday, September 16th, Dr. James L. Touhy and Miss Margaret R. Kohan.

Buddeke.—In New York, on Friday, September 11th, Dr. Charles I. Buddeke, aged thirty-four years.

Code.—In New Orleans, Louisiana, on Thursday, September 10th, Dr. James Francis Code, aged thirty-four

LANDON.—In Kansas City, Missouri, on Thursday, September 10th, Dr. Solomon S. Landon, aged thirty-six

LAWRENCE.—In Ballston Spa, New York, on Friday, September 11th, Dr. Eben Seward Lawrence, aged fifty-

MALECK.-In San Francisco, California, on Monday, Sep-

MALECK.—In San Francisco, California, on Monday, September 7th, Dr. Herman F. Maleck, aged fifty-four years.

MAY.—In New Baltimore, Michigan, on Tuesday, September 15th, Dr. Lewis P. May, aged fifty years.

SHERMAN.—In Tyro, Kansas, on Tuesday, September 8th, Dr. L. G. Sherman, aged seventy-three years.

SMITH.—In Lowell, Massachusetts, on Saturday, September 12th, Dr. Hermon J. Smith, aged seventy-one years.

VAN SCOYOC.—In Los Angeles, California, on Wednesday, September oth, Dr. L. G. Van Scoyoc, aged fifty years.

WILKIN.—In South Farmington, Massachusetts, on Saturday, September 12th, Dr. Anna M. Wilkin.

urday, September 12th, Dr. Anna M. Wilkin.

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Original Communications.

IRREMOVABLE CANCER.*

By William Seaman Bainbridge, Sc. D., M. D., New York,

Surgeon, New York Skin and Cancer Hospital; Secretary, Committee on Scientific Research, New York Skin and Cancer Hospital; Honorary President, First International Congress on Cancer, Heidelberg, Etc.

It has been the custom of the New York Skin and Cancer Hospital for a number of years to hold an annual clinic for the purpose of reviewing certain phases of the cancer problem. On the first of these occasions we gave a brief résumé of the status of the cancer question at that time with reference to occurrence, ætiology, and the different methods of treatment. The following facts were emphasized, and I repeat them now, because three years of added experience and study give us no reason for modifying the statements then made, and because they have a direct bearing upon the subject of irremovable cancer.

1. All cancer begins as a benign growth.

2. There is, therefore, a true precancerous stage, in which removal is a sure means of relief.

3. The disease is absolutely local in its beginning, and if fully extirpated a cure should result.

4. Extension may take place by direct infection of the surrounding tissue, but it is usually through the lymphatics or blood channels.

5. There is a varying degree of malignancy, some growths tending to return more readily than others.

6. The system is poisoned by the production of toxines.

7. General malnutrition, as well as diminished vitality of the noncancerous tissue in the neighborhood of malignant disease, as a rule, tends to increase the rapidity of the local extension and renders more likely the development of metastases.

At the second clinic we discussed the surgical treatment of cancer, giving statistics to prove that in this lies the only means of eradication of the dis-

Last year, at the third clinic, we reviewed in brief the work of the First International Congress on

Cancer at Heidelberg.

We come now to the discussion of that phase of the subject from which we fain would turn away, so pitiful and heartrending are some of the scenes which it entails; but to do so would be cowardice indeed. Unfortunately, through ignorance on their

own part many times, and often through the false hopes instilled into their minds by medical charlatans, patients with cancer are in the irremovable stage when they come under the care of the surgeon. It is then too late to effect a cure, but there is much yet to be done for these individuals in the way of relieving the awful suffering and prolonging life for weeks, months, and even years in comparative comfort. From time to time in the secular press, and occasionally in medical journals, a discussion arises concerning the wisdom and humanity of resorting to euthanasia for those afflicted with incurable disease, particularly incurable cancer. We are not ready to sound the death knell, and to advocate painless death, when the allotted span of life may be passed in relative ease and death result, as is many times the case, from some condition other than the cancer, or, perhaps, from internal cancer secondary to the original disease. In the latter case the patient is often unaware of the fact that he is suffering from cancer, and dies with the comforting thought that at least death from external evidence of a loathsome disease was spared him. The following cases' very well illustrate this point:

Case I.—Mrs. C. J. W., aged fifty-one, private patient, first consulted me January 24, 1907. In March, 1905, she had received a blow on the left breast, and in October of the same year she first noticed a lump the size of an English walnut in the breast. It did not increase in size. The entire mass, with a margin of sound tissue, was removed by another surgeon, December 12, 1905. This was examined microscopically and found to be malignant. The entire breast was removed in January, 1906, but the axilla was not cleared. In November, 1906, a nodule was found in the scar of the previous operation. In January, 1907, she came from a distant State to New York to receive treatment by one of the new methods at present receiving more or less attention. At that time I found recurrent cancer extending well up to the neck on the side of the breast cancer, and the glands in the axilla were involved. The patient not only had the cancerous condition, but was markedly anæmic, the liver was considerably enlarged, and she had a good deal of intestinal and gastric indigestion. On January 31, 1907, I removed all the tissues in the axilla, and the glands in the neck, taking everywhere a margin of healthy tissue. The wound healed by primary union. The patient returned home, free from external cancer, and lived nine months, dying of internal cancer of which she remained ignorant to the last.

Without this radical operation there would undoubtedly have been a rapid breaking down of the cancer, and her remaining days would have been spent in the mental and physical anguish entailed by a broken down and sloughing external cancer.

CASE II.—Mrs. C., consulted me eight years ago. She had cancer of the right breast and axilla, and beginning

¹The cases reported herewith are selected from the large number presented at the clinic.

^{*}Abstract of Fourth Annual Clinical Lecture, delivered at the New York Skin and Cancer Hospital, April 22, 1908.

disseminated spinal sclerosis, with certain paralysis of the lower limbs at no distant date. Her physician had told her that under no circumstances should she submit to operation, as the risk was too great. She was admitted to the Alston Private Hospital, and on May 5, 1900, we removed



Fig. 1.-Epithelioma and lupus erythematosus

all the diseased tissue. The wound healed by primary union, and the patient lived for two years, free from the thing she so much dreaded, though she became paralyzed below the waist.

To have consigned this woman to the horrors of death from or with a broken down cancer, particularly with paralysis an almost certain concomitant, would have been cruel in the extreme. Euthanasia would have been more justifiable on any basis of religion or ethics.

Case III.—Mrs. R., who came from the west to the New York Skin and Cancer Hospital, had been told by several physicians that the cancer in her right breast was too far advanced for anything to be done by operative procedure. I operated upon her in the latter part of 1904, removing, with great difficulty, the entire right breast and clearing completely the axilla. The wound healed promptly primary union, and the patient returned home in fair condition, remaining free from recurrence for a year. A little nodule then appeared in the secar and she returned to this hospital. On October 25, 1905, I removed all the diseased tissue. The patient remained well and strong for a number of months. She then began to have some trouble with the liver, acute pneumonia developed, and she died October 20, 1906, one year after the second operation. There was no local recurrence, and while the patient undoubtedly had cancer of the liver and perhaps of other internal organs, she never knew it.

With a cancer of the breast so far advanced as to be pronounced inoperable, had this not been removed by radical operation, her suffering, both of mind and body, can be easily imagined.

It has been said by some conservatives that our surgery in cases of advanced cancer is too radical—in the face of the unspeakable suffering of many of these patients it may be truly said, it were

"Better, almost, be at work in sin.

Than in brute inaction browse and sleep."
The doctor, and those who make up the immediate world of the victim of advanced cancer, are all too prone to say, "Oh, it is incurable—nothing can

be done." They fail to realize that the patient is a human being who, while suffering from cancer, it is true, may at the same time be the subject of any of the other ills to which human flesh is heir; they consider such an individual, rather, as a "cancer case," for whom little, if anything, can be done. In consequence of this attitude the cancer, rather than the patient, is treated, if, indeed, anything at all is done. The gloom of the doctor is reflected back upon the patient, and it is no wonder that the cry for something to end it all is often heard. If we can, by radical surgery or otherwise, throw into the darkness even one faint ray of light, surely it is the part of human kindness to do so!

We have classified the cases of irremovable cancer under the following heads: 1. Seemingly irremovable; 2, operable, but irremovable and yet curable; 3, operable, but irremovable and incurable; and, 4, inoperable, irremovable, and incurable.

Seemingly Irremovable.

A case may seem hopeless because, for various reasons, the cancer is apparently irremovable. The case may be inoperable, yet the cancer per se may be perfectly amenable to operation. How is this so?

(1) On account of the patient's condition in other respects than as regards the cancer. If the contraindicative condition is temporary, as in the case of concurrent acute conditions, measures should be instituted for its remedy. A case which is seemingly inoperable and irremovable may be rendered both operable and removable by proper care of the patient.

If the general condition of the patient, from whatever cause, is such as to render precarious the



Fig. 2. Epithelionia and lupus crythematosus,

administration of a general anæsthetic and the subjection of the patient to the shock of a major operation, and when local anæsthesia is impossible or inadvisable, time must be given to the general up

building of strength and bodily resistance. It is necessary in such cases, of course, to exercise judgment in the matter of how long operative procedure may be delayed for this purpose without jeopard-



Fig. 3 .- Epithelioma and lupus vulgaris.

izing the patient's life by allowing the malignant process to continue too long without surgical intervention. Herein many surgeons are remiss. The cancer obscures, in their eyes, all other conditions, and a case which is easily amenable to operative procedure after due attention to other conditions, is labeled "incurable," "inoperable," or "irremovable," and the patient consigned to the outer darkness which envelops every incurable case, whether of cancer or any other disease. On the other hand, the patient may be subjected to the risk of operative procedure before due attention is given to concurrent conditions, life being thus unnecessarily endangered.

This leads me to emphasize the fact that there is no such field in surgery as that of the so called "cancer specialist." There must be a wise balancing of diagnosis before a prognosis can be justly given, and the surgeon who operates upon a patient with cancer must be able to diagnosticate and cope with any condition in the whole range of general medicine and general surgery. He must be conversant with the essential features of dermatology, of pathology, of internal medicine, of gynæcology, and so on up and down the line. It would be folly to treat the case of lupus merely as such, when superimposed upon this is an actively growing epithelioma; contrariwise, it would not be fair to remove the tongue for carcinoma superimposed upon syphilis, without recognizing and treating the latter condition. And in like manner it would be absurd for the "cancer surgeon" to perform a laparotomy for uterine cancer and not be able to recognize and give proper attention to gallstones should they be present. .. The following cases illustrate these points:

CASE IV.—Epithelioma and lupus erythematosus. Mrs. P., Italian, aged sixty, referred to my service at the New York Skin and Cancer Hospital by Dr. L. Duncan Bulkley, November 5, 1907. Patient had had ten attacks of erysipelas, the last two years previously. Following the first attack lupus erythematosus appeared on the cheeks, temporal region, forehead, nose, and ears. Five years ago she began to receive treatment for this condition. x ray and ointments

being employed, with some improvement. Three months before admission she noticed a small crust in the temporal region. From this the condition, as shown in Figs. 1 and 2, developed. On November 9, 1907, the growth was removed, and the wound skin grafted. The natient is well to-day.

region. From this the condition, as snown in Figs. 1 and 2, developed. On November 9, 1907, the growth was removed, and the wound skin grafted. The patient is well to-day. Pathological Report.—Dr. H. H. Janeway, assistant pathologist to the New York Skin and Cancer Hospital, reported the growth to be epithelioma spinocellulare.

CASE V.—Epithelioma and lupus vulgaris. Miss M. M. M. and of the seven Thic cases we want for averianting.

CASE V.—Epithelioma and lupus vulgaris. Miss M. M., aged fifty-seven. This case was sent for examination through the courtesy of Dr. George H. Fox, under whose care she had been from time to time. Tuberculosis of the cervical glands appeared at the age of two years; the glands were excised, and the resulting sinus never healed. At the age of fifteen lupus vulgaris developed at this site, extending all over the face and neck of the same side. In December, 1906, epithelioma appeared over the site of one of the curetted lupus nodules. This was treated with x ray for a number of months without benefit. When seen by me it was too late for surgical interference, the condition being as shown in Figs. 3 and 4. The patient recently died from hæmorrhage.

CASE 'VI.—Cancer of the breast and uterine fibroids. Mrs. A: F., aged forty-eight, private patient, referred to me for operation for cancer of the uterus. Right breast had been amputated four months previously by another surgeon. Shortly after recovery from this operation the patient had one or two uterine hæmorrhages, and for the first time the physician made a vaginal examination. He found a large tumor in the uterus and pronounced it a case of advanced cancer. He expressed to the husband his doubt as to the possibility of anything being done, but advised trying. I saw the patient in consultation and made a thorough examination. The uterus was retroverted, there was some fungous endometritis, and a fibroid the size of a large orange was found in the fundus. In the right side, where the drainage had been inserted at the time of the breast amputation, were a few small nodules, extending into the axilla. In the left breast was an actively growing malignant tumor, with lower axillary glands enlarged. The patient was sent away for a few days' rest in the country, and upon her return we removed the left breast, clearing the axilla, and curetted the uterus. Her condition has been much improved since the operation. A few nodules have appeared in the skin over the sternum, carcinoma en currosse, which seem to be diminishing under treatment with x ray.

Pathological Report.—Dr. Janeway reported upon the tumor from the left breast as follows: "Carcinoma of the duct carcinoma type. The tumor is very rich in cells and is very malignant. The piece of fatty tissue removed from



Fig. 4 .- Epithe'ioma and lupus vulgaris.

beneath the clavicle is involved, i. e., cutaneous carcinoma." The scrapings from the uterus showed simple endometritis. CASE VII.—Ovarian cyst; ovarian cancer; chronic appendicitis; gallstones. Mrs. J. L., private patient, aged forty-six years. Admitted to the New York Skin and Cancer Hospital, April 29, 1907, for operation for removal

of an ovarian cyst of the proportions shown in Fig. 5. She had complained of headache, pain in the back, a dragging sensation on walking or standing, enlargement of the abdomen, and occasional vomiting.

Operation April 30, 1907. Through a median incision a



Fig. 5. Ovarian cyst with caremonia of other ovary and gallstones.

globular fluctuating cyst was found to spring from the right ovary. A canula was introduced and sufficient fluid withdrawn from the cyst to allow of its removal through a moderate sized wound. The broad ligament was then clamped off and the cyst, with right ovary and tube, severed and removed. The cyst weighed twenty-six and one half pounds. The left ovary contained small cysts, and was the seat of a tumor the size of a hickory nut, which suggested-beginning carcinoma. The left ovary was excised, and the tube left. The appendix, which was bound down by adhesions, was removed. The gallbladder was found much distended and containing gallstones. The gallbladder was found much distended and containing gallstones. The gallbladder was stitched into a vertical cholecystostomy wound just below the edge of the ninth costal cartilage. Two days later it was opened and fifty gallstones removed. drainage was allowed.

Pathological Report.-Dr. Martha Wollstein pronounced

Pathological Report.—Dr. Martha Wollstein pronounced the tumor of the left ovary to be carcinoma.

Case VIII.—Gumma of tongue. J. T., male, aged thirtyone, admitted to the New York Skin and Cancer Hospital, June 19, 1907. Negative luctic history given. Nine months before admission patient naticed a small "sore" at base of tongue, near the centre of the dorsum. During my absence from town the diagnosis of cancer of the tongue was made by six different doctors. When I returned the patient was on the table, ready to be anæsthetized for operation for removal of the tongue. I made an examination and found the condition shown in Fig. 6. A deep ulceration, about one inch wide, extended backward from the posterior two thirds of the dorsum of the tongue to the epiglottis. The edges were irregular and elevated, and the floor uneven and coated. The edges were soft and friable, and from this portion sections were removed for microscopical study. Cervical and supraclavicular glands were enlarged. I re-fused to operate, and immediately placed the patient upon antisyphilitic medication, with the result that the ulceration completely disappeared. The correctness of my diagnosis was further shown by the pathological reports from Dr. Martha Wollstein, of the Rockefeller Institute, and Dr. H. H. Janeway, assistant pathologist to the New York

Skin and Cancer Hospital, both of whom rendered negative reports so far as cancer was concerned, each suggesting quiescent tuberculosis or syphilis as the probable condition. No tubercle bacilli were found; Spirochætæ pallidæ not stained for

I need not dwell upon the horrible mistake that would have been made had the diagnosis of cancer been accepted and the patient's tongue extirpated, as would have been necessary with a cancer of such proportions and duration.

(2) Concurrent complications in the neighborhood of the cancer may lead to the diagnosis of irremovable malignancy. There may be tissues in the neighborhood which are involved in inflammatory reaction, neighboring glands may be the seat of pus collections, and various other complications may for the time obscure the prognosis in the minds of those not skilled in such matters. Even the expert should be on guard against error. Under such circumstances both the complication and the cancer itself are sometimes neglected because of the seeming hopelessness of the condition. Many times the cancer may be complicated by septicæmia or sapræmia, and it may be this condition more than the cancer which for the time overwhelms the patient. The following case illustrates this point.

CASE IX.-Epithelioma of foot; femoral abscess. Mrs. A. D., aged fifty-four, admitted to the New York Skin and Cancer Hospital March 23, 1908. Three months previous to admission she first noticed a small growth on the dorsal surface of the left foot, just in front of the external malleolus. This grew to about the size of a walnut. On the same side the glands in the inguinal and femoral regions recently became enlarged, an acute infection along the line of the cancer invasion resulting in a large fluctuating mass in the left groin, with the systemic symptoms of sepsis.

The physician in charge diagnosticated the entire condition as one of rapidly disseminating cancer. On admission the distinctive diagnosis was made of cancer of the foot, with slight metastasis in the groin, and with large abscess in the femoral region. The abscess was opened, and as soon as the pus was evacuated the patient made a rapid con-



I to, 6.- Syphilis diagnosticated as cancer

valescence from the acute symptoms, marked relief being secured. Since that time the cancer of the foot had been removed and the glands in the groin extirpated. The patient still had some cancer, but she was able to leave the hospital in very much better condition.

Pathological report showed the tumor on the foot to be

epithelioma and the glands to be carcinomatous, but the condition from which the patient suffered most was the sepsis.

(3) Cases are sometimes consigned to the inoperable and hopeless class because of the risk to the



Fig. 7.—Carcinoma.

patient from operative procedure seems too great to be incurred because of the extensive involvement, as well as on account of the patient's lowered vitality. The risk is undoubtedly too great in many cases, but fortunately in many others it is not. Unfortunately, however, in many of the latter instances patients are given up to die who, by timely intervention, might be literally snatched from the grave, to live years thereafter, absolutely free from the disease.

To this latter class belongs a patient who had an extensive carcinoma of the tongue and neck, whose case has been previously reported. The patient has been presented at each of the annual clinics and upon other occasions, for several reasons: First, because, so far as I am aware, he represents a case of the most extensive surgery of the mouth and neck on record; second, because of the persistent reports that the patient has succumbed to the inevitable; and, third, because it has been charged that, "after all, it was not a case of cancer, or the patient would not be alive."

CASE X.—There was in this case extensive involvement of the tongue, floor of the mouth, and glands of the neck, and when first seen the patient was in no condition to undergo as extensive an operation as eradication of the disease entailed. For the time being he certainly was inoperable and the cancer irremovable. By a few days of rectal feeding, improving the condition of the mouth, flushing out the kidneys and toning up the whole system, the margin of danger was lessened, and while the risk was very great, the patient determined to take the chance.

The submaxillary and sublingual glands on each side were removed, the salivary ducts were extirpated clear into the mouth, and many cancerous glands from the tonsils to the dome of the pleura on one side and to the division of the carotid artery, on the other, were dissected out. Two weeks later the entire tongue, floor of the mouth, and most of the soft palate were completely excised. Both lingual arteries were tied, and all lymphatic and connective tissue in juxtaposition to the disease removed.

This was done in March, 1904, and the patient is perfectly well and strong to-day, with no sign whatsoever of

a recurrence of the disease. He was present at the clinic and spoke in the hearing of all.

The published pathological reports of undoubted cancer, given by two independent pathologists of distinction, refute the statement above referred to that the disease was not malignant.

Operable but Irremovable, yet Curable.

The word curable as applied to cancer is, as one may readily appreciate, a relative term. Strictly speaking, we do not cure the cancer-we remove it; and in the vast majority of cases, when it is impossible to remove the cancer, it is impossible to effect a cure of the patient. This is in line with the statement previously made that to-day surgical procedure is the only dependable means of eradication of malignancy. Then, too, there are those who hold that it is impossible to fix a time limit upon recurrence, and who deny that if the disease does not return in three or five, or any number of years, the case may be pronounced cured. On the other hand, statistics amply justify the so called three year limit. However this may be, we know that in a very limited number of cases cancer disappears of itself, with no further manifestations of the disease. This is common in mouse cancer, thirty per cent. of those which have been recorded being said to heal spontaneously. In man it would be more than foolish to fold our hands and wait patiently for an epithelioma or a sarcoma to disappear spontaneously because so called cancer in mice is said to do so in such a large proportion of cases. We must remember that it is a serious question whether cancer in the mouse is at all analogous to cancer in man, and we do know that spontaneous cure in the human subject is extremely rare.

In still another limited number of cases of advanced cancer which is operable, but in which it is impossible to remove the entire growth, by removing as much as possible and instituting other measures, Nature seems to be able to cope with the malignant process and to reduce it to such a state of subjugation that it disappears or remains so completely



Fig. 8.-Carcinoma.

quiescent that the patient lives a number of years, and is to all intents and purposes cured. Dawbarn, in his book on the Starvation Treatment of Certain Malignant Growths. relates such cases. In one of these, the first in whom he operated by this method,

American Medicine, March 25, 1905, and Atlanta Journal Record of Medicine, June, 1905.

and the first reported in his book, the operation was performed on June 1, 1895, and on going to press, March, 1903, eight years later, the patient was perfectly well. In this case a round celled sarcoma involved the nasopharynx, filling both nares, rendering deglutition and respiration difficult, and interfering It caused severe headache and with articulation. dizziness, and bled profusely upon the slightest touch. The patient had been treated, previously to consulting Dr. Dawbarn, with injections of the mixed toxines of Bacillus prodigiosus and Streptococcus erysipelatosus, with no good effect upon the tumor. Another surgeon, whose name Dr. Dawbarn withholds from publication, declined any intervention whatever, pronouncing the case hopeless. With the idea of giving temporary relief to the dyspnæa and dysphagia, Dr. Dawbarn tied off the right external carotid artery at its origin in the hope of shrinking and starving, for a little time, the growth. Subsequently the more radical operation of complete excision, from end to end, of the left external carotid artery was performed, its eight branches successively being tied and divided between two ligatures. This was the first time the operation was ever performed, and the results in this and many other cases are certainly monuments to radicalism in cancer surgery.

Dr. Dawbarn's method was later modified by Dr. Wveth, who introduced the idea of injecting boiling water or some plastic substance, such as paraffin, into the terminal branches of the external carotid. I have employed this procedure in a number of cases with satisfactory results.

It is sometimes possible, also, by other measures to effect a cure where the growth is removable only in part. The following case illustrates this:

CASE XI.—Melanotic sarcoma. G. W. C., aged forty-four, admitted to a private hospital in this city in December, 1902. For a number of years a mole, about the size of a French pea, slightly pigmented, had been present on the posterior surface of the left wrist. One year before admission this was irritated and infected, following which an abscess formed in the axilla. The mole was incised and the axillary abscess opened. The wound in the wrist healed but a discharging sing remained in the axilla. healed, but a discharging sinus remained in the axilla. At the time of admission there was an indurated mass the size of a hen's egg in the axilla, and a great deal of inflammatory tissue in its neighborhood. The patient was poorly nourished and anaemic. All inflammatory tissue, with the involved lymphatic nodes, and the walls of the sinus, were removed en masse. The disease was found to extend well up to the clavicle, occupying Mornheim's space above and completely surrounding the subclavian vein to its entrance into the chest. The axilla was thoroughly cleared, but it was impossible to remove all the disease. The outer surfaces of the ribs were scraped, and the external intercostals, which were evidently diseased, were curetted for some distance. The wound was closed except for a drain at its most dependent portion. The ulcerating, indurated mass on the wrist was excised, with a margin of healthy tissue. The patient was discharged in two weeks, and has re-

mained well ever since, with perfect use of his arm.
Pathological Report.—Dr. Martha Wollstein reported "melanosarcoma of an axillary lymph node."

Between the second and third classes, namely, the operable and irremovable, yet curable, and the operable, irremovable, and incurable, may be placed the

following case:

CASE XII.—Malignant papillomata. R. V., aged twenty-nine, married, housewife. Patient had had an exploratory laparotomy performed previous to consulting me,

he Dissbarn inform me that when last heard from, in 1907, the patient was still perfectly well.

the clinical diagnosis of round celled sarcoma being made at the time. She first consulted me May 18, 1907. Clinical evidence did not, in my opinion, justify the diagnosis given, and an exploratory laparotomy for diagnostic purposes was performed June 12, 1907, in the New York Skin and Cancer Hospital. Papillomatous degeneration of the uterus, tubes, and ovaries was found, extending to the intestines and well up toward the liver. A detached portion was removed for microscopical examination, the report being "malignant papilloma." Ten days later panhysterectomy was performed, and a large amount of fluid evacuated. A large papillomatous mass in the pelvis was also removed.
On November 12, 1907, I performed a third laparotomy for the purpose of removing fluid and more papillomatous masses. On January 11, 1908, a similar operation was performed. At this time there was less fluid and a distinct decrease in the number of papillomatous nodules. On March 6, 1908, the patient returned to the Skin and Cancer Hospital, when paracentesis abdominalis, under local cocaine anæsthesia, was made, and eleven pints of serosanguinous fluid evacuated. On April 14, 1908, the last operation was performed, when fluid was evacuated and more of the papillomatous masses removed. No abdominal adhesions were found upon this occasion.

At each successive operation the papillomatous degeneration was found to be less extensive, and the ultimate out-come of the case will be watched with interest and the case reported more in detail later. At each of the last four operations oxygen gas was introduced into the abdominal cavity, this feature of the case being reported in the New York State Journal of Medicine, June, 1908.

Operable but Irremovable, and Incurable.

The cases which come under this head may be inoperable so far as complete removal of the diseased tissue is concerned, and yet much may still be accomplished by surgical and other means to relieve suffering, lessen fœtor, and prolong life.

The management of these cases may be considered

under the following heads:

(I) Treatment of the patient, as we have before suggested. In many instances the patient is cachectic more from the locking up of the secretions by physical inactivity, by insufficient or improper food, and by morphine than by the disease itself. A well person, given equal amounts of morphine and having the bowels and all the secretions locked upthereby, might have an almost cancerlike cachexia. All this should be attended to, and the emunctory organs made to functionate as well as is possible under the circumstances. Tonics, digestives, good food, plenty of air and sunshine, will do much toward helping the patient to fight the battle to the

(2) Treatment of the indirect conditions caused by cancer. A malignant tumor may cause obstruction of the nose, for example, of the œsophagus, of the stomach, etc., and to relieve this obstruction it may be necessary to resort to tracheotomy, esophagostomy, gastrostomy, enteroenterostomy, etc., as the case may be. In case of obstruction of the bladder suprapublic cystostomy or perineal drainage may be necessary. The following is a case in point:

CASE XIII.—W. A. R., male, aged thirty-four, admitted to the New York Skin and Cancer Hospital January 15, 1908. A mass was found in the right side of the neck the size of an orange, and in the left the size of an egg, each of about two years' duration (Figs. 7 and 8). These masses were so located and of such size as to prevent the patient from opening his mouth freely, and to cause marked dysphagia and cyanosis. It was impossible to remove all the diseased tissue, but two operations were performed and enough obstruction relieved to give the patient much greater comfort. In fact, his condition was so much improved that he was confident of ultimate recovery. On April 18, 1908, his breathing became very bad and it was necessary to resort to rectal feeding. I assured him that it would be necessary to insert a trachectomy tube in order to prolong his life, but so sure was he that he would recover, and with the belief that the trachectomy would interfere with his profession of playing a wind instrument, that he refused his only chance of life, and died two days later. Had he consented to the trachectomy operation his life might have been prolonged for many months.

An irremovable tumor in the axilla, either a primary growth, or, more frequently, a recurrence following mammary cancer, may, by pressure upon the lymph vessels, cause marked and painful swelling of the arm, the condition being sometimes known as "big arm." Mr. Handley, of Middlesex Hospital, London, has recently devised a simple operation for the relief of this condition. The swollen arm is drained by a number of buried silk threads, which, by capillary attraction, carry away the excess of fluid.

When the growth presses upon nerves, causing the most excruciating pain, this may be relieved by cutting the nerves pressed upon. In a number of instances of cancer of the floor of the mouth I have cut the branches of the inframaxillary division of the fifth nerve, giving great relief.

Case XIV.—An instance of this is the case of a man, thirty-five years of age, who consulted me in December, 1907, with irremovable cancer of the floor of the mouth and back of the throat. The pain was intense, and by cutting the nerves on both sides the patient was greatly relieved.

(3) Tying off blood vessels in the carotid region. Dawbarn's method, already mentioned, aims at checking the malignant process by cutting off its blood supply; this is also applicable in the carotid region for the control of hæmorrhage, and the furtherance, thereby, of whatever other methods of treatment may be applicable in the individual case. The growth may so erode vessels that the slightest manipulation is liable to cause a rupture of the wall of the vessel and consequent hæmorrhage. A case in point is the following:

Case XV.—M. W., male, aged forty-eight, admitted to the New York Skin and Cancer Hospital April 1, 1908. Examination revealed a cyst the size of a hen's egg, with a mass of induration underneath it seemingly fixed, in the submaxillary region on the left side. Inside the mouth was a fungoid mass attached to the inferior maxillary bone and the left inner side of the cheek. This bled readily, and caused an excessive flow of saliva. For a year and a half his jaws had been very stiff, and when examined he could open his mouth only half an inch. He suffered severe pain, especially at night. Examination under an anæsthetic showed the entire left inferior maxillary bone, mucous membrane of the left cheek, and submaxillary glands to be involved, and the floor of the mouth was filled with cancerous material.

On April 11, 1908, the submental, submaxillary, and superior carotid triangles were explored. In the submental region a tumor mass the size of a hen's egg, which was closely adherent to bone and fascia, was excised. The submaxillary lymph glands were involved and were removed. On account of the extent of the disease an incision was made down close to the external carotid artery before the mouth was opened at all. When the mouth was opened rupture of one of the ulcerated vessels occurred, and immediately there was a terrific arterial hæmorrhage, which undoubtedly would have proved fatal in a few minutes but for the timely tying off of the external carotid. The hæmorrhage was controlled by this means and the operation was continued. In addition to the external carotid the sublingual, superior thyreoid, ascending pharyngeal, facial, and posterior occipital were tied off separately. The patient's condition was so poor and the vessels so ulcerated that I thought it wise not to inject paraffin at this time. Subsequently the external carotid of the opposite side was in-

jected with paraffin and all the branches, with the exception of the two terminals, tied off.

(4) Tying off vessels in the pelvis, in inoperable uterine and other pelvic cancer, lessens the danger of hæmorrhage, decreases fætor, and renders it possible to proceed with the necessary surgical intervention, such as curetting, cauterizing, etc. It also diminishes the rapidity of growth in some instances, lessens pain, and frequently prolongs life. The ovarian and uterine arteries, or, if the uterine cannot be reached, its nearest branches, may be tied off; or the anterior division of the internal iliac may be ligated on the side of the most extensive disease, the uterine and ovarian of the opposite side being ligated at the same time. The ovaries are removed in each case.

This procedure has been successfully applied in the following cases, among many others:

CASE XVI.—Mrs. F. W., aged thirty-nine, admitted to the New York Skin and Cancer Hospital, June 22, 1907, with advanced cancer of the rectum and vagina. The anterior rectal wall and the diseased portion of the vagina were exsected. Patient made an uneventful recovery, and remained in fair condition until February, 1908, when she returned to the hospital, complaining of great weakness, insomnia, pelvic pains, and frequent micturition. Operation February 7, 1908. Uterus, both ovaries and tubes, adjacent portions of broad ligaments, and bladder were found to be the seat of extensive cancerous disease. The uterus was so involved that operative procedure upon this organ was impossible. The uterine arteries could not be reached, but both ovarians were ligated, and both broad ligaments near the wall of the pelvis were also constricted by ligature, with the hope of shutting off the blood supply to the uterus. Both ovaries and tubes were removed. Patient's condition at the present time very much improved. She is able to be up and about, and is comparatively comfortable

be up and about, and is comparatively comfortable.

CASE XVII.—Mrs. M. D., aged fifty, admitted to the New York Skin and Cancer Hospital November 29, 1907. Irremovable carcinoma of cervix, with secondary involvement of the body of the uterus and the broad ligaments; extensive adhesions. Operation December 5, 1907. Profuse hæmorrhage resulted from attempts to isolate tubes and ovaries. In order to control this the ovarian arteries and the upper branch of the uterine artery were ligated. It was impossible to reach the uterine artery itself on account of adhesions. Both tubes and ovaries were removed. Further operative measures were impossible on account of extensive involvement of the body of the uterus, broad ligaments, rectum, and pelvic fascia. Patient was discharged December 30, 1907, in fair condition. At the time of the clinic she was able to be about, and though going down hill, she was certainly better than she would have been without operation.

(5) Other methods than surgery may be employed in this class of cases with appreciable benefit in some instances and with some of the measures usually adopted. The name is almost legion of agents which have from time to time been exploited for the cure, first, and then for the amelioration of cancer. With our position perfectly clear, namely, that, barring a few superficial growths of small size, the only means of cure is found in surgical procedure, we may safely consider some of the measures which offer possibilities for amelioration.

A.—X ray undoubtedly occupies a limited field of usefulness in irremovable cancer, as an adjuvant to other measures. It may lessen pain and foetor, check the ravages of the disease to a certain extent, and help, by its psychic effect and otherwise, to make the patient more comfortable. It is at times useful in the treatment of secondary superficial skin involvement, causing the absorption of nodules of metastasis.

I cannot refrain, however, in this connection, from sounding a protest against the indiscriminate use of x ray, alone or with various other measures, when more effective methods may be employed. There is never, from the incipiency of the malignant process, any time to lose with doubtful agents, but there comes a time when such delay is deplorable in the extreme, and even fatal to life. In this institution we see the end results of such methods, and it is borne in upon us more and more that they should, with the exceptions above noted, be confined strictly to purposes of amelioration in cases not amenable to surgery.

B.—High frequency current, by its effect upon the general system, has some beneficial influence upon the patient rather than upon the cancer, and when practicable it may be well enough to add this

to the adjuvant treatment.

C.—Fulguration, the application of high potential, high frequency electricity, has attracted more or less attention recently, particularly in France, through the work of de Keating-Hart, who first suggested it. The patient is profoundly anæsthetized and a sharp point discharge sent into the cancer. It is supposed to act as a powerful cauterant, burning away the sloughing and broken down tissue. It is not intended to take the place of any curative agent, though it has, like other palliative measures, been employed in cases which were amenable to surgical treatment. Its use is also limited to external cancer. Czerny and others who have employed this method report favorably upon its effects in the class of cases mentioned, holding that it is more effective than radium or x ray.

D.—Leucodescent light has proved of some benefit in the amelioration of pain in cases of the class

under discussion.

E.—Radium is still employed by a few persistent advocates who allege to have wonderful results from its use. It has been faithfully tried in this hospital, and cast aside as accomplishing nothing that cannot be more satisfactorily effected by other methods. For the removal of small, superficial growths it is sometimes effectual, leaving a very good scar, but in cancer it has done far more harm

than good.

F.—Mixed toxines of Bacillus prodigiosus and Streptococcus erysipelatosus (Coley's fluid) is another agent which has clamored vociferously for attention and approval since 1891, when Coley published his original observations. It is now limited to the treatment of certain types of sarcomata, and should be confined to the treatment of inoperable cases, but, like x ray, radium, and the rest, it has been used in many cases which should have been subjected to surgical intervention. Even in inoperable cases, however, its value seems to be far from established.

G.—Streptococcus pyogenes (Wyeth). Dr. Wyeth has for a number of years employed the toxines of the Streptococcus pyogenes in inoperable cases of sarcoma, reporting a number of favorable results. We are using this method in two cases of my service at the New York Polyclinic Medical School and Hospital at the present time. The first patient is a child two years of age, with osteosarcoma of the radius. The condition is perfectly amenable to surgical treatment, but because of the

refusal of the mother to consent to the necessary operation, amputation of the arm, the child is placed in the inoperable, irremovable, and, if this treatment is ineffectual, in the incurable category. The other case is a woman, thirty-five years of age, with a sarcoma the size of her head, in the neck.

H.—Oophorectomy (Beatson), for inoperable cancer of the breast, has been advocated, either with or without the administration of the extract of thyreoid gland, the object being to facilitate the fatty degeneration of the cancer elements. In some of the cases reported by Beatson and others results have been favorable, the disease completely disappearing. In others recrudescence has followed the disappearance, and in still others the method has met with no success whatever. Inasmuch as it is a serious matter to subject a patient with inoperable cancer of the breast to such an operation, the method has not met with extensive approval.

I.—Pancreatic enzymes. In our efforts to find something which will lead to the dawn of a better day for the cancer sufferer, when something will appear which will relieve us of this terrible scourge and eliminate the disease without the necessity of recourse to surgery, we are constantly reaching out for the newer methods which give us any reasonable hope of fulfilling the promises made for them. New candidates for favor are constantly presenting themselves, and one by one they reach their rightful place of complete elimination, or are confined to the palliative treatment of incurable cases. Of these the pancreatic enzymes, trypsin and amylopsin, with the adjuvant treatment, are conspicuous examples. For many months past we have been trying this method in this institution and in private practice, giving it a fair and accurate test. In the autumn a full report of two years' experience with the treatment will be published, but at present the question is sub judice.

In addition to the methods I have mentioned several other agencies are at present receiving more or less attention, among which may be mentioned inoculation with the various other gland products, the thyreoid, thymus, liver, etc.

Inoperable, Irremovable, Incurable.

We come now to the last division of our classification, the cases in which everything that is possible has been done by surgical means, in which all hope of cure is gone, and in which our sole aim is to alleviate the suffering of the patient and the discomfort of those about the patient, by lessening the feetor and discharge. It is well known that some of these individuals live a number of years with what the laity call an "eating cancer," and those years, or whatever the length of remaining life, should be made as comfortable as possible. What I have said about treating the patient applies even more to this class than to the others. Every care and attention should be given to such patients to help them bridge over the remaining span of life. So far as cancer itself is concerned, attention is chiefly directed to lessening pain, fector, and discharge.

Pain may, to a certain extent, be controlled by morphine, always to be counterbalanced by something to offset its bad effects. If there is sweating, atropine may be given with it, or if it is to be given over long periods of time it may be admin-

istered in the form of the U. S. solution with clivir of lactopeptin. Acetphenetidin, 10 to 15 grains twice daily, will sometimes be sufficient to control even severe pain and to make the patient fairly comfortable. Antipyrine and acetanalide may also be used. The depressing effects of the coal tar products should be modified by stimulants.

Alcohol, in moderation, taken with food, may be useful. The diet should be wholesome and varied. There is almost invariably a tendency to hyperacidity in these cases, hence alkaline waters should be given. Intestinal antiseptics and antacids are help-

ful.

The fungating masses should be kept clean by frequent dressing. The galvanocautery, zinc chloride paste, and lotio pancreatis applied locally will help to keep the surfaces clean and to lessen fœtor. It must not be forgotten, however, that while pastes and even lotio pancreatis may smooth off the surfaces, they may at the same time erode blood vessels and thus give rise to severe and perhaps fatal hæmorrhage. Where the cancer has eaten its way through, leaving openings, as in the pharynx or base of the mouth, the compound tincture of benzoin with nosophen or arystol (Bainbridge's modification of Whitehead's shellac) can be used to plug the openings. Adrenalin chloride is also useful. Terchloride of antimony will help to check hæmorrhage and lessen fœtor in advanced uterine cancer after the vessels have been tied off and as much of the disease removed as possible.

It should be borne in mind that the discharges are often offensive far more from the action of putrefaction or pyogenic organisms than from the cancer itself, and attention should be directed to keeping the surfaces clean by the use of various antiseptic ointments and washes. Deodorizers, incense, etc., may be used in the room to make the atmosphere less

disagreeable.

Irremovable cancer is a difficult and many times discouraging condition with which to deal, and the surgeon who is trying to keep down his mortality records and to swell the list of brilliant surgical feats, is not apt to consume his valuable time with incurable cancer; yet the physician or surgeon who fails to do the very utmost for such patients who may confide themselves to his care, or to refer them to those who will give them the proper attention, is false to his Hippocratic oath as well as to his duty to his fellow man.

34 GRAMERCY PARK.

THE INTERNATIONAL CLASSIFICATION—ITS ADVANTAGES, DEFECTS, AND

DEFICIENCIES.*

By Cressy L. Wilbur, M. D., Washington, D. C., Chref Statistenan, Bureau of the Census

I have been asked to prepare a paper for the section under the above title by the chairman of the Committee on Programme, and gladly embrace the opportunity because the question of revision is now upon us, and a year earlier than we anticipated a short time ago.

It is not necessary to say that I refer to the International Classification of Causes of Death—and Sickness.' One of the brightest pages in the long and honorable history of the American Public Health Association is its early indorsement of the International Classification, at a time when the movement was weak, and without which the general extension of this system, which appears to be the only hope of securing uniform and thoroughly comparable statistics of causes of death and illness throughout the world, might have perished. Or, rather, might have been postponed for many years, for it must inevitably come.

At the meeting of the American Public Health Association at Ottawa in 1898 the following resolution was adopted, after a year's consideration:

Resolved. That the American Public Health Association recommends that the Bertillon classification of causes of death be adopted by all of the registrars of vital statistics in the United States, Canada, and Mexico, as soon as the changes from the systems now in use can be conveniently made.

At the recent meeting of the American Medical Association at Chicago, June, 1908, the House of

Delegates unanimously voted as follows:

Resolved, By the American Medical Association:
1. That the International Classification of Diseases and Causes of Death be recommended for all official mortality and morbidity statistical reports.

2. That the Committee on Nomenclature and Classification of Diseases present a report on the Nomenclature of Diseases of the Royal College of Physicians of London to the Association at its meeting in 1909, with such recommendations as may seem advisable for American usage, and with the assignment of each term indicated according to the International Classification.

3. That a tentative reconstruction of the International Classification be framed on the basis of the foregoing report, and recommendations be drafted for submission to the International Commission of

Revision.

4. That inquiry be made as to the possibility of holding the next Decennial Revision of the International Classification at Washington in 1910 in connection with the International Congress of Hygiene

and Demography.

5. That after the revision of the International Classification in 1910 the nomenclature of diseases be recast in corresponding form, so that there will be available under a uniform arrangement and with precise agreement in the meaning of terms: (1) International classification of causes of death; (2) international classification of sickness and disability: (3) international nomenclature of diseases and injuries.

At the time of the adoption of these resolutions it was supposed that the date of the second decenial revision would be 1910. You may recall, however, that in my paper presented to the American Public Health Association two years ago, some reasons were given why it was desirable that the revision should be conducted in the years 1909, 1919, etc., rather than in the years 1910, 1920, etc., and

^{*}Read before the Section in Vital Statistics of the American Pullic Health Association at the thirty-sixth annual meeting, held in Wimiting, Catasha, on American 12, 1, 18, 1808

^{&#}x27;I have not referred to the application of the International Classification to morbidity and hospital statistics because this subject comes in the special province of Major Mason, representing the medical describes to the United States army, which has employed and the control of the United States army, which has employed and the control of the United States army, which has employed and the control of the United States army, which has employed and the Control of the United States army, which has employed and the Control of the United States are control of

very shortly after the date of the Chicago meeting of the American Medical Association an announcement was received from Doctor Bertillon of which the following is a translation:

Direction des affaires municipales, Statistique municipale, 1, Avenue Victoria, Parts, June 1, 1998

Sir and Honored Confrère:

I have the honor of forwarding to you a copy of the International Classification² of Causes of Death, in use in a large number of countries. I shall be grateful if you will make a careful examination of it and transmit to me the critical observations that may suggest themselves to you. These remarks will be studied, classified and collated in order that they may be submitted for examination by the International Commission charged with revising the classification.

This Commission will hold its second session in the

course of the following year.

The following is a brief outline of the history of the

At the instigation of several scientific societies, notably the American Public Health Association, the International Statistical Institute, etc., the minister of foreign affairs of France invited the different powers to send representatives to a commission charged with drawing up an international classification of causes of death, with the purpose of rendering nosological statistics comparable among the different countries. The classification adopted by the International Statistical Institute was previously submitted to the examination of a large number of statistical authorities. Their observations were classified and printed in the form of a brochure in order to serve as a basis for the final examination of the commission. Twenty-six countries accepted the invitation of the minister of foreign affairs; the commission, composed enminister of foreign analys, the commission, composed circly of official delegates, was in session during the 18th, 19th, 20th, and 21st of August, 1900, and after a thorough examination adopted the classification a copy of which I am forwarding to you. It declared that it was desirable that its work should be revised every ten years, in the absence of the course of the appropriate and it requested that sence of any other arrangement, and it requested the French government to see to convening the commission. I have been especially empowered to take the necessary measures.

Quite recently the officials of the Census of the United States expressed the desire to have this date advanced by one year, on account of the census, which is to take place in the United States and in a great many other

countries, in 1910.

As a great many other countries considered the mat-ter in this light, and as no country has opposed the plan, the minister of foreign affairs of France has informed

plan, the minister of foreign affairs of France has informed me that his department makes no objection to the choice of the year 1909 for assembling the commission.

The International Classification has been adopted by all of the countries of North America, by nearly all those of South America, by all the countries of Australasia, by Japan, by the countries of Western Europe (Spain, France, Delaying Lighted the Countries of Mestern Europe (Spain, France, Countries) Belgium, Holland, etc.), by some others (Bulgaria, etc.), and by several cities of Austria and Russia.

I shall be glad to receive your observations and criticisms before the first of November following.

Very respectfully yours,

DR. JACQUES BERTILLON, Chief of Statistics,

Secretary General of the First Session of the International

Immediate action is therefore necessary, instead of the more leisurely procedure that would have been possible if the year had remained 1910, and we are very fortunate that there is now a thoroughly organized General Committee on Nomenclature and Classification of Diseases and Causes of Death constituted by the American Medical Association in 1907 and continued in 1908, which is actively cooperating with the committees of other national organizations in the United States, with the Committee on Causes of Death and Revision of the International Classification of this section of the American Public Health Association, with the government medical services (Army, Navy, and Public Health and Marine Hospital Service), and with the Bureau of the Census.

The exact plan of organization of the International Commission of Revision, which will meet at Paris next year, cannot yet be stated, except that. as in the session of 1900, each country will be repre-

sented by official delegates.

With this preliminary statement, I shall now proceed with the special subject of the paper. Any suggestions made should be considered as entirely informal, although they will be submitted for the consideration of the general committee, and some of them may perhaps be regularly included in the recommendations for the revision.

Advantages of the International Classification.

The chief advantage of the International Classification is the fact that it is truly international. It is in practical use, according to Doctor Bertillon, in twenty-two different countries, and gives for them readily comparable results." The ease with which statistics of causes of death from countries using this system may be compared, and the difficulty of reducing dissimilar systems to a common denominator, may be seen in the international tables of causes of death published by the French government. No further argument is necessary under this head.

The above statement may be taken as referring to the printed tables of statistics, in which the causes of death are ranged in order after compilation. For the practical work of a registration office the question is, How are they compiled? What terms found in the returns of deaths are listed under each title? The International Classification takes us behind the scenes in this respect as no other system does, and while the results may undermine to some extent any preconceptions as to the infallibility of official statistics of causes of death, they point out the only way in which such statistics may ultimately be placed upon a thoroughly sound basis.

Lastly, for I shall not go into detailed comparisons of the titles and arrangement of the International and other classifications, we have—thanks to the original suggestion of the American Public Health Association-provision for a regular decennial revision, with the cooperation and active participation of the registration offices of the countries using the system, whereby any of the defects and deficiencies of which I shall come to speak, many of which arise from the increase of knowledge during the past ten years rather than from any fault of the commission of 1900, may be readily eliminated.

Defects and Deficiencies of the International Classification.

These terms are to some extent synonymous. The International Classification is deficient or in-

ferable trace internationals," proposity used in French is pre-ferable trace and "international clevidity, and in the course Music I not instantian Termin (analy), rather than "international gomenclature." A nomenclature of diseases is a guite different prey char of the Royal College of Physicians of London

Bulletin de l'Institut international de statistique, xvn. 4, 1907. Statistique generale de la France, 1907.

adequate in some respects, and this of course constitutes a defect. It has also certain marked defects or blemishes. I shall not attempt to maintain this distinction, but shall first consider some of the general features in which we might make some improvement, and then proceed to the consideration of desirable changes in titles and in the individual terms included under them. For this is to be constructive, not destructive, criticism; and it is desirable that every user of the statistical tables of causes of death shall at this time call attention to every feature that requires amendment so that the suggestions can be considered in the work of revision. And thereafter, for the next ten years, let us hold our peace and loyally use the revised system until the time shall again come for the regular decennial revision. It is just as important that we shall have a fixed basis of statistics between the dates of the International Revision as that we shall bring the system strictly up to the latest knowledge when that work is undertaken. If every office using the class-ification is free to make individual modifications during the interdecennial period, the statistics soon become uncertain, and we shall lose the chief advantage to be gained from international uniformity and conformity. Hence let us make the revised classification as nearly right as possible in 1909, and then leave it strictly alone until 1919.

General Criticisms and Recommendations.—The order of titles and the arrangement of titles under general classes ("classification" in the narrow sense) are matters of subordinate importance. The principal thing is to insure the definiteness of the

individual titles.

There are too many insignificant titles, indefinite in character and including only a small and negligible number of deaths. It would be desirable that the extended list of causes of death be reduced to as few as 100 separate titles, instead of 179 as at present, and that a well selected list of this length be generally used instead of the abridged list of only 35 titles. For monthly bulletins and special purposes a condensed list of 15 or 20 titles might be employed, but a reasonably detailed list should be used for all annual reports.

A list of 100 titles should suffice for all general morbidity statistics, but for hospital reports, in which the forms of statement are under control, more exact and specific information may well be given. An expanded list of 1,000 titles would probably suffice. This should be perfectly reducible to the standard list of 100 titles, and the titles of the abridged list should also exactly correspond to titles

of the standard list.

The same title should always mean the same thing and possess the same inclusion of terms wherever

A statistical classification must meet two important but conflicting purposes, namely, (I) to give information in regard to the occurrence of the most important causes of death, such as tuberculosis, pneumonia, violence, etc., and (2) to note the occurrence of rare causes of death, some of which, however, may become of occasional epidemic prevalence; among these are such diseases as plague, leprosy, yellow fever, pellagra, all of which may be endemic in certain localities.

It is desirable that the standard classification should not be cumbered with the titles of certain diseases of only rare occurrence or of small numerical importance, but at the same time the list should show with certainty whether any of these diseases did or did not occur during the period covered. In the event of their occurrence, special subsidiary tables should be given with full detail for each disease, as is done for plague, leprosy, distomiasis, etc., in the reports of Japan. A plan to meet these desiderata should be devised if possible.

In regard to the causes of major importance, such as tuberculosis, pneumonia, cancer, heart disease, nephritis, etc., a careful revision is necessary so that indefinite returns may not vitiate apparently definite statistics. If the distinction is to be maintained between lobar or croupous pneumonia and bronchopneumonia, then a return of "pneumonia" (unqualified), which might be either bronchopneumonia or lobar pneumonia, should not be included with either but should be stated separately. "Tumors" of certain organs are apparently subjected to a different principle of classification than that applied to cancers; probably all neoplasms should be brought together, and the statement of organ affected, both for cancers and other tumors, should be so made that the total for each important organ can be obtained. At present, for example, the "other diseases of stomach" (104) exclude cancer and also tumor of stomach (40), while "diseases of the bladder" (123) exclude cancer but include tumor of the bladder. So large a proportion of the deaths reported from "heart disease," "heart trouble," etc., is of doubtful value as indicating actual organic disease of the heart that a subdivision of title 79, "organic diseases of the heart," into (a) definitely stated valvular and other cardiac lesions, and (b) indefinitely reported cases, may be advisable. The large number of deaths simply reported as "bronchitis" or "nephritis" should not be placed under acute or chronic bronchitis or nephritis if the distinctive classification is to be maintained.

Age limits are undesirable, and as far as possible each title should designate a definite disease for which, when necessary, deaths at specified ages can be shown in the usual way. "Congenital" should be defined, and duration be considered in connection with "acute" and "chronic" forms of disease; also in relation to joint causes—a subject which can not be discussed in this paper.

Definite diseases of infants and of the aged should be compiled under the regular titles, and indefinite returns, e. g., "congenital debility" and "old age," should be placed under the class of ill defined.

Alternative methods of classification for deaths from external violence should be given, depending (1) upon the character of the violence and the means of injury, and (2) the character of the violence and the lesion. When the character of the violence (accidental, homicidal, suicidal, judicial, or unknown) can not be given, and there are legal difficulties in the way in some countries, then only the statement of means of injury or lesion will appear. Means of injury is the most important in general mortality and morbidity statistics, which should show the number of deaths from drowning, railway accidents and injuries, industrial accidents,

poisoning, etc., with as much precision and in as full detail as the returns will warrant. The classification by lesions, e. g., fractures, dislocations, wounds of specified location, etc., may be of special importance for hospital statistics, and may be given in addition to the regular statement of mode of injury. But no mixed system of classification should be employed.

The subdivisions of suicide should remain unchanged, unless it may be considered expedient to include the two least important numerically, "suicide by precipitation from a height" and "suicide by crushing" under "other suicides," thus abolishing

these unimportant titles.

It is desirable that a definite list of titles shall be prepared by the International Commission for each language. The process of translation from the French may give several apparently different forms. Thus we have, in the original translation of the Marine Hospital Service:

1. Typhoid fever (abdominal typhus).

2. Exanthematous typhus.

3. Recurrent fever.

* * *

39. Cancer and other malignant tumors of the buccal cavity.

In the U. S. Census reports:

Typhoid fever. Exanthematic typhus. Relapsing fever.

· · ·

* * *

Cancer of mouth.

In the Australian tabular list:

I. Typhoid fever.

2. Typhus.

3. Recurrent fever.

39. Cancer, etc., of the mouth.

In the Canadian Census:

Typhoid fever. (Abdominal typhus, enteric fever, mountain fever, dothienenteritis, typhomalarial fever.)

2. Exanthematic typhus. (Typhus fever.)

3. Recurrent fever. (Relapsing fever.)

 Cancer and other malignant tumors of the buccal cavity. (Epithelioma, smoker's cancer.)

All of these titles are supposed to be identical in contents, and there is no reason why they should not be precisely identical in form. It is important, moreover, that the international list numbers shall be used in all tables. By their aid comparisons can be made when the language is entirely unfamiliar. They are a guarantee, or should be a guarantee, that the inclusions under each title are absolutely those of the International Classification. Under the present arrangement, "27" means tuberculosis of lungs, including deaths reported simply as "tuberculosis," all the world over among nations using this system. I may urge the importance of this point because the U. S. Census reports do not now employ the list numbers in the printed tables. As soon as the re-

vised version is completed, however, they will be introduced and strictly maintained as a most useful part of the system. State and city registrars now enter them upon the transcripts made for the Bureau of the Census so that we may compare their assignments with those made by us, thus aiding in uniformity of methods of classification.

The titles themselves, as finally agreed upon for each language, should be in the most condensed form, without a long list of exceptions or inclusions; these are prescribed in the tabular list itself. A long title is frequently inconvenient when space is limited, and besides is usually incorrect from attempted over precision of statement. Thus title 46, "other tumors (tumors of the female genital organs excepted)," is misleading, because it excepts also a considerable number of tumors, or affections that are called "tumors," besides those of the female genital organs. These are (Australian Index): Tumor, aneurismal (81); tumor, bony (146); tumor, cerebral (74); tumor of bladder (123); tumor of liver (114); tumor of liver, hydatid (III); tumors of orbit (except cancer) (75); tumor of skull (146); tumor, parotid (100); tumor, phlegmonous (144); tumor, stercoral (108); tumor, varicose (83).

The list of terms included under each title should be prepared independently for each language and then correlated, as far as possible, remembering that some expressions in common use in one country may be replaced by others of entirely different character in another. The mere translation of an extended French list is entirely inadequate and brings about some very curious results. Thus the terms included under title 1, typhoid fever, are as follows (Australian tabular list):

1. Typhoid fever.

This heading includes—Dothinenteritis [Dothinenteritis]; fever, adynamic; fever, ataxic; fever, continued; fever, enteric; fever, mucous; fever, typhoid; typhus, abdominal.

Of the eight terms given as proper to be compiled under typhoid fever, the first three and also the term "mucous fever" practically never occur in re-turns in the United States or, presumably, in other English speaking countries. The most common, dothienenteritis, has not been received more than once or twice out of over 5,000,000 transcripts of deaths received by the Bureau of the Census since 1900. It is so obsolete as not to be found in recent standard medical dictionaries, although dothiénentérie may or may not be common present usage in France. "Ataxic" and "adynamic" and "mucous" fevers very fortunately have never been English medical terms at all, except as they have been translated from the French fièvre ataxique or adynamique or muqueuse. We have enough indefinite ways of saying "typhoid fever" without manufacturing artificial ones, and it is quite supposable that a physician seeing such expressions contained in an official list might be led to employ some of them. "Abdominal typhus," although even placed in parenthesis in the title itself, practically never occurs upon certificates; and the Latin form "typhus ab-

tf Ducland I to the mild point to the field of the fire, 1906

dominalis" is rare, and when it occurs is usually

written by German speaking physicians.

On the other hand we find that many terms that are regarded by some authorities as synonymous of typhoid fever are omitted. Thus Tyson (Practice of Medicine, 1906) lists the following as synonyms of typhoid fever: Typhus abdominalis; enteric fever; pythogenic fever [obsolete]; gastroenteric fever; nervous fever; autumnal fever; slow nervous fever. Some of the distinct terms actually contained in the transcripts received at the Census Office are: Abortive typhoid; ambulant typhoid; cerebral typhoid; enteromesenteric fever; typhoenteritis; typhobilious fever; typhogastric fever; typhoid endocarditis; typhoid ulcer; typhomalaria; typhoperitonitis; and, recently, paratyphoid fever. Provision must be made in a list that is to be generally used in registration offices, and sometimes not under medical direction, for the exact assignment of even the most irregular and indefinite terms, so that the limited list confined to the terms of the French index is quite inadequate.

The foregoing criticisms may be considered, upon the whole, to be of no very startling character or such as the ordinary work of revision will not readily eliminate. We are probably not yet ready for any radical rearrangement of titles according to the origin of disease; science is changing too rapidly just now for an ideal grouping. And we can maintain the integrity of the titles standing for specific diseases just as well with one skeleton to hang them on as another. Change or alteration of any kind is earnestly to be deprecated unless absolutely necessary, for it produces "faults" in our series of statistics as earthquakes do in the geological strata. "And all the king's horses, and all the king's men" can not put them together again years afterward when consecutive data may be most important. So iet us revise as much as may be necessary, and no more; giving the benefit of the doubt always to the present accepted method rather than to any pro-

posed change of uncertain value.

I have not condemned the International Classification for not being what it never for an instant undertook to be, namely, a nomenclature of diseases. Many physicians, and even some registrars, have confounded its nature and purpose with that of the "Nomenclature of Diseases" drawn up by the Royal College of Physicians of London, and which I heartily wish were in general use among physicians in the United States at the present time in the entire absence of any other accepted source of authority in the use of medical terms." The General Committee of the American Medical Association is preparing a report upon this nomenclature, and I hope it may become the basis for a complete International Nomenclature of Diseases, which may be prescribed for official use in hospitals and government services and recommended to physicians generally.

Specific Criticisms and Recommendations.—This paper is already too long, and I have touched upon some specific points requiring improvement in the examples under typhoid fever. It is desirable that

suggestions be sent in to the chairman of the section committee which is concerned with the question of classification, and so far as they touch individual titles, they might be submitted in something like the following form, each distinct suggestion being preferably made upon a separate slip or card of postal card size:

Reference should first be made to the title of the International Classification in its present form which it is desired to amend; the amendment stated, and disposition as regards any other title concerned; reason for change; and signature of proposer or name of office recommending change, with date. All of the new terms included in the Manual of International Classification published by the Bureau of the Census in 1902 may be considered as individual recommendation for inclusion under the titles to which they are referred. Also all of the new subdivisions established in the Manual and employed in the Mortality Statistics of the United States are submitted to the International Commission for consideration. A considerable number of new terms received since the compilation of the Manual will also be included, and it is desirable that each registration office likewise submit its suggestions.

Doctor Bertillon has requested that the recommendations be received by November 1, 1908, and it is the desire of the General Committee and of the Bureau of the Census to have the American suggestions in hand as soon as possible after October I, 1908, so that they may be properly arranged, and transmitted. The reason why Doctor Bertillon desires that suggestions be sent in by November I is that it is necessary to classify them, arrange in proper order, and publish them in a special pamphlet for the use of the International Commission, as was done with the suggestions made in 1900. This involves much arduous labor and considerable expense, and I think we can best show how heartily we appreciate the devoted services rendered by Doctor Bertillon in the former revision, and the effective cooperation of the government of France, by heartily and promptly cooperating in the formulation and transmittal of our recommendations. Another decennial period, and I trust that the Third Decennial Revision will be held at Washington in 1919, and that by that time we shall have reached a practical basis of agreement so that England and Germany and all of the countries of the world may participate. No classification is so good but that it would be better if it were a system in universal use. and I believe that any reasonable concession in minor matters of form ought to be made if we can thereby secure general adoption of a single plan of tabulating causes of death and sickness throughout the world.

^{**}This printed for "His Majesty's Stationery Office," by Darling & Son, 34:40 Bacon street, London, E., and costs only one shilling. Some bookseller might do a service to American vital statistics by importing a number and advertising them for sale.

SOME PSYCHOLOGICAL TESTS MADE ON TUBERCULOSIS PATIENTS.

BY WALTER SANDS MILLS, A. B., M. D., New York,

Physician to the Tuberculosis Informary, Metropolitan Hospital, Department of Public Charities.

At Columbia University a very elaborate set of psychological tests has been devised for the examination of those who wish to be so examined. Each year many of the students are put through these tests, and the results are carefully recorded. While doing some of this work in the Columbia psychological laboratory in 1907, it occurred to me that it would be of interest to try some of the more simple tests on my patients at the Tuberculosis Infirmary of the Metropolitan Hospital. So far as I am aware this is the first series of tests of the kind that has ever been made.

The mental attitude of tuberculous patients presents nothing peculiar, except that quite often patients who are desperately and hopelessly ill think they are going to get well eventually. Patients less sick are very apt to be blue and despondent when they realize that they have tuberculosis. It used to be thought that the consumptive was a particularly sensitive and clever person. That possibly there was something about clever people that attracted the disease, or there was something about the disease that sharpened the sensibility of the sufferer. Neither idea is true. The consumptive is made of common clay-very common, sometimes. The disease is an unpleasant disease to have. As it progresses, the patient becomes sick, very sick, and is frequently an unpleasant person to care for.

I have immediate charge of the women's wards at the Tuberculosis Infirmary, which contain at any given moment from 110 to 140 patients. The institution receives none but charity patients, most of them far advanced in tuberculosis. Many of them are foreigners, most are but little educated. They are from the lower walks of life-some working women, others wives of working men, a few profes-

sional prostitutes.

When I began my investigations I thought it would be a very simple matter to get a large number of subjects. I soon found, however, that it was a difficult matter to select from my material persons who were intelligent enough to appreciate what was required of them, who could understand, read. and write English, and who were physically able to carry out the experiments. Altogether I was able to find just twenty-nine subjects during some six months, out of 243 patients treated, and all of these did not complete the series of tests. The patients selected were:

CASE I.—Girl, aged twenty years; born in United States; common school education; was a shop girl. History of ingrowing toenails; dated her troubles from an operation to relieve them. This was erroneous. During many months patient drank whiskey with one meal and beer with another. Transferred to the Metropolitan Hospital February 4, 1907, from another hospital, suffering from alcoholic neuritis, worse in the feet and legs. Had foot drop. Could not walk. Slight tuberculous lesion in chest.

CASE II.-Woman, aged thirty-nine; admitted, May 20 1907. Well to three weeks ago, when she caught cold. Had rheumatism, endocarditis, pleurisy, and tuberculosis. Patient very sick and tired and could not finish. The tests

made her nervous.

Case III.—Woman, aged twenty-eight years; admitted, November 23, 1906; brought in on a stretcher. Much bet-ter in May, 1907. Early stage.

CASE IV.—Woman, aged fifty-eight years; born in United States; admitted from Bellevue Hospital, March 26, 1907. Incipient tuberculosis.

Case V.—Woman, aged twenty-seven; readmitted, January 21, 1907. Fibroid tuberculosis. Very curious as-

CASE VI.—Woman, aged thirty-one; admitted July 31, 1906. Patient had been a prostitute for several years. Suffering from alcoholism, also from syphilis. Was unable to walk. Lower extremities paralyzed. Tuberculosis of the left lung. Patient had made slow but regular improvement, and at the end of May was apparently well except for lung condition.

 $C_{\Lambda SF}$ VII.—Woman, aged twenty-three years; admitted May 1, 1907. Tuberculosis left lung.

CASE VIII.-Woman, aged thirty-six; admitted, May 6, 1907; born in England.

CASE IX.—Woman, aged twenty-eight years; admitted, November 9, 1906. Tuberculosis. Patient complained of eyes hurting, so tests had to be discontinued.

Case X.—Woman, aged thirty years; admitted, April 13, 1907. Was inclined to be a little queer, mentally. Religious mania.

CASE XI.—Woman, aged forty-nine; admitted, September 10, 1906. Tuberculosis.

Case XII.-Woman, aged thirty-five; admitted, April 30, 1907. Very sick. Tuberculosis slight.

Case XIII.—Woman, aged twenty-eight; Norwegian; admitted, April 26, 1907. Tuberculosis, pleurisy.

CASE XIV.—This patient is not very sick now and is constantly improving. She had been in the hospital since October 29, 1906. Age thirty-six.

CASE XV.—Woman, aged thirty-one; entered hospital May 12, 1902, and had been there ever since. Had only one eye, the right. The other was lost when a child. This patient was quicker than the average. The loss of one eye did not appear to hamper her.

Case XVI.—Woman, aged twenty-eight; reentered hospital after an absence of three weeks, April 30, 1907. Was in hospital eighteen months the first time. Tuberculosis in active stage. During all tests with all patients my watch was open on the table. This was the first one to write "watch" against "time" in association.

CASE XVII.-Woman, aged forty-seven; admitted, April 10, 1907. In bad condition with tuberculosis.

CASE XVIII.—Girl, aged seventeen years; was admitted June 20, 1905. Had tuberculous hip disease as well as tuberculosis of lungs. Quite sick and suffered a great deal of pain at times.

Case XIX.—Woman, aged thirty-three; admitted, October 30, 1906. Had improved much.

Case XX.—Woman, aged fifty-one; admitted, May 18,

1907. Both lungs affected.

Case XXI.—Woman, aged thirty; admitted to hospital several months ago and operated upon for tumor of abdomen. This was followed by pneumonia. Now in tuber-culosis ward. Extremely nervous; seemed a little off

mentally. The association tests are meaningless.

CASE XXII.—Woman, aged twenty-eight; admitted,
March 18, 1907. Tuberculosis of lungs. Alcoholic neuritis.

In bad shape,

Free association. Patient exhausted and could go no further.

Case XXIII.—Woman, aged thirty; admitted, March 5, 1907. Tuberculosis.

Case XXIV.—Woman, aged thirty-two years; admitted, August 15, 1905. Lungs in bad shape.

Case XXV.—Woman, aged thirty-five; admitted. March

22, 1907.

CASE XXVI.—Woman, aged forty-one; admitted, November 23, 1906. Slight tuberculosis.

CASE XXVII.—Woman, aged forty-nine; admitted,

March 20, 1907.

CASE XXVIII.—Woman. aged thirty-five; admitted,

April 18, 1907. Tuberculosis, active stage.

Case XXIX.—Colored woman, aged twenty-three; admitted, March 29, 1907. Had improved.

These twenty-nine subjects were all women suffering from pulmonary tuberculosis of varying severity. Some had other ailments as well. The subjects were all patients in the Tuberculosis Infirmary of the Metropolitan Hospital, Department of Public Charities, of the City of New York. The ages varied from seventeen to fifty-eight years. The average age was 33-7 years.

After consultation with Professor Woodworth, of the Psychological Department at Columbia University, ten simple tests were selected for the experiment. These were chosen because any person of average intelligence could do them. They required no special skill or intellectual training. A detailed description of each test, with the results of each

summarized, follows:

Test I. Perception of size:—The subject was given a piece of white paper and a pencil and directed to make a straight line the same length as a standard line on another piece of paper. The standard line was five centimetres long. The patient was not allowed to measure the standard, but was obliged to make her line as nearly like the original as possible, simply by estimating its size by the eye.

Each of the twenty-nine subjects made the test. Twenty made the line too long. One got hers the exact length. Eight made their lines too short. The

average length was 5.26 + cm.

Each subject was directed to erect a perpendicular to the first line at its centre, and of the same length. Twenty-eight did this. Six made the perpendicular longer than the original. One got both lines the same size—5.2 cm. Twenty-one got the perpendicular shorter than the original line. This is done by about the same percentage of normal persons. The average length of the perpendicular

was 4.55 + cm.

Test II. ** *Bsthesiometer:**—This test was made with one point, and with two points fixed respectively at 1.5, 2.0, 2.5 cm. distance. The instrument was touched lightly to the backs of the hands, both left and right, without permitting the subject to see whether one point or two were used. All twenty-nine subjects were thus tested, to see if they could tell by sense of touch the number of points touching them. Two got all points correct at all distances. Two others got all correct with right hand only. One other got all points correct with left hand only.

all shown and removed, asking her to write the list from memory in the same order. Two trials were given each subject. Twenty-eight were thus tested.

Only one succeeded in getting all the figures correct on the first trial. Two got all correct on the second trial. Three got all wrong on both trials. One other got all wrong on the second trial. Five got eight figures correct on the first trial; one got eight figures correct on the first trial; two got seven figures correct on the second trial. Two got seven figures correct on the first trial; two got seven figures correct on the first trial; Two got five figures correct on the first trial; one got five figures correct on the second trial. Two got four figures correct on the second trial, Six got three figures correct on the second trial. Six got three figures correct on the first trial; seven got three figures correct on the first trial; four got two figures correct on the first trial; four got two figures correct on the second trial. One got one figure correct on the second trial. Four had no second trial.

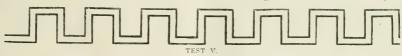
Eleven did better on the first trial. Nine did equally well on both trials. Five did better on the

second trial.

Test IV. A—Rate of perception test:—

OYKFIUDBHTAGDAACDIXAMRPAGQZTAACVA
OWLYXWABBTHJJANEEFAAMEAACBSVSKALLA
NRNPKAZFYRQAQEAXJUDFOIMWZSAUCGVAO
ABMAYDYAAZJDALJACINEVBGAOFHARPBEJC
TOZAPJLEIOWNAHRBUIASSNZMWAAAWHA
CAXHXQAXTDPUTYGSKGRKVLGKIMFUOFAA
KYFGTMBLYZIJAAVAUAACXDTVDACJSIUFM
OTXWAMQEAKHAOPXZWCAIRBRZNSOQAQL
MDGUSGBAKNAAPLPAAAHYOAEKLNVFARJA
EHNPWIBAYAORKUPDSHAAQGGHTAMZAQG
MTPNURQNXIJEOWYCREJDUOLJCCAKSZA
UAFERFAWAFZAWXBBAAAVHAMBATADKVS
TVNAPLILAOXYSJUOVYIVPAAPSDNLKRQ
AAOJLEGAAQYEMPAZNTIBXGAIMRUSAWZA
ZWXAMXBDXAJZECNABAHGDVSVFTCLAYKU
KCWAFRWHTQYAFAAAOH
One hundred A's arranged irregularly among five

One hundred A's arranged irregularly among five hundred letters in printed lines were checked off as rapidly as possible by the subject. Twenty-seven completed this test. The time varied from 75 to 300 seconds; the average time was 147.4 seconds. The average number of A's omitted was 14.6. Wisslar reported the average time of forty-two Barnard students as 91.2 seconds, with an average of three omissions. The poorer records of my subjects, I believe, to be due to their lack of mental training, and not altogether to the fact that they were sick.



Six subjects were evidently guessing and their statements were thrown out as unreliable.

Eleven altogether could feel two points at the 2.5 cm. distance at all times. Three altogether could feel two points at the 1.5 cm. distance.

All other tests were wrong with two points.

Test III. Visual memory:—For this test nine cards were used, each having on it one of the numerals, 1, 2, 3, 4, 5, 6, 7, 8, 9. The cards were shuffled to arrange them in irregular order. The test was made by placing the cards one on top of the other before the patient, and after they were

Test V. Steadiness of movement:-

This test consisted in making a line with a lead pencil between two parallel printed lines 2 mm. apart, and with twenty-eight right angles. The pencil mark was to be made continuous, and without touching the printed lines. The time was not recorded.

This test was made by twenty-five of the subjects. Three made no touches; three made one touch each; five made two touches each; two made three touches each; one made four touches; one made five touches; one made six touches; two made

seven touches each; two made eight touches each; one made eleven touches; one made twelve touches; one made eighteen touches; one made nineteen touches; and one was too bad to count. Of the twenty-four counted, the average number of touches made was 5.16 -.

Test VI. Accuracy of movement:-

This test was made with a 10 cm. square containing one hundred dots one centimetre apart. The patient touched each dot as quickly as possible with a pencil, the misses being counted afterwards.

Twenty-four did this test. The time varied from forty to one hundred and twenty seconds. The average time was 71.2 + seconds. One touched every dot in 75 seconds. Fifteen missed less than 10, one missed 70. The average number of misses was 17.1 +

Test VII. Speed of movement:-

The patient was required to place a dot in each one of one hundred I cm. squares as quickly as possible. Whenever a dot touched the side of a square or missed it altogether, it counted as an error.

Twenty-four did this test. The time varied from 35 to 115 seconds. The average time was 56.4+ seconds. Eleven made no errors. One made 14. The average number of errors was 2.4+.

Each of the preceding tests gives a much slower rate of speed than Wissler's averages for Barnard students. This I also believe to be due to lack of mental training on the part of my subjects.

Test VIII. Force:-This was taken with the dynamometer, two trials with each hand. The first test with the right hand varied from 12 to 40 kilogrammes; the second from 13 to 47. The averages were 25.1+ and 25.5 kilogrammes, respectively. The first test with the left hand varied from 10 to 50 kilogrammes, the second from 10 to 47. The averages were 25.6+ and 24+ plus, respectively.

The averages for healthy women were, right hand

34 kilogrammes, left hand 33 kilogrammes.

Test IX. Association test:—This test consisted in handing the patient a printed list of ten words and asking her to write down House as rapidly as possible opposite each word any other word that that word might Child suggest. The printed words were "House," "Tree," "Child," "Time," "Art," "London," "Napoleon," "Think," Time London "Red," "Enough." As a rule, associa-Napoleon tion was good, though the patients Think thought slowly. Another sign of defective mental training and inability, in Enough consequence, to think and write quickly.

The answers were:

Tree

Art

Red

Case I.—People, country, joy, .., .., of home, dress. . .

CASE II.—.., .., .., .., .., .., .., CASE III.—Home country, brother, work, picture, city, ..., thought, color, sufficient. CASE IV .- People, birds, toys, age, pic-

tures, Willis, war, Shakespeare, blood, this room.

CASE V.-Horse, three, chills, thyme, ate, long, nap, time, rude, eight.

CASE VI.-Hour, apple, little, the, words, going to, .., of, going home, hat, done.

CASE VII.—Inhabitant, apple, playful, hours, picture, people, foreigner, trouble, flower, work.

CASE VIII.-Home, children, work, true, Heart, London, .., .., ... Case IX.—..., .., .., .., .., ..,

CASE X.-Home, apple, children, too late, picture, England, Bonaparte, guess,

blue, plenty. CASE XI.-.., .., .., ..., ..., ..., ...,

CASE XII.—Home, country, sister, to spare, picture, a city, a great man, ...

CASE XIII.—Home, flower, baby, day, picture, big town, great man, sense, color,

CASE XIV.—To live in, fruitful, nature, good time, something, beautiful, large city, great, of owning large house, bright color, satisfied.

Case XV.—Home, nature, innocence, future, beauty, toggy weather, war, to bring back, passion, sufficient.

CASE XVI.-Home, nature, innocence, watch, beauty, foggy weather, .., taught, danger, frequency.

CASE XVII.—Work, up, nice, 4:20, do not know, was there once, great man, I think, color, sufficient. CASE XVIII.-Family, fruit, happy, work, statue, people,

a state, where going, color, goods.

CASE XIX.—Barn, woods, happy, rest, nice home, .., war, head, color, to let.

Case XX.-Home, summer, daughter, when I was happy, nice picture, large city, great man, I am sick, white and blue, all right.

CASE XXI.-Very good, right, anaught, concerned, proper, possess, necessary, protect, doctor.

city, hero, thought, color, finish.

· Case XXIV.—Home, plant, .., .., city, .., .., ... CASE XXV.-Horse, flowers, mother, thyme, picture,

ocean, nobleman, worry, color, plenty. CASE XXVI.-Home, fruit, mother, watch, ..., fog. great man, .., danger, sufficient.

CASE XXVII.—See, five, children, hour, how, city, home, how, blue, how.

CASE XXVIII.—Home, grows by nature, mother, leisure. a way to do anything, largest city, war, thought, anything red, plenty.

CASE XXIX.-Hotel, bud, my boy, here, picture, traveling, war, of myself, dress, here.

Test X. Retrospective memory:-At the end of each seance the patient was asked to draw a line from memory the same length as the standard line copied in the beginning, namely, 5 cm.

Twenty-five did this test. Seventeen made their lines too long; eight made their lines too short. Eight made their retrospective line shorter than the original, fourteen made it longer. Three made it

the same length.

Conclusions:-The tests seemed to me to show that previous mental training had much more to do with the results than did the physical condition. This was especially true as to the length of time consumed in performing each test. The patients were all intelligent enough to do what was expected of them, but it was entirely out of their accustomed routine, and hence they worked slowly. Performing the various tests was a distinct effort for most of them. The work started perspiration, and all left the examining room much exhausted.

As to speed, accuracy, sensibility, strength, in all the average was lower than for healthy persons. The patients were sick physically, most of them had had little education, and the results showed the

detrimental influence of both.

324 WEST EIGHTY-NINTH STREET.

THE AFTER TREATMENT OF A SERIES OF FORTY-FOUR LAPAROTOMIES.

> By Richard F. Woods, A. M., M. D., Philadelphia.

In all abdominal operations, the after treatment is of more importance than the preparatory treatment, and almost of as much importance as the operation itself. Carelessness or lack of judgment in this regard has caused a great deal of suffering and has lost many lives.

The operation stands out clear and distinct, and is apt to engross entirely the mind of the surgeon. Its harassing complications, its dangerous involvements, are apt to overshadow the after treatment, which by comparison dwindles in importance after the main event has been performed. On this account the after treatment is too often apt to be left to the resident physician or nurse, and the directions are not carefully considered or distinctly imparted. The crisis of a great many serious cases does not occur on the operating table, but depends oftentimes on the careful and intelligent direction after the operation has been completed.

It is here that nursing is of the greatest importance, that rational, prudent methods, aiming at simplicity, and based on common sense, yield the great-

est amount of success.

The following points in the after treatment of laparotomy cases were deduced from a series of forty-four cases, all receiving the same after treat-

A radical departure was made in these cases in the treatment of the bowels after operation. Following out the suggestions made and the procedure practised by some operators, a laxative was not used immediately after operation. This had been our custom previously, and all cases so treated have not been included in this series.

The operations were as follows: Bilateral salpingooophorectomies, 21; unilateral salpingooophorectomies, 6; hysterectomies, 8; panhysterectomies, 1; appendectomies alone, 5; ventrosuspensions

alone, 3.

I have made this classification as simple as possible, placing the operation under its most important head, without regard to the complications involved. Thus there were many appendices removed in the operation for single and double salpingooophorec tomy, but I have only classified them under one The same thing applies to ventrosusoperation. pension, many being performed in the course of other operations which have not been classified as ventrosuspensions. These operations were performed by me at the Presbyterian Hospital in the service of Dr. Edwin Duer.

The anæsthetic was invariably ether. Before this series of cases we had tried beginning the anæsthetic with nitrous oxide with unfavorable results, the cyanosis and bronchorrhœa being more marked than when ether alone was used. This was due in part. I think, to the fact that the ether is suddenly begun in full doses when the patient is relaxed from the effects of the nitrous oxide and he does not have a chance to accommodate himself to the irritation of the ether and to take care of the accumulated mucus in the bronchial tubes. It was the custom in these cases to use drugs only when the occasion arose and never routinely. A drug that is not required certainly does no good and may do some harm. desire to do something in a serious case, the impatience of delay, the appeasement of a conscience in leaving nothing undone, is often the cause of unwarranted over dosing and even poisoning. Large doses of stimulants flogging a tired heart often make it falter and break. Idiosyncrasies to certain drugs may cause a great deal of trouble. For this very reason, the use of morphine given when the patient was on the operating table was discontinued in this series of cases, one patient's respiration gradually sinking to seven on this account. It also seemed to us that nausea was more marked in the cases where morphine was given during the operation. Our custom in the use of this drug after operation was based entirely upon the suffering of the patients. Invariably, if there was much pain it was given, generally in doses of gr. 1/0, repeated in three hours if necessary. We have thought that the benefit derived from this drug so eclipsed the harm that it might cause that we have used it very often. The picture of the tossing, moaning, pain racked patient, so common in the old days when morphine was feared, has given way to the quiet calm, the indication of suffering easily borne.

It was generally given by hypodermic injection, as it seemed to have more mental effect and to give more relief than when administered by suppository. Morphine should never be used unless necessary, however it seems unjustifiable to withhold it from

patients who are suffering.

The stimulants used in some cases in this series that came off the table in bad condition were strychnine, alcohol, digitalis, and occasionally nitroglycerin. Strychnine in doses never larger than gr. 1/30, and seldom oftener than every three hours; digitalis, gtts v, generally every third hour; alcohol in the form of whiskey in half ounce doses, third or fourth hour, and nitroglycerin, grs. 0.01, third or fourth hour. Caffeine was used sometimes in the form of coffee enema when there had been no intestinal injury during operation. Atropine was used occasionally in severe sweating or in bronchorrheea, and in two cases where there was some distention we thought that it would encourage peristalsis.

We found that the average laparotomy did not need much medication after operation, but that strychnine nitrate, gr. 1/30, t. i. d., the day before

was an advantage.

The routine practice of giving calomel, which has been our practice hitherto, was abandoned in this series of cases. We found that this was a distinct advantage. Patients do better when they are not stirred up and weakened by severe purgation. Their first night was certainly more comfortable. The pain and distention much less, and the nausea and vomiting not so marked.

In the preparation of the patient for an operation oftentimes they are purged too effectually, the guts are wrung out instead of being effectually moved, and after being weakened by this method of procedure, to follow it up with drastic doses of calomel twelve or fifteen hours after a prolonged and serious operation is too exhausting. In these cases a simple enema of soap and water, with a little glycerin in it, was given twenty four hours after operation; if this was not effectual it was repeated in three hours, and on the bowels still resisting a compound enema was given in three hours. This consists of the following:

| 1: | Mag sulph, oz ii: |
|----|--------------------|
| | Oil of turpentine, |
| | Glycerin,oz. iii; |
| | Water,oz. iv. |

Water was given after the operation, two or three ounces, hot, every two or three hours. This was increased gradually, according to the tolerance of the If vomiting continued this was withdrawn entirely. In such cases salt solution enemas were used, a pint every four hours until vomiting ceased. Occasionally when vomiting was severe recourse was had to the stomach tube, and sometimes we thought that it did good. As a general rule. however, this mode of procedure involves too much discomfort to the patient, and the good derived does not compensate for the trouble involved. The general custom which we followed of giving large draughts of water twenty-four hours before operation, is one of the best methods of preventing discomfort from thirst after operation, and it also has an excellent effect upon the kidneys, and the scanty. high colored, concentrated urine is very seldom present if this method of preliminary water drinking is insisted.

In septic cases, the Fowler position was used with continuous rectal irrigation with salt solution such as Murphy directs. In cases where shock was pronunced, either from hæmorhage, sepsis, prolonged operation, or all of these conditions combined, hypodermoclysis was used or intravenous transfusion. We observed none of the nervous symptoms that have been reported after intravenous transfusion.

As a general rule nourishment was not given until the bowels had moved. If given too soon or in too large quantities, it is not absorbed, ferments, and creates digestive disturbances and distention. Buttermilk in small quantities was used by us, and was found to be enjoyed and tolerated. This was varied with broths. Milk was never used, as it certainly seemed to cause much more flatulence than any other form of nourishment. In six or seven days, if everything went well, we allowed semisolid food: Jellies, milk toast, and egg. In ten days: Vegetables, and meat occasionally.

It was made of particular importance that rest should be enforced. The worry and irritation caused by solicitous friends and relatives should be avoided by not allowing patients to be seen until they are convalescent. The majority of the patients with no complications were kept in bed for two weeks; others, where hysterectomies had been performed, or after operations for bad pelvic conditions where drainage was used, were kept in bed for three weeks at least. In our opinion it was much better to err on the safe side. The danger of embolism, phlebitis, and hernia is so great in patients who leave their beds early that undue baste is to be deplored, and nothing can be said in its favor compared to the great danger involved. A patient hurried out of the hospital apparently enhances the surgeon's ability for a quick cure and makes more room in the ward, but the patient repents and suffers at leisure at home.

There is a distinct period of secondary shock that occurs two or three months after operation. This postoperative condition (called by some postoperative neurasthenia) is certainly tempered by the proper proportion of rest and attention to convalescence.

The position of these patients was confined to the

back for twenty-four hours after the operation; after that, unless there was some serious objection, they were allowed to take any position they desired. Patients with ventrosuspension were kept on their backs for at least two weeks. A pillow under the back or knees in those cases where the backache was severe often gave considerable relief. These patients were catheterized every eight hours if they found it impossible to void their urine. Attempts were made with hot vaginal douches and warm applications on the abdomen, however, to encourage this if possible. In frequent urination, the catheter was passed as a rule to obviate the danger of distention with overflow.

A mild cystitis was present in three of these cases and occurred notwithstanding all regard to strict antiseptic precautions in performing catheterization, and impressed on our minds that all efforts should be used to induce patients to void their urine, and that the catheter is used as a general rule too routinely and that cystitis occurs more often than is commonly supposed. There were ten cases drained in this series, all for bad inflammatory conditions. These were all drained through the abdominal wound.

There is considerable question in our minds in regard to this method of drainage, and considering eveything the vaginal method seems the most satisfactory and the most practical. These cases were mostly drained with gauze enclosed in rubber tissue. Of this character of drain the condom makes a much better envelope than the rubber tissue. Taking everything into consideration, the rubber tube combined with gauze placed deep and low in the pelvis seemed to give the best results. We have never used glass tubes; they have no advantage over the rubber, but many disadvantages. There is remote danger of perforating the rectum; the remaining tract is much larger, and there is much more irritation. The danger of the gauze drain becoming dry and acting as a plug occurred in two cases, when its removal was followed by a quantity of turbid liquid which had been walled in by the gauze. In patients drained with gauze, the gauze was left in forty-eight hours, when it could be withdrawn easily and painlessly. Earlier attempts to remove gauze are generally accompanied by considerable difficulty. We had no stitch abscesses and of this series no deep sinuses from infected stitches followed drain-

Ligatures of silk were used to tie the uterine and ovarian arteries, iodine catgut for other bleeding points and for whipping over the peritonæum.

The attempt was made to regulate the habits and desires of these patients after they left the hospital. Realizing that the majority of the poorer classes return to arduous work far too soon, they were strongly advised in regard to feeding, work, habits, open air sleeping, and the systematic taking of tonics, while in the well to do a change of scene and air was advised to insure their convalescence.

In this series of patients all did well. There were no deaths, and the majority of the women were cured of their complaint.

FIFTEENTH AND SPRUCE STREETS.

APOPLEXY, ITS CAUSES AND TREATMENT.*

By John D. Bonnar, M. D., Buffalo, N. Y.

In approaching the discussion of this subject I am, at its outset, impressed with the vast range of influences and conditions, which, directly or indirectly, contribute to this morbid state, denominated apoplexy.

Its growing frequency, as a cause of death, gives it a place in the popular mind, of dread significance, portending either fatal or crippling consequences, that seldom come with such definite cer-

tainty from any other sickness.

The suddenness of the onset, with but meagre, if any, warning, is also a hindrance to such prophylaxis as might be adopted, if suspected; hence our efforts are focussed upon the incident, denominated the "apoplectic insult," which technically expresses the confusion and loss of consciousness, ending in coma. Inasmuch as coma may come from causes not purely apopletic in character it becomes of interest and value to distinguish or differentiate the causes. Alcoholism. uræmia, epilepsy, or concussion, may be mistaken for apoplexy. The history of inebriety, odor of breath, and absence of stertor and spasm, materially aid the early diagnosis, yet, where such inebriate habits may have led to atheroma of cerebral vessels, a combination of true apoplexy and alcoholism may exist—this is not frequent, yet significant and serious, where an apoplectic may hastily be denominated "a drunk" and sent to police station, instead of the hospital. Fortunately such error is rarely made by the physician, whose training precludes such possible blunder of the layman. Uræmia has also an history of kidney disease, and, while convulsive conditions are quite similar, the breath is said to have an odor of acetone, and the coma is less profound, while no paralysis is localized and the stertor is not so marked as in serious cases of apoplexy.

Epilepsy, while ushered in by convulsion and followed by coma, is also, in most cases, found in young subjects and has a history, while the reverse is the rule in apoplexy—exceptions but proving its truth.

The coma may last for a shorter or longer period, the seriousness being mostly proportional to its length. Where it lasts for several hours or a day, before some return of consciousness, the prognosis is grave, while, if the wave passes off in an hour or less, there are hopes of recovery, with more or less paralysis of muscles involved. Where the case was one of alcoholism, uraemia, or epilepsy, the paralysis passes off with the return to consciousness, while in apoplexy a defined area of loss of power and sometimes of sensation, is left after return to consciousness.

The clinical picture of such apoplectic cases is so familiar to all of us, I will not weary you with further delineation, but proceed to the discussion of its pathology.

The pathology of any disease must imply familiarity with the anatomical field of its invasion, coupled

Read before the Burale Academy of Medicine

with such contributary states, or conditions, as tend to its production. The brain, or encephalon, being the seat of its morbid invasion, we will briefly relate such main structural components as give ex-

pression to its symptoms.

After the ossification of the sutures and closure of its fontarelles, the cranium is an unyielding bony cneasement of spherical outline, containing the brain and its membranes, bloodvessels, and nerves. The brain is of soft and friable texture, composed of cerebrum and cerebellum connected through their peduncles with the pons and medulla—the cerebral expansion of the myelon.

These structures are enclosed by membranesdura mater, arachnoid, and pia mater. The first is thick and fibrous, is external, and serves as a periosteal lining for the cranium. The arachnoid is a serous membrane, lies between the dura and pia mater, and contains a small amount of serous fluid. The pia mater embraces the brain, and dips down between the convolutions, carrying the vascular supply to the textures of the brain. Cerebral fluid is found beneath these membranes and in the anterior and posterior subarachnoidean spaces, which communicate with each other across the crura and with the ventricles of the brain. This fluid acts as a cushion to lessen and equalize the shocks or jars, or sudden emotional or other influence, that tend to invade a portion of the encephalon, but, by this bumper medium, are distributed over much wider area of cerebral texture. Of next importance we mention the arterial supply, through the meningeal arteries supplying the surface, while the central and basilar parts of the brain receive their supply through the carotid and basilar and circle of Willis, which secures to the great nerve centres an excellent blood supply in normal state, while in abnormal, it supplies a most perfect way of meeting an emergency, created by occlusion of any part of the vascular arch—saving the citadel till the last; a Stoessel in command, in form of adjustment of pressure through venous and arterial currents hastening to close any vacuous spaces, which have arisen from sudden checking of the vascular supply, through one or other of the divisions of the arterial system; vascular congestion, throughout the encephalon, suddenly taking command and arresting the influx of the destructive blood forces, at the point of rupture or occlusion.

This cursory outline will now assist us in addressing our minds to such further anatomical truths, as will better fix the attention on the morbid chain of incidents, yet too limited to serve as basis from which to draw such conclusions as give practical command of the morbid centres, around which the issues of life and death must be met by the physician.

The gray matter of the brain is found distributed upon the surface of the convolutions, following their outlines in the sulci, thus giving greater area to this matter, we accept as the seat of intelligence. Gray matter is also found in the central parts of the brain, particularly at its basilar aspect, where the crura meet the lobes of the brain. The corpora striata, eptic thalami, corpora quadrigemina, and other well defined centres, from which the cerebral nerves take

their origin, give ample field for morbid action, peculiar to apoplexy. Also worthy of special mention are those folds of the pia mater, that extend into the ventricles of the brain, carrying arterial blood to their fine capillary network, in the choroid plexuses and velum interpositum. I mention these structures to draw your attention the better to what factors must engage our thought in dealing intelligently with clinical examples. In passing, I beg leave to remark, that the nerves of special sense are all provided with a deep and more superficial origin, which throws some light upon the fact that paralysis of nerves of special sense, as of sight, hearing, tasting, and smelling, are relatively infrequent, even where there is vast injury to motor and even sensory nerves of limbs.

The central branches of supply most frequently are the seat of hæmorrhage, particularly those given off from the middle cerebral, in the perforated spaces, which supply the striate and optic thalamic bodies—the lenticulostriate and lenticulothalamic arteries-the former, called by Charcot the artery of cerebral hæmorrhage-60 per cent. of all cerebal hæmorrhages occurring from one or other of these arteries. The bleeding may be into the substance or upon the surface of the brain-depending, no doubt, upon whether the rupture be within the capsule or superficial to the perforated space. The next structural feature of special interest is the motor track, beginning in the superficial convolutions of the anterior lobe of the cerebral hemispheres, in order of sequence of leg, arm, and face. A striking analogy is here shown between the brain and the myelon-the latter having also the motor centre in the anterior segment, or column of the cord-the sensory being posterior. So with the brain, the motor is in front-the centres of sensation being posterior and in the gray masses at its base and in the pons and medulla, the remaining gray tissues of the convolutions being seats of intellectual action. The anterior lobe presiding over individual character, the posterior and central over external fields of mental range-"associate centres" of cerebral action is a term used to designate such regions of the

Having now briefly reviewed the grand features of this dread disease, I will endeavor to make the outlines more definite, in order to get the clinical and pathological picture more clearly before our minds.

Symptoms suggesting its approach—premonitory—are rare, yet some prodroma, such as numbness or tingling in one side, and occasionally, choreic twitching—prehemiplegic, may occur; these may pass off without further disturbance, or may be followed by the more profound features of apoplexy, as vertigo, nausea and vomiting, and finally with loss of consciousness—"apoplectic insult"—suggesting congestion of the brain. Then follows still more profound evidence of pressure, preeminent, such as rapid pulse, showing evidence of acute general impoverishment of the supply of blood to the brain—"adiæmorrhysis cerebri" it is called.

We must now search for symptoms that will furnish a clue to the localization in the brain. While the patient is unconscious, our means are limited to

a few symptoms. The eves often afford suggestion of the nature of attack. Conjugate deviation, with nystagmus, transitory in character, suggest lesion on side towards which the eyes have turned and of a central location. If pupils are contracted, it suggests opium poison, but also suggests hæmorrhage into the pons or ventricles, at seat of origin of third nerve, lowering of temperature being more evidence of the latter than of opium, as a cause. At first the reflexes are practically nil, yet, as consciousness begins to return, there is more reflex in the unaffected side, then slight return in paralyzed limbs. On deep pressure, reflexes are found rather greater on that same side. If the eves twitch and rotate to one side, together with convulsive action, we may suspect cortical hamorrhage, when the pupils are not contracted, as is the case in hæmorrhage into pons or fourth ventricle, just cited.

When coma passes off, the case becomes better defined. Location of injury, or the focus, may be meningeal, cortical, or central. Meningeal, usually from fractured skull, or aneurysm, usually outside of the dura, or between it and the arachnoid. The next most frequent cause of meningeal hæmorrhage is rupture of large arteries—cerebral, in subarachnoid region, but an intracerebral hæmorrhage may burst into the meninges. There is a special form of hæmorrhage into the meninges in the new born, and is also found in some constitu-

tional diseases and fevers.

In ruptured aneurysms there may be a large quantity of blood at the base and extending into the cord, or upon the cortex, also, owing to the greater frequency of aneurysms in the cerebral arteries, the Sylvian fissures are often distended with blood.

Intracerebral hæmorrhage is most frequent in the vicinity of the corpora striata, particularly toward the outside of the lenticular nucleus, or into the internal capsule, or even into the lateral ventricles, or the insula. Hæmorrhages confined to the white semiovale are rare. Localized bleeding may occur in the crura or pons. Hæmorrhages in the cerebellum are not uncommon, arising from rupture of the superior cerebellar artery, it may be limited to the surface or rupture into fourth ventricle. Osler noticed two cases of sudden death in girls under twenty-five years from such cause.

Ventricular hæmorrhage is rarely primary—coming from the plexus or walls—while not so infrequent in early life, is more usually secondary. It may occur during birth. In adults it is caused almost always by rupture of artery in the neighbor-

hood of the caudate nucleus.

Causes of apoplexy may be classified as predisposing and exciting, or general and local, according to circumstances. The first include certain diseases and heredity due to such diseases. Syphilis, alcoholism, contracted kidneys, hypertrophy, and sclerosis—affecting the structure and valves, usually the miral, purpura, and scurvy leuchæmia, or pernicious anæmia. Sedentary habits and bowl torpor also predispose to this trouble. Such are chiefly the general causes also. Local causes may be cited as aneurysms—miliary and large—also endarteritis and diffuse softening of arterial walls; syphilis or alcoholism may be causes of such—leading to degenera-

tion and sclerosis, or even atheroma of coats of the

The apoplectic attack is usually caused by hæmorrhage from or embolism of an artery of the brain. Thrombi may occur as results of endarteritis, or sclerosis of walls.

Ingravescent apoplexy may come on slowly in the night, due to very slow leakage of blood. Small hæmorrhages in the territory of central arteries may cause hemiplegia, without loss of consciousness.

Course of the disease.—Early rigidity may develop, trophic changes now liable, such as sloughing ulcers of back and vesicles on the skin of that region; congestion of the base of lungs is said, by some, to be trophic nutritive deficiency. Marked hemianæsthesia results usually from lesion of the internal capsule, but, if of cortical origin, it is more usually limited to the face, arm, or leg, and is incomplete. In fact hemianæsthesia is rarely complete.

Disturbances of the special senses are not common, yet I have seen some well marked cases. The reason is attributable to the multiple origin, especially the superficial and the deep origin. There may be diminution of their power, or there may be, as Gowers thinks, quite usual hemianopia of homon-

omous kind, opposite to the side of lesion.

Recovery may quickly occur in the face, but in the hand and forearm is usually slow. Permanent contractures are associated with secondary descending sclerosis of the motor path, then reflexes are greatly increased. Atrophy is not a marked feature, but, when not due to secondary alterations in the gray matter of the horns of the ventricles, as in case cited by Charcot, it is probably due to lesions involving domain of the third ventricular branch of the Sylvian artery. It is most common in cortical lesions.

Prognosis.—Patients may recover from cortical apoplexy, unless very extensive—such usually following an injury. Infantile apoplexy may cause idiocy or spastic diplegia. When into coronaradiata and ventricles, it rapidly proves fatal; when intracapsular and following rupture of lenticular striate artery, it is persistent, but, if in retrolenticular space, it may be followed by hemianæsthesia and hemicorea. Bad symptoms are deepening coma.

rise in temperature and bed sores.

Embolism, as a cause of apoplexy, is due to heart disease, especially in recurring endocarditis, which attacks old sclerotic valves. Owing to the more direct course of the blood current, through the right carotid, the right middle cerebral artery is the more frequent seat of embolus, and is more frequent in women, owing to greater number of cases of mitral stenosis. When the central arteries are involved the softening, which is liable to follow, in the internal capsule, is commonly followed by permanent hemiplegia. When an embolus blocks the left middle cerebral artery, aphasia is a common result. If the apoplexy is in a young person, nonsyphilitic and not suffering from disease of the blood, embolism is very likely, particularly if there is coexisting cardiac disease.

Suldenness suggests embolus. Thrombosis may be due to embolus or, in absence of such, arise from

endarteritis, particularly syphilitic, with or without atheroma, or it may be due to aneurysms, great or small, which by their pressure, on the blood current, also, rarely are direct result of disease of blood. Embolus, following ligation of carotid, is mostly found in the middle cerebral or basilar artery.

Softening of limited areas sometimes arises from heart weakness and collapse. Apoplexy from thrombus is more gradual than is apoplexy from embous or hæmorrhage, and is preceded by headache, vertigo, tingling in fingers, embarrassed speech, loss of memory, incoherence, the paralysis beginning at one part, as hand, and extending gradually; the hemiplegia may be partial or variable. In small lesions, consciousness is retained. In syphilitic thrombus, paralysis is gradual, without loss of consciousness.

Blocking off of the internal carotids, within the skull, from thrombus or embolus, results usually in hemiplegia, coma, and death. The middle cerebral -the one usually involved-if plugged, before central arteries are given off, permanent hemiplegia usually follows from softening of internal capsule, but, if beyond this, it may be followed by hemiplegia, involving arm and face, or, if on the left side by aphasia also. If the thrombus is on the left side, in the supramarginal and central gyri, pure alexia and right hemiplegia are likely to follow, or, if it goes to temporal gyri, of left side, word deafness. Anterior cerebral artery anastomosis often prevents paralysis, but monoplegia of leg may result, hebetude and dullness also result. In cortical cases, anastomoses are so free that paralysis may practically entirely disappear in time.

If consciousness does not return in twenty-four hours, prognosis is grave in hæmorrhage, but not so poor in embolus, even where the time is longer. The outlook is better in any case, where conscious-

ness comes back, even for a short time.

Treatment.—Nature attempts to stem the ebbing tide at first, by increasing the intracerebral pressure, by equalizing the arterial pressure. Low position of the head is said to be best in embolism, while elevated is best in cases of hemorrhage. Cold packs at first to head are disapproved by some, on ground of lessening arterial pressure and thus increasing leakage, whereas cold is good, when feverish reaction appears. Views differ on these points.

Venesection is recommended in cases where there is marked rush of blood to the head, accompanied with headache, or in middle aged men, with arteriosclerosis, or accentuated aortic second sound and hypertrophied left ventricle. I personally like to draw off a small amount of blood in any case that is not too profound, if reached early, and even great depression of powers does not preclude its value in rendering relief, if done promptly and mildly. Where the pulse is small and of low tension, judgment must be exercised as to whether such is from pressure on the brain, or from heart weakness. If the latter, venesection is risky; but if the former it may save the day. Purgation is good, in hæmorrhages, but not in embolus or thrombus. Pressure on carotids is recommended.

Aconite, in fever of reaction, is good, also ice, if the head aches, to affected side. Medicine is not much advised, but I prefer to use potassium bromide

with ergot and a mild aperient. I recommend my patients, with prodromic symptoms of apoplexy, to take deep inspirations, so as to withdraw to the thorax the blood pressure bearing upon the brain. A little food in the stomach is also of value in diverting blood and nerve energy to the stomach, and has the virtue of ready use-the patients having been so warned. Wrap the swollen limbs in cotton or flannel. If the heart is feeble, give digitalis, ether, or ammonia. In syphilitic thrombosis in men, between twenty and forty years of age, give potassium iodide freely; if it is recent use hydrargyrum, by inunction. These are about the only cases of severity giving satisfaction from treatment, after early stage. In subdural hæmorrhages, operation is justifiable, but if in interior capsule or the central region of the brain, it is too dangerous. Nature, in such cases, is about the best agent. The hemiplegia that remains is hard to help.

Rubbing, after ten days, towards the body, is good; faradism after two to four weeks, massage, applied to muscles opposite paralyzed ones, even after contractions, electricity are still of some benefit.

Inform the patient's friends that, in complete hemiplegia, chances are slight, the leg may recover, but the hand rarely recovers finger movements. General health should be watched.

After middle life, there is liable to follow more or less mental weakness, irritability, and emotion-

alism.

After three months, without some marked im-

provement, there is not much hope.

If collateral circulation does not bring sufficient blood to the brain substance within forty-eight hours, the encephalomalacic focus is permanent. This fact makes such foci good objects for topical diagnosis of diseases of the brain.

As the disease is essentially in the nature of a last act, in the drama of many diseases, prophylaxis will greatly reduce emergencies and defer, or possibly dispel, the fatal blow from apoplexy.

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REPAIR OF THE PERINÆUM.

By J. W. Henson, M. D., Richmond, Va.,

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In this short paper the writer will not discuss any laceration occurring during parturition except that of the perinæum and adjacent parts of the vagina, nor will he enumerate the many distressing results of this injury. Every doctor of fair training and experience is familiar with the physical changes following it, as well as the suffering endured by the subject of such misfortune.

The prime object of this paper is to mention with emphasis, and briefly discuss two facts which seem to the writer chiefly responsible for the many failures following attempts at repair of the perinæum,

particularly in secondary operations.

It is true there are a number of other factors influencing results in this operation; but every careful surgeon is familiar with them, while the two, to be mentioned below, seem not to have attracted their share of attention, in spite of the fact that one of them is practically the key to the problem of repair of the perinæum.

The first (in importance) is imperfect comprehension, on the part of the operators, of the anatomy and physiology of the musculature of the perinæum. The second is the long interval, perhaps many years,

between the injury and the operation.

While it is granted that the transverse perineal muscles, superficial and deep, and the ischiopubic ligament are concerned in the support of the lower end of the vagina and should not be ignored, the structure of greatest importance, from the support it affords, is the levator ani muscle; it not only supports the rectum but the tendinous centre of the perinæum, the lower end of the vagina, and, indirectly, aids in the support of the uterus and bladder.

The writer has for years been struck with the apparent failure on the part of many writers to recognize all the functions of this muscle. With few exceptions the textbooks on general anatomy and gynæcology, in describing the structures in the perinæum, do not emphasize the importance of the levator ani in its relation to the female pelvic viscera.

The textbooks on anatomy give either an imperfect or incorrect description of the attachments of the anterior fibres of this muscle in the female, and many books on gynæcology are equally deficient. One writer of prominence demonstrates his belief in the importance of the levator ani, but strange to say, bases his belief on an incorrect theory as to its attachments.

Deaver, in his excellent Surgical Anatomy, gives the best description found in a textbook of the attachments of the anterior fibres in the female, and yet he does not give this connectively, but one has to piece it together, getting the parts from two widely separated paragraphs. He furnishes, however, in this book, a magnificent cut showing exactly what those attachments are, thus proving his faith. Weisse's Practical Anatomy has a cut showing the same thing equally as well.

The anterior fibres of the levator ani muscle arise from the posterior surface of the body of the os pubis and pass backward almost horizontally, inclining a little inward. Viewing both muscles, right and left, at the same time, the fibres behave as follows: The superficial fibres envelope the orifice of the vagina, and are inserted into the central tendon of the perineum. The deeper fibres envelop the lower part of the lateral and posterior walls of the

vagina, forming a sling.

It is stated by some writers that the lower end of the vagina is supported indirectly through the attachment of the levator ani to the rectum, thus pulling this viscus forward and pressing the vagina towards the pubis. This is true to an extent, but the chief support of the orifice and lower end of the vagina is that which is gotten directly through the anterior fibres of the levator ani, which being an elastic sling attached to the back of the rigid transverse bar in front, by drawing the perinæum and lower part of the floor of the vagina towards the pubis, not only act as a sphincter, but offer an ef-

fective, though resilient, support for the bladder and uterus.

It must be admitted, as stated before, that the attachment of the levator ani to the sides and lower end of the rectum aids in the support of the vagina, this aid being chiefly needed just above the vaginal attachment of the muscle. It is possible to have a central tear reaching from the fourchette through the attachment of the levator ani to the tendinous centre of the perinaum, without a subsequent rectocele or cystocele.

This is due to the fact that some of the anterior fibres of the levator ani pass behind the vagina, above the level of the central tendon, and are not torn necessarily when the latter is torn. Furthermore, the rectal attachment of the muscle lends its aid here.

When lateral tears occur in the vagina, they sometimes sever some of the rectal attachments of the levator ani. Such defects should be taken care of in operating. The relation of the levator ani to the perinæum and vagina in the normal condition can easily be demonstrated by physical examination.

With the thumb in the vagina and the index finger on the floor of the perinaum or through the anus, one can, by firm but continuous pressure, force the part back from the pubis and feel the tissue re-

lax and thin out between the fingers.

Irritate the perinæum or vagina with the finger nail, or ask the subject to contract the parts, and the ostium and lower end of the vagina will be drawn towards the pubis, and the tissue between the fingers will become thicker and firmer, which would not be the case if this pulling forward were due simply to the muscle fibres attached around the lower end of the rectum. Again, one can, with the index finger of each hand in the vagina and the thumbs outside, follow the vaginal levator loop from the pubic attachment on one side, across the perinæum to the pubic attachment on the opposite side.

Again, after laceration involving this loop, one can trace the muscular column of the anterior fibres of the levator ani backward to be lost in the tissues at the side of the lower end of the vagina.

When such a laceration occurs, the anterior fibres of the levator ani et vaginæ, as this muscle might well be called, have nothing to pull upon. They have lost their function. Like muscular tissue elsewhere, when inactive, the fibres atrophy. The longer the interval between the injury and the restoration of the attachment of the muscle, the fewer fibres are left. If any one needs a practical demonstration of this let him examine the recti abdominis after they have for years been widely separated and inactive from the presence of a ventral hernia. We see then that delay in repairing a laceration of the perinacum involving the musculature (and only such lacerations need repair) might well be reckoned seriously as a factor determining failure.

It should then be the duty of the obstetrician torepair immediately every laceration involving the muscular attachments, and it should be the duty of every physician, when an old, unrepaired tear, of the same class, presents itself to him, to use every argument to persuade the patient to consent to am operation without delay. As to which operation should be chosen only this point need be urged: Select the one which provides for the thorough

restoration of the muscular attachments.

The writer has for years used the flap splitting method by preference; first, because the muscles can be easily reached, and second, because no tissue is lost (the redundant tissue idea being merely a bugbear). The Mayos have improved this operation very much by the way the incision is made, and by the method pursued in placing the sutures.

The incision, as it is carried up on each side of the vaginal orifice, is inclined within the latter just enough for the anterior margin of the new perinæum. after the sutures are tied, to be a little back of the meatus so that upon micturition the urine is conducted off by the perinæum as a gutter, none of it trickling into the vagina, as it frequently does

after perineorrhaphy by other methods.

In introducing the sutures the needle is made to avoid puncturing the skin as it is passed in, and the mucous membrane as it is brought out, or vice versa. Thus the suture can take more of the muscular tissue in its grasp, and furthermore, it does not cut and get loose as sometimes happens when skin or

mucous membrane is caught.

The writer, believing that the sutures, even as introduced by the Mayos, will not restore to their attachments the fibres of the levator ani which pass behind the lower end of the vagina, above the central tendon of the perinæum, uses a figure of eight suture when introducing the second one counting from the lower end of the row of sutures, thus taking two bites at the muscle on each side with one

The same result could be accomplished perhaps better by placing a chromacized catgut suture to bring together the muscular fibres above the central

tendon before the other sutures are tied.

In conclusion it must be said that a detailed description of the operation has been purposely omitted, because such description would be tedious, and because the purpose of this paper is not to laud any particular operation, but to point out and insist that it is just as important to search for and thoroughly suture the several bands of the levator ani as it is, in case of complete laceration of the perinæum, to find and bring together the ends of the spincter ani.

215 BOULEVARD.

APOPLEXY IN THE CLASSIFICATION OF DISEASES.*

By Frank P. Foster, M. D., New York.

In this brief paper I shall deal only with cerebral apoplexy, or hæmorrhage into the brain, without paying any attention to "pulmonary apoplexy," a term which is passing into disuse apparently.

Cerebral apoplexy, or cerebral hæmorrhage, is included under diseases of the nervous system in the Manual of International Classification of Causes of

Death (the abridged translation used in the United States Census Office), in the Royal College of Physicians' Nomenclature of Diseases, in the Nomenclature of Diseases and Conditions employed in the case records of Bellevue and the Allied Hospitals of New York, and in all the textbooks of the practice of medicine with which I am acquainted. In special works on pathology it is treated of in connection with the circulatory system, though some of these works, according to the plan on which they are written, deal with it again under the diseases of the nervous system.

There are some physicians, it seems, who think that apoplexy ought to be classed with the vascular diseases in mortality returns and hence in certificates of death. It appears to me that this is a matter which may properly be considered by the Section on the Revision of the International Classification of the Causes of Death of the American Public Health Association. Nobody, I take it, will deny that apoplexy is essentially a disease of the bloodvessels or question the desirability of classifying diseases in accordance with their ætiology so far as such a classification does not conflict with practical considerations or with the general tenor of thought among practitioners of medicine.

Now, it seems to me that the general tendency of physicians is to think of apoplexy as pertaining to the brain. This is natural, and I fear it would be very difficult to break them of it. Is it desirable to make the attempt? To my mind, it is not; I think it would be not only impracticable, but also illogical. The present International Classification ranges malignant neoplasms by themselves, regardless of their situation; but it deals with benign tumors according to the part which they occupy. I think that this is correct. Apart from the displacement of fragments of bone, fractures of the skull owe their gravity to hæmorrhage from an intracranial vessel which has been torn in the injury, but would anybody dream of treating of such cases under the head of injuries of arteries? Tuberculous infection varies in its gravity according to the part involved, though the invading organism is the same in all instances. We dread the pulmonary and the meningeal manifestations much more than those of the spinal column, the joints, or the lymphatic glands, and in practice we do not associate them all together. It is the part affected that is of the greatest practical importance, and in the case of apoplexy

Whoever happens to be studying diseases of the vascular system from the statistical point of view may quite as readily obtain his data from returns of apoplexy as from those of degeneration of a cerebral artery, quite as he would have to do if he were dealing with some other disease of a particular organ, but one that owed its origin to vascular degeneration. We should commit an error, I think, if we were to demand that practitioners should substitute some other term for the time honored apo-

it is the fact that the brain is involved that is the

significant feature.

554 WEST ONE HUNDRED AND FOURTEENTH STREET.

^{*}Read hart to be not the Section on Revision of the Irremational Clar and represent Corner of Death of the American Public Health Association of the corner of agreeing held in Winnowsy Canada. Vignet 25, 1975.

Our Renders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intercals. So far as they have been decided upon, the further questions are as follows:

LXXVIII.—How do you treat acute coryza? (Closed

September 15, 1908.) LXXIX.—How do you treat sick headache? (Answers

due not later than October 15, 1908.)

LXXX.—How do you treat asphysia neonatorum.' (Answers due not later than November 16, 1908.)

Whoever answers one of these questions in the manner.

most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be atreceive a prize of 325. Not important conductor will be disease solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXVII has been awarded to Dr. Maxwell S. Simpson, of Titusville, N. I., whose article appeared on

page 599.

PRIZE QUESTION LXXVII.

THE TREATMENT OF VARICOSE ULCER.

(Continued from page 602.)

Dr. Walter E. Hayes, of New York, writes:

The treatment of varicose ulcers should be both systemic and local. The body needs building up to enable it best to combat this pathological condition. The various predisposing diseases, such as scurvy, diabetes, rheumatism, gout, arteriosclerosis, or anæmia should receive special treatment, and the body put into a condition of greatest resistance with appropriate tonics. Tuberculosis and syphilis should be properly treated. Change of climate and rest are often valuable adjuncts to local treatment. The diet should be carefully regulated. Alcoholic drinks should be forbidden, and tea and coffee cut to a minimum amount. Salted meats, pork, shell fish, pastries and confections, pickles, sauces and condiments, cheese, and excess of starchy foods should be avoided as much as possible. The bowels should be carefully attended to, the salines being best in this condition. Stomachic tonics and digestives should be used as required.

If possible, the patient should be put to bed and the affected leg elevated. However, this is rarely done, because of the class of individuals in whom these ulcers occur. Though this is the ideal treatment, prompt response being made to local dressings, the ambulatory is the usual method of treatment. The patient usually comes to the physician because of the inflammation surrounding the ulcer or ulcers. Our first measures are to be directed to the reduction of this. Here moist dressings are to be used. A solution of lead acetate, 5 parts; alum. I part; to water, 100 parts; is efficient when applied on gauze and the leg kept constantly wet. Thiersch's solution, consisting of salicylic acid, I part; boric acid, 5 parts; to water, 500 parts; may also be used to advantage. Sometimes the heat and pain will be best relieved by the employment of a twenty per cent, ichthyol solution in liquid petrolatum or pure

After the inflammation has subsided, the ulcer must be thoroughly cleansed to promote the formation of healthy granulations. A five per cent. solution of formalin in tincture of green soap, rubbed gently into the sloughing area once or twice daily, is very effective. A one half to one per cent. solution of creolin may also be of service in cleansing the ulcers of the foul discharge escaping from them. Sometimes the destruction of sloughs is hastened by the use of the silver nitrate stick, which should be lightly but thoroughly applied over its entire The latter will also stimulate sluggish extent. Hydrogen peroxide, bichloride of mercury solution, I in 1000, or phenol solution 1 in 40 to 80, are very useful as washes prior to the application of some stimulating dressing. A solution of balsam of Peru, I part; in castor oil, 2 parts; except where the ulcer is very painful, gives very good results when applied directly to the ulcer and covered with absorbent cotton. Or a twenty per cent. solution of ichthyol in liquid petrolatum, or in lanolin as an ointment, applied once daily, is stimulating. If the surface of the ulcer is clean, but bathed in a serous discharge, powders may be used to dry it, such as aristol, xeroform, boric acid, iodoform, or zinc oxide. There are also others, but these are the most efficient. When the ulcer shows sluggishness in healing, the stick or ten per cent. solution of silver nitrate, or a solution of zinc or copper sulphate in the same strength, will, by setting up an inflammatory reaction, stimulate the growth of epithelium.

To relieve the venous stasis and congestion, and to provide a proper blood supply is absolutely necessary to a cure. The glycogelatin fixed dressing of Unna, consisting of gelatin and glycerin, aa 15 parts; zinc oxide, 30 parts; and water, 40 parts; should be heated on a water bath until it can be easily poured. A thick layer of this should then be applied to the whole eczematous area surrounding the ulcer and including it, if it be not too large, and covered with a thin layer of absorbent cotton. After it has become quite dry, which it does in a few minutes, the excess of cotton should be stripped off. This impermeable dressing relieves the itching which is at times so annoying, and exerts considerable pressure. It will be necessary to cut a fenestra in the dressing to treat the ulcer, if there is much discharge. Over this dressing of Unna's a muslin roller bandage applied will give added pressure, the bandage to be applied evenly and without wrinkles. Or a rubber bandage may be used to give even greater pressure. The roller bandage should be removed when the patient retires to rest. This glycogelatin dressing should last from two to three weeks, when a fresh one may be applied. After congestion has been relieved and the granulations are almost on a level with the surrounding skin, the edges of the ulcer should be lightly touched with silver nitrate stick, and strips of zinc oxide adhesive plaster, from one half to one inch in width, applied evenly around nearly the whole circumference of the leg. The

strips should overlap to the extent of about one third of their width and extend from one inch below the ulcer to one inch above. The plaster should be changed every few days. This pressure will continue the formation of new, healthy granulations and aid in the absorption of the thickened margins of the ulcer. Occasionally it may be necessary to make several small, lateral incisions of the edge, especially if the callosity is marked. Or a ring of wood or metal of the size of the outer edge of the ulcer may be tightly strapped on to make firm pressure. At times the base of the ulcer may become so firmly attached to the underlying tissue that measures will have to be taken to loosen its attachment and thus secure contraction of the ulcer.

If the varicosity of the neighboring veins is so marked that failure of healing is to be partly attributed to them, operative measures must be employed. Complete obliteration of the vein is to be desired. Thus the return of the blood from the lower extremity is accomplished by the deep veins, which are well supplied with valves and do not become varicose. Excision of the vein in six or eight places in its course is the best operation. Multiple ligature of the vein in thirty or forty places may be done. Or a circular incision may be made from four to six inches above the knee and a cuff of integument turned back for about two inches. All the superficial veins are then extirpated for one half to one and one half inches. This is very satisfactory usually. Trendelenburg's method of ligating the internal saphenous vein just below the point where it empties into the femoral has given good results.

In those ulcers which resist these measures and fail to heal, skin grafting or some sort of plastic operation should be done after the surface of the ulcer has been thoroughly cleaned and freshened. The transplantation of a piece of whole skin from a healthy surface and sutured down to the edges of the ulcer is the best method, because the tissues are less likely to undergo contraction and the appearance on healing is better. However, the small Thiersch grafts will grow much better. It is rarely possible to secure a flap of healthy skin nearby to use in a plastic operation, but may be tried.

Once the skin is healed, the patient should wear a snug fitting elastic stocking in order to support the veins, and thus prevent a subsequent breaking down and ulceration.

Dr. Paul P. Swett, of Hartford, Conn., states:

For purposes of treatment varicose ulcers may be divided into the following classes: 1, Recent ulcers: 2, old ulcers involving small areas of tissue; 3, old ulcers involving large areas.

The objects to be aimed at in the treatment of all these classes are the same, but the methods employed vary somewhat, and the above classification will be found convenient on this account.

Rational treatment involves the following essentials: I, Constitutional remedies. And 2, local treatment; a, correction of defective blood supply, which, by causing a passive congestion of the parts, is the fundamental cause of the trouble; b, reduction of inflammation in the ulcer and of the tissues in its neighborhood, which frequently present a cellulitis; c, cleansing of the ulcer; d, stimulation of healing process.

Constitutional treatment must be directed toward improvement in the patient's general health. Any organic disease must be appropriately treated, and as these patients are frequently met with among the overworked and poorly nourished classes, tonics, rest, generous diet, and such measures must be employed in order that full benefit may be derived from local treatment.

Keeping in mind these general considerations, the three classes of ulcers will be considered individually.

1. Recent ulcers. The passive congestion demands first attention and is best reduced by recumbent posture in bed, or, when this is out of the question or seems unnecessary by reason of the limited amount of congestion, by bandaging the leg from the toes to the knee with an ordinary stockinette horse bandage of sufficient length, 4 inches in width. The inflammation is reduced by a wet pack, consisting of several layers of gauze, soaked in a solution of alum acetate (5 parts lead acetate, and 1 part alum, to 100 parts water). Rubber dam may well be wrapped about the gauze and the whole encompassed by a horse bandage, as this saves frequent rewettings. Rest for the limb and the wet dressings must be continued till all the swelling and inflammation have subsided. Healthy granulations do not easily form unless the base of the ulcer is clean, and, as far as possible, sterile. Often, in recent ulcers, this treatment suffices to effect a cure; but when this does not occur the sloughs must be picked off, and their removal frequently hastened by touching them with a stick of silver nitrate. Having relieved the congestion, reduced the inflammation, and cleansed the ulcer, the patient is now allowed to leave the bed with the affected leg firmly bandaged, but if the healing process is not complete, as it frequently will be in these recent cases, it may be further stimulated by repeating the application of silver. Then apply around the margins of the ulcer a soothing zinc oxide ointment with three per cent. carbolic acid solution added. This dressing, as all the others, should be changed every twentyfour hours, though it may be allowed to remain for forty-eight when necessary. As soon as the reaction from the last application of silver has subsided, the ulcer may be dusted with boric acid powder, covered with a piece of rubber tissue, and the limb kept firmly bandaged. The application of a dry powder under the rubber tissue prevents the maceration of the granulations so frequently found where ointments are employed for long periods, and promotes the process of cicatrization.

As soon as the ulcer is completely healed, a silk elastic stocking is ordered, as this affords the readiest method of maintaining corrected circulation. In selected cases, however, removal of the affected veins is indicated, and this procedure should always be considered in younger subjects.

2. Old ulcers involving small areas of tissue. In this class the primary steps in treatment are the same as in class one, i. e., the reduction of congestion and of the cellulitis. It is, however, more essential that these patients be put to bed at once, and there is very little prospect that healing will occur without active stimulation. When the congestion and inflammation are reduced the patient

may be allowed to use the leg to a limited extent, if it is well supported by a horse bandage. Cleansing and sterilization are then promoted by a solution of creolin (one dram to a quart of water) applied as a wet pack. Healing is stimulated by daily applications to the base of the ulcer of gauze soaked in balsam of Peru and castor oil, with the zinc oxide and carbolic acid ointment applied around the margins. Usually, in this class, the edges of the ulcer are callous and thickened, and as soon as the granulations have reached the level of the edges, strapping with adhesive plaster strips, extending an inch above and an inch below the ulcer and reapplied preferably each day, forms the readiest method of completing the healing process. Occasionally the granulations become too prolific under this treatment, and they must be cut down with the silver stick, and the zinc oxide and carbolic acid ointment applied for a day or two till the reaction subsides, when the strappings may be continued.

3. Old ulcers involving large areas. The first three stages of treatment in this class are the same as class two. The essential difference lies in the methods which frequently are required to promote healing. The adhesive plaster strapping, if the granulations develop sufficiently, may be tried. If this fails, deep cross incisions of the base of the ulcer, extending through the edges, often promote healing by loosening the adherent base and permitting cicatrization to occur. If this method does not prove successful, skin grafting is the usual last

resort and is almost always successful.

Emphasis is laid on the importance of active, energetic, and intelligent treatment of this distressing affliction in the outset. Success depends largely upon the efficient carrying out of the first two stages—correction of blood supply and reduction of inflammation, and when this is not done the ulcer is simply unable to heal.

Dr. E. J. Leavitt, of Brooklyn, N. Y., observes:

In the treatment of varicose ulcer one must consider the patient, the circulation, and the ulcer from

the following viewpoints:

The state of the patient's general constitution must be carefully inquired into, since ulcers, as other wounds, will heal more readily in the healthy person. Also the social condition of the patient will have great bearing in the prognosis of the case, as well as in the choice of method of treatment as to time and expense.

Sluggish circulation being the chief ætiological factor, the cause of it must be ascertained. Valvular disease, abdominal tumors, pregnancy, tight garters, protracted standing—in other words, the usual causes of varicose veins—must be sought for and

overcome as far as practicable.

In many cases varicosities below the ulcer are secondary to chronic infected or traumatic ulcer, with its associated cedema and plastic or even cellular exudation, which may permeate all tissues from the cutis to the bone, in this manner choking off the venous and lymphatic stream.

In the usual cases of ulcer secondary to varicose veins attention must be directed to the veins. Among palliative measures may be mentioned cold bathing followed by friction of skin, exercise, of which bicy-

cling, since it brings all leg muscles into play, is probably the most beneficial form. The habit of resting one's legs in an elevated posture is more hygienic than elegant. Smoothly applied bandages or elastic stockings will afford material aid in maintaining an even circulation.

In more aggravated cases compression pads over the saphenous vein, or ligation of the vein, will be required. These procedures are most effective in cases due to weakened venous valves, in other cases excision of the veins is to be preferred. Weakened veins can be demonstrated by Trendelenburg's test, the limb is elevated and stroked centripetally, after the veins are emptied in this manner digital compression is applied over the saphenous vein and the limb lowered, the veins will then be seen to dilate slowly, but on relieving the compression they will instantly become distended to the greatest degree.

Cleanliness and relief of congestion must, above all, be the constant aim throughout the course of local treatment. All cases presenting themselves for treatment should undergo a thorough scrubbing with soap and hot water, followed by alcohol wash from knee to toe. Sloughs are then cleaned with hydrogen peroxide and scraped away with a sharp spoon if necessary, until healthy tissue is reached, this is then covered with iodoform powders; if there is pain and inflammation to be relieved, the limb is loosely bandaged with a few layers of gauze bandage and the patient is directed to rest in bed (this is very important to relieve congestion) and lead opium wash or a mixture of ichthyol and alum, āā one per cent.; lead acetate, five per cent.; constantly applied through the bandage. The ulcer should be cleaned daily, until discharges diminish, for which purpose hot saline or hydrogen peroxide washes are the best agents.

When the inflammation has subsided a dry dressing is substituted in the following manner: A piece of aseptic gauze is strapped over the ulcer to absorb the discharges, the zinc oxide strapping is then continued all over the congested parts; it may be made to cover the whole leg if necessary, leaving a narrow portion bare so as not to cut off all circulation; should there be an associated eczema the strapping is left off the eczematous parts, which are then covered with a powder of bismuth, twenty-five per cent.; alum, five per cent.; calomel, ten per cent. in starch; in either case, a piece of gauze and thick padding of nonabsorbent cotton is firmly but smoothly bandaged on, extending from knee to ankle, with muslin, flannel, rubber, or elastic bandage. The flannel bandage is more economic and satisfactory. The nonabsorbent cotton serves as a moist compress, and the bandaging equalizes circulation.

Under this treatment inflammation is reduced, congestion diminished, and ulcer cleaned in a surprisingly short time. The granulations assume healthy aspect, and the edges become a pale bluish color, indicating advancing epithelial covering. Pale and flabby granulations may be stimulated by pure ichthyol or better by light silver nitrate touches; hard, callous edges can be made to soften, and the spread of epithelium hastened by direct firm application of zinc oxide strapping over the ulcer. In obstinate cases the patient is directed to apply hot

boric acid compresses for several hours before presenting himself for treatment; this is followed at the office by dropping of water as hot as can be borne from a level higher than the patient's head onto the ulcer, and treatment continued as described.

Ointments are never to be used on discharging surfaces; the fatty substance hinders absorption of

discharges.

Success will largely depend on the skill with which the strapping and bandaging are applied and the ability of the patient to comply with the physician's orders.

For extensive ulcers of long standing, not responding to judicious treatment, we have to resort to radical procedures, as by Thiersch's grafts or flap transportation from the other leg; the former is applicable to cleaning granulating ulcers only.

(To be concluded.)

Correspondence.

LETTER FROM LONDON

The Medical Inspection of Schools.—The Hampstead General Hospital.—Women and the Royal College of Surgeons.

London, September 8, 1908.

The large number of appointments that have recently been made in connection with the new Medical Inspection of School Children's Act have to some extent benefited the general practitioners. This act will give employment to a large number of medical men and women, and with the falling off in the number of students at the medical schools there will probably be felt some relief from the overcrowding that has existed in the ranks of the medical profession in England in recent years. A noticeable feature of these appointments is the large number of women who are candidates, and it is a matter for satisfaction that there has been very little tendency to lower the salaries of women inspectors as compared with those of men. The women doctors have supported their confrères very loyally in this respect, and have refused to accept salaries lower than those given to medical men for the same work. One difficulty in connection with these appointments is that very few medical men have had special experience in the examination of school children, and many have felt some diffidence in applying for these posts, owing to the special nature of the work to be done, as until quite recently the various medical teaching institutions have not provided special courses of instruction in the particular duties of these new posts. Various postgraduate institutions have now taken up this branch, and courses of lectures are being delivered on the medical inspection of school children, which deal with the special points to be observed in the systematic inspection of school children, and these should be of great use to the candidates for the new inspectorships.

A very curious situation has arisen with regard to the recent appointments at the Hampstead General Hospital This hospital had up to recently a staff consisting of some of the general practitioners of the neighborhood. Lately the staff was reorganized. The hospital committee applied to King Edward's Hospital Fund for assistance, and the Fund would grant this asistance only on condition that the staff should consist of consulting physicians and surgeons. In spite of the strong opposition of the general practitioners of the district, the board of the hospital adopted this change and advertised for physicians and surgeons. The British Medical Association supported the medical practitioners of the district in the attitude they had taken up, and, in accordance with their usual procedure in such cases, issued a warning notice in the columns of the British Medical Journal from week to week for several months. In spite of the warning notice, however, these appointments were accepted by some of the most prominent physicians and surgeons, including the chairman of the Council of the British Medical Association. It is not too much to say that the result of these elections came as a great surprise to most medical men, and though there probably has been some agreement as regards these appointments, it is very strange that at the time the warning notices were actually appearing in their official journal, the high officers of the British Medical Association applied for and accepted these appointments. Under such circumstances it appears that the warning notice is entirely futile, as it has been contemptuously ignored by the officers of the associa-

The question of the admission of women to the Royal College of Surgeons, which has been in abeyance during the vacation, will unavoidably come up for consideration again in the course of the next few weeks. At the forthcoming meeting of the Council, Mr. Clinton T. Dent, F. R. C. S., is going to move that steps be forthwith taken to admit women to the examinations of the Conjoint Board of the Royal Colleges of Surgeons and Physicians, and, further, that women be admitted to the examinations for the fellowship of the Royal College of Surgeons and for the license in dentistry. It will be remembered that the Comitia of the Royal College of Physicians recently passed a resolution in favor of admitting women to the college, but decided to take no definite step in the matter until the opinion of their surgical confrères was made known. The surgeons thought it right to obtain the opinion of the members and fellows of the college by taking a poll, and the result was that a majority of about 400 out of 10,000 voters decided adversely to the cause of the lady doctors. The Council then put off their final decision until after the summer vacation. There is no doubt that the result of the poll came as a great surprise to the bulk of the medical profession in London, it being confidently expected that a poll favorable to the women students would be declared. The Council of the Royal College of Surgeons is, of course, not bound to abide by the decision of the poll taken, and, considering that the medical and surgical degrees of several British universities and the diplomas of the Royal Colleges of Scotland and Ireland have long been granted to women, it may confidently be expected that it will not be long before the latter will be admitted to the examinations for the M. R. C. S. and L. R. C. P. At the same time it is not unlikely that the higher distinction of the fellowship of the Royal College of

Surgeons (F. R. C. S.) will be reserved for men

indefinitely.

It is only during the last thirty years or so that women have been able to obtain a British medical qualification with comparative ease, as, although Mrs. Garrett Anderson (at that time Miss Garrett) succeeded in obtaining a diploma in 1865, so much opposition was then raised to the admission of women to the medical profession, and so many obstacles were thrown in the way of the pioneers of the movement, that it was quite ten years before any further progress was made. In 1874 there were only two women whose names appeared on the Medical Register, those of Mrs. Garrett Anderson and Miss Elizabeth Blackwell. The latter had been practising in London some little time before the compilation of the first Medical Register, in 1858. and when she applied for her name to be included in the new official list (she was an M. D., United States of America) it was found that she could not be refused. Now there is a large medical school in London, connected with a well equipped hospital, The Royal Free Hospital, which is solely reserved for women students, and they can enter the profession with comparative ease.

Therapeutical Rotes.

Blepharitis.—In the *Therapeutic Gazette* for August, 1908, Brav formulates what he styles a rational method of treating blepharitis. After describing the various forms of the disease he touches on the different therapeutic measures employed to combat them. Blepharitis marginalis is usually accompanied by conjunctival inflammation, where it is best to employ a twenty-five per cent. solution of glycerite of tannin as a local application. A boric acid solution should also be prescribed for home use, as for example:

Massage of the lid is an important therapeutic measure. It is best applied by means of an ointment, and given by means of a series of gentle stroking movements made upon the closed lids with the index finger carried horizontally from the inner to the outer angle of the palpebral fissure. These movements should last from three to five minutes. The ointment of yellow oxide of mercury seems to have a favorable influence on the tissues of the lid. In some cases salicylic acid ointment exerts a more favorable action, especially when the blepharitis is accompanied by considerable itching. Brav prescribes the following simple combination:

| B | Salicylic ac | eid, | | | | gr. i; |
|----|--------------|------|-----------|------|------|------------|
| | Hydrous w | 1001 | fat, | | | 3i. |
| M. | Sig.: Apply | as | directed. | | | |

In some cases in which the itching is very marked he uses a tannic acid ointment of the following composition:

| B | Tannie neid. | gr. ii: | |
|----|--------------|-----------|--|
| | Petrolatum, | | |
| M. | Sig.: Use as | directed. | |

The use of cocaine is recommended where it is necessary to relieve the itching, and the following is prescribed by Brav [which, it may be remarked, is a wholly incompatible mixture from a theoretical standpoint]:

| 12 | Tannie acid gr. ii; | |
|----|--|--|
| | Cocaine hydrochloride, gr. i Petrolatum, 5ii. | |
| 11 | The state of the s | |

The Treatment of Chronic Gastritis.—Kahane recommends equal parts of compound tincture of cinchona and tincture of orange peel, fifteen to twenty drops of which are to be taken twice daily before eating, or the following:

Ointment for Psoriasis.—Danlos, cited in Journal de médecine de Paris for June 27, 1908, uses the following ointment in the treatment of psoriasis, eczema, etc.:

| P_i | Oil of cade, | | | ٠ | | | | | ٠ | | | -3 | iiss | . 9 |
|-------|---------------------|------|------|-------|------|------|--|--|-------|------|--|----|------|-----|
| | Talcum, Zinc oxide. | | | | | | | | | | | | - 1 | |
| M. | | | | | | | | | | | | | .11 | |

The Use of Paraffin in Hernia.—Dr. Charles C. Miller describes, in his Cure of Rupture by Para fin Injections, the paraffin compound as follows: White petrolatum, 3viii; paraffin, 5viii; melt together. This should be sterilized by standing the mixture in a covered container in a vessel of water which is also covered, and the water should be kept boiling for half an hour. With the paraffin should be boiled a number of test tubes; into each of these test tubes sufficient paraffin is poured for an injection; the test tube is then to be plugged with sterile cotton or cork. When the paraffin compound is to be used the test tube is heated so as to melt the paraffin. A softer mixture has the following composition: White petrolatum, 5viii; paraffin, 5ii. Melt together as in the preceding formula.

The Treatment of Hay Fever.—Menier (Bulletin général de thérapeutique, September 15, 1908) advises the inhalation of a solution of menthol in chloroform (I part of menthol in 25 parts of chloroform), or a spray of adrenalin solution, I in 2,000, to ward off an expected attack of hay fever.

The derangement of vision and eye trouble may be overcome by the instillation of one drop of either of the following solutions in each eye:

| R | Eserme sulphate. | (I) |
|-----|------------------|----------------|
| 71. | | (2) |
| М. | Distilled water. | 2" %: 51155 |

When the asthmatic symptoms predominate the following mixture is effective:

| R | Potassium bromide,5v; |
|----|--------------------------------|
| | Tincture of lobelia, |
| | Tincture of grindelia robusta, |
| | Camphorated tincture of opium, |
| | Syrup of orange peel, |
| M. | Decoction of senega, |

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Edited by

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NEW YORK, SATURDAY, OCTOBER 3, 1908

THE SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The week now closing, the second of the three weeks devoted to the congress, has served for all that portion of the work which took the form of papers and discussions. It may be said of the communications that all of them were of value and that some of them were of phenomenal importance. There can be no doubt that the congress will prove to have been highly effective in diffusing our present knowledge of tuberculous disease among physicians and among the people. The experience and conclusions of many men of great capacity, assembled from various countries, have by its instrumentality been laid before us in a manner calculated to appeal more than is usually the case to the ordinary understanding of medical practitioners and of the educated portion of the general public.

The general management of the congress cannot be too highly commended. Perhaps its most notable feature was to be found in the printed abstracts of papers with which every member was provided at the time of registration. The complete set was printed in four different languages, English, French, German, and Spanish, and each member received the set printed in his native tongue. But this was not all; the abstracts had been prepared with unusual skill—not, we fancy, by the authors of the papers as a rule, for authors' abstracts are apt to be unbearably prolix. It is expected that the full to tof the proceedings will be ready for dis-

tribution in three months from now. If that expectation is fulfilled, its accomplishment may well be called extraordinary.

On the whole, it may be said that the place of meeting, the new National Museum, was well chosen. All the exhibits and all the section meetings were under one roof, and this arrangement was in pleasing contrast with the scattering of forces which is almost always a serious defect in the medical conventions held in this country. One did not need to subject himself to confusion or appreciable loss of time in getting from one section meeting to another. There was one drawback, to be sure; the building being unfinished and the work of construction still necessarily going on, the noise made by stonecutters and other workmen interfered materially with the efforts of some of the speakers to make themselves heard. In but few of the sections, however, was this distracting feature apparent.

Of course the attendance was larger than had been expected—almost 7,000. Such an occurrence is almost the regular thing. The badges, which were really of artistic device, gave out very early in the week, on the morning of the second day, and the best that the polite young women in attendance could do was to assure late comers that more badges had been ordered, and that they would receive theirs when the fresh supply came. While it is true that the usefulness of such a badge is present rather than prospective, he would be a captious man who should complain of such a small matter. An exceedingly ingenious expedient was hit upon for inducing persons to come early and stay longthat of assigning all the notable entertainments to Monday and Friday. The man who thought he could play touch and go with the congress was deservedly disappointed—that is to say, if he cared much for receptions and "smokers" and other such diversions - for there were none set down for Tuesday, Wednesday, or Thursday. There are so many persons who do care for such things that it will be strange if a similar device is not employed in connection with large gatherings yet to come. The general management of the congress, we repeat, was admirable.

THE PHILADELPHIA TUBERCULOSIS CONFERENCE.

The week now ending has, of course, been the most notable of the three weeks devoted to the International Congress on Tuberculosis, held in Washington, for it has been devoted to the reading and discussion of the formal papers presented in the

various sections. Many of the visitors from foreign countries and from distant parts of our own domain, however, betook themselves naturally to the scene of the congress some days in advance of the actual opening of the section work, and it was convenient and agreeable for numbers of them to stop in Philadelphia for a time on their way to Washington. They were thus enabled to take part in the important conference held in Philadelphia last week and give it a truly international character.

Philadelphia was already actively engaged in preparing for the celebration of the 225th anniversary of its founding, but the citizens were not so absorbed in this work that they could not spare time and energy for promoting the scientific efficiency of the conference held in Horticultural Hall, and the comfort and entertainment of their visitors. The conference was made a worthy introduction to the work of the Washington congress; more than that, it was in itself a notable event in the present world combat with tuberculous disease. It was well attended, and among those present were many whose names are prominent in the work. So general was the interest of Philadelphians in the occasion that the city in its corporate capacity entertained the participants in the conference at a formal dinner, which was well attended.

SCIENCE AND THE CHURCH.

The writer of history has a most difficult task. If he is content to take things on the surface, as many do, and is possessed of literary merit, his work finds favor with the people, and he often stamps the ideas of generations with his own notions, incorrect though they may be. To the more thorough student of the events of the past, due consideration of the manners and customs of a time makes him hesitate to measure previous generations by the notions of the present times, since he realizes that the customs of a people are in a constant state of flux, and that which receives approval at one time and in one place is met with disapproval in the same place some time later. The careful historian does not overlook the influence of group interests in the making of current opinions. Men banded together in groups produce group interests, which override individual interests and are in definite antagonism, open or concealed, to other interests. One of the most intricate and subtle of these antagonisms has been that of the struggle of religious groups, and it is no wonder to find that the moral weapons forged by the conflicting parties contain much untruth, calumny, and deceit.

It amazes many of us physicians of the twentieth

century to find that in the so called battle of religion and science so much uncalled for mental squinting has been present, and one reads the recent work of Dr. James J. Walsh, on The Popes and Science. with a definite feeling of sympathy that so powerful a group of men should have been so maligned. To the student of the customs of a time and of group sentiments it is perfectly intelligible that misrepresentation should have been thought a necessary weapon in the contest. Read from this philosophical attitude, the facts that Dr. Walsh presents are self evident, but for the mass-the usual unthinking mass—that adopts its notions, opinions, manners, and customs from those whose interest it is for such to be adopted, Dr. Walsh's championship of the popes in science will come as a surprise, if it is not received with a murmur of protest. The antagonism of the Church to science is a monumental myth; how it originated, the careful historian has not yet told us entirely. That its origin is to be found in the clashing of group interests there is little doubt. Dr. Walsh tells us about much of the humbug of some revered history.

Dr. Walsh shows from documents and the most recent authoritative histories of science, and especially of medicine, that instead of opposing it, the popes were as judicious and beneficent patrons of science as they were of art. He tells us that for seven centuries the papal physicians have been the greatest investigators and writers in medical science, and that no other set of men connected by any bond in history, even the medical faculty of any of the large universities, can compare with them in accomplishment. They include the father of modern surgery, the author of the first great dictionary of medicine, the author of the first treatise on gunshot wounds, the father of comparative anatomy, the discoverer of the circulation of blood in the lungs, the anticipator of Harvey in the discovery of the systemic circulation, and one of the great founders of modern clinical medicine, while the father of modern pathology was a personal friend of four popes and always stayed at the papal palace when he visited Rome. For over two centuries the greatest medical school of the world was the papal medical school at Rome. Its most important rival was at Bologna, which after 1512 was in the Papal States. Two other medical schools, those of Ferrara and Perugia, were also in the papal dominions. Until the beginning of the nineteenth century Italy was for the world the Mecca of graduate teaching in science, just as Germany has been for the last half century. History has no record of papal opposition to science, except the Galileo case. The great scientists of the Middle Ages were clergymen, and many of them were canonized as saints. All the talk about papal opposition to science has been pure assumption, founded on religious intolerance, bolstered up by the Galileo case. In spite of frequent assertions, there are no papal prohibitions of anatomy or chemistry, and above all, not of surgery, which developed very wonderfully in the Middle Ages.

We recommend this work to our readers, not in any sense desiring to further misunderstandings, but on the assumption that medical science is universal and should be free from the struggles of intolerance found in other fields of mental activity.

THE INCONVENIENCES OF CERTAIN MINOR ANTISEPTICS.

M. Salva Mercadé concludes his review of the untoward effects of various surgical antiseptics (Archives générales de médecine, July), to several features of which we have already referred, with a consideration of the occasional drawbacks in the use of hydrogen dioxide, boric acid, camphorated naphthol, bismuth subnitrate, potassium permanganate, and zinc chloride. In the case of hydrogen dioxide, or peroxide of hydrogen, as it is commonly called (eau oxygénée), the unpleasant effects hardly ever amount to more than inconveniences, and even these are not often encountered. We think, however, that the author goes too far when he accounts for them as invariably due to impurity of the product; or, rather, we may say that he does not specifically limit the statement (as he appears to have intended) to its agency in producing such irritative effects as erythema and ulceration. Sometimes the gas evolved proves more or less troublesome by reason of its distending action, as when it gives rise to emphysema. Of course the distention has nothing to do with the impurity of the preparation.

The distention resulting from the liberation of oxygen may be accompanied by great pain when the solution is injected into a cavity which is without a free outlet, such as many of the natural cavities of the body, or finds its way into pockets connected with the main cavity of a wound only by contracted communicating channels. This fact has led to the practical abandonment of the use of the solution for vesical irrigation, for example. It has been thought that local bacterial infection might be spread by this distending action in traumatic cases, and the author cites a case recorded by Coudrain (*Thèse de Paris*, 1904) in which secondary abscesses followed the use of the solution after an operation for disease of the vermiform appendix.

Ameng the trivial disadvantages of the employ

ment of hydrogen dioxide is its bleaching action, on account of which cosmetic requirements are inconsistent with its use in cases of wounds of hairy parts, unless the hair is already of the tint produced by the chemical. As to its alleged destructive action on catgut, the author cites Thiriar and Moreau as maintaining that it has no such effect unless it is contaminated with hydrochloric acid. Moreau (*Presse médicale belge*, liii, 1901, p. 99) seems to have attributed to this action the sudden occurrence of secondary hæmorrhage after an amputation of the thigh, though Mercadé does not expressly so state.

Injected into a bloodvessel, hydrogen dioxide, being at once decomposed, gives off bubbles of oxygen, and these, as Paul Bert supposed, may occasion fatal embolism. Although Laborde and Quinquaud are said to maintain that this danger may be avoided by giving the injection slowly, it seems to us that little reliance can be placed on that precaution; at all events, we should not recommend or even countenance the injection of a solution of hydrogen dioxide into the blood.

In the course of his remarks on boric acid, M. Mercadé mentions two fatal cases of poisoning with that agent used as an antiseptic. One was that of a patient whose pleural cavity was washed out with a five per cent. solution. In the other instance a man had been operated on for inguinal adenitis, and the wound stuffed with the powdered drug. On the third day diffuse erythema appeared, accompanied by cyanosis, sweating, vomiting, and coldness of the extremities. The temperature rose to about 102° F., and the patient died delirious. Subpericardial ecchymoses were found, also fatty degeneration of the liver and kidneys.

The toxicity of camphorated naphthol increases with the age of the preparation. It sometimes produces convulsions and pulmonary embolism. Five fatal cases from the use of camphorated naphthol have been collected by Guinard, which he reports.

Bismuth subnitrate, however harmless it may be when taken internally, has sometimes produced grave symptoms of poisoning when used as a dressing, such as a blackish sponginess and painfulness of the gums and violaceous spots scattered over the mucous membrane of the mouth. Constitutional symptoms often appear, consisting of vomiting, diarrhoa, hiccough, fever, and a dark coloration of the urine. Potassium permanganate rarely has an untoward effect unless it is used in excessive strength; it then acts as a caustic. Chloride of zinc, too, seldom gives rise to troublesome consequences unless it is employed in too strong solutions.

Aems Stems.

Changes of Address.—Dr. Seymour Basch, to 14 East Sixtieth Street, New York. Dr. Arthur A. Boyer, to 11 East Forty-eighth Street, New York.

Dr. E. A. Newton, to 1924 Chestnut Street, Philadelphia. New:on's summer address is 3 Victoria Strasse, Bad Nauheim, Germany

Dr. George I. McKelway, to 4813 Baltimore Avenue,

Philadelphia,

"Tag Day" for the Mountainside Hospital, Montclair, N. J., which was held on Saturday, September 20th, realized nearly \$3,000 for the hospital.

The Medical Department of the University of Pennsylvania inaugurated its one hundred and forty-third an-

nual session on Friday, September 25th

Cholera, Plague, and Smallpox in Japan.—During the year 1907 there were reported in Japan, exclusive of Formosa, 3,631 cases of cholera, with 2,525 deaths; 645 cases of plague, with 574 deaths; and 1,034 cases of small-pox, with 437 deaths

The Buffalo Academy of Medicine.- A special meeting of this academy will be held on Tuesday, October 27th, tor a further consideration of the question of incorpora-The committee appointed to arrange for a permanent home for the academy will also report at this meeting

The Medical Department of Vanderbilt University, Nashville, Tenn., opened its 1908-1909 session on September 16th. Chancellor Kirkland presided, and Dr. J. A. Witherspoon delivered the address. About two hundred

and fifty students were present.

Atlanta, Ga., College of Physicians and Surgeons. The opening exercises of the fifty-fourth session of this college were held on September 23d. Addresses were de-livered by Bishop Warren A. Candler, Judge Howard Van Epps, Dr. A. W. Calhoun, and Dr. V. S. Elkin, dean of the college

Malpractitioner Sentenced. - Dr. Charles Bushnell pleaded guilty to a charge of using the mails for the purpose of advertising the performance of criminal abortion and was sentenced to fifteen months' imprisonment in the Eastern Penitentiary, Philadelphia, on Monday, Septem-

ber 21st.

The Medical Department of Columbia University, New York, opened on September 24th, with about two hundred and fifty students present. The entering class numbers eighty-eight, which is thirteen more than lass year. Dr. Samuel W. Lambert, dean of the college, presided, and Dr. M. Allen Starr delivered the address.

The College of Physicians and Surgeons, Boston. opened its twenty-ninth session with one hundred and sixty-two students enrolled. Dr. T. D. Crothers, of Hartford, Conn., gave the opening address, in which he complimented the college on being the first in this country to provide for a regular course of lectures on psychotherapy. Local Epidemics.—Scarlet fever is epidemic in Allen-

There are about forty cases in the city, a place

of about 36,000 population.

There is a small epidemic of diphtheria in a portion of Cecil County, Md.

There are a few cases of smallpox in Cumberland Coun-

Vital Statistics of St. Louis, Mo.—During the month of July, 1908, there were reported to the Health Department 874 deaths from all causes, as against 1,074 for the month of July. 1907. Of the total number of deaths 270 were of children under five years of age. There were 61 still births. One thousand three hundred and sixty-five births were reported during the month, 1.294 white and 71 colored.

The New York Academy of Medicine .- A stated meeting of the academy was held on Thursday evening, October 1st. Dr. Le Grand N. Denslow read a paper on October 1st. Dr. Le Grand N. Denstow read a paper on Locomotor Ataxia, which included a report of thirty cases. Dr. M. Allen Starr and Dr. R. H. Cunningham opened the discussion on this paper. Dr. Joseph Collins and Dr. Charles G. Taylor presented a paper-entitled Changes Which Occur in the Spinal Cord in Certain Cases of Syphilitic Infection, which was illustrated with lantern slides. regular stated meeting of the academy for October 15th will not be held, the next stated nacting occurring on No. vember 5th.

Contagious Diseases in Chicago .- During the week ending September 19, 1908, there were 275 cases of transmissible diseases reported to the Department of Health, as follows: Diphtheria, 83 cases; scarlet fever, 79 cases; measles, 5 cases; whooping cough, 20 cases; typhoid fever, 52 cases; tuberculosis, 23 cases; diseases of minor importance, 1 cases

Southern Minnesota Medical Association.—The next meeting of this association will be held in Winona in August, 1909. At the annual meeting, which was held this year at Owatonna, the following officers were elected: President, Dr. Way, of Claremont; vice president, Dr. H. McGaughey, of Winona; secretary-treasurer,

Adams, of Elgin.

American Dermatological Association.-The annual American Dermatological Association—I he annual meeting of this association was held in Annapolis and Baltimore, Md., on September 24th, 25th, and 26th. Officers for the ensuing year were elected as follows: President, Dr. William Thomas Gilchrist, of Baltimore; vice president, Dr. William Allen Pusey, of Chicago; secretary and treasurer, Dr. Grover William Wende, of Buffalo. The next annual meeting of the association will be held in

Tuberculosis Medals.—The two gold medals which are given every three years by the International Conference on Tuberculosis for work done in advancing the fight against tuberculosis, have been awarded to Mr. Henry Phipps, of New York, and Dr. Frederick Althoff, of Berlin. Four silver medals were awarded to Dr. Bernhardt Frankel, of Berlin, Dr. C. Theodore Williams, of London, Dr. Lewis Landouzy, of Paris, and Dr. Emilio R. Coni,

of Buenos Avres.

The Woman's Medical College of Pennsylvania in-augurated its annual session on Wednesday, September 23d. The following changes were announced in the facul-ty: Dr. Harry C. Deaver to be professor of surgery, vice Dr. William L. Rodman, resigned; Dr. Harriet L. Hartley to be professor of clinical surgery; Dr. Theodore L. Le-Boutillier to be professor of pædiatrics, vice Dr. James H. McKee, resigned; Dr. Martha Tracy to be associate professor of chemistry.

The Massachusetts State Conference of Charities will be held in Fall River, October 20 to 22, 1908. The traveling tuberculosis exhibit of the Boston Association for the Relief and Control of Tuberculosis will be a feature of the conference, and arrangements are also being made with the Dental Hygiene Council of Massachusetts to have their dental and oral hygiene exhibit at the conference. ject of this exhibit is to establish dental hygiene in schools as a part of medical inspection.

The Colorado Medical Association .- At the annual The Colorado Medical Association.—At the annual meeting of this association, which was held recently in Steamboat Springs, the following officers were elected: President, Dr. D. H. Coover, of Denver; second vice president, Dr. D. H. Coover, of Denver; second vice president, Dr. C. H. Graves, of Canon City; fourth vice president, Dr. O. P. Chippey, of Saguache; secretary, Dr. Melville Black, of Denver; treasurer, Dr. George W. Miel, of Denver Denver

Civil Service Examinations.—The New York State Civil Service Commission will hold examinations on October 17, 1908. Among the positions for which the examinaoer 17, 1908. Annual the positions of White the tions will be held are the following: Assistant in clinical psychiatry, Pathological Institute, \$2,000; health officer. Town of Wells, Hamilton County; physician, sixth grade, State hospitals and institutions, \$900 and maintenance. last day for filing applications is October 10th. Full information and application forms can be obtained from Mr. Charles S. Fowler, chief examiner of the commission. Al-

The American Electrotherapeutic Association .the eighteenth annual meeting of this association, which was held in New York on September 22d, 23d, and 24th, was held in New York on September 22d, 23d, and 24th, the following officers were elected: President, Dr. Edward C. Titus, of New York; vice presidents, Dr. William D. McFec, of Haverhill, Mass., and Dr. Thomas D. Crothers, of Hartford, Conn.: secretary, Dr. J. W. Travell, of New York; treasurer, Dr. Richard Joseph Nunn, of Savannah, Ga.: executive council, Dr. Morris W. Brinkmann, of New York, Dr. Charles Rae Dickson, of Toronto, Canada, Dr. W. Benham Snow, of New York, Dr. Fred H. Morse, of Boston, Dr. Herbert Pitcher, of Haverhill, Mass., and Dr. Francis B. Bishop, of Washington, D. C. Personal.—Dr. F. J. Sheperd has been elected dean of the Medical Faculty of McGill University, Montreal, to succeed Dr. Thomas G. Roddick, who resigned recently. Dr. Harriet Hartley, of Philadelphia, has been advanced

from lecturer on surgery to clinical professor of surgery at the Woman's Medical College of Pennsylvania. Dr. Hartley is the first woman in the world to hold such an

Dr. Erminie H. Smallwood, of Chillicothe, Ohio, is reg-tered at the Philadelphia Polyclinic and College for istered at the

Graduates in Medicine.

The Wesley M. Carpenter Lecture will be delivered at the New York Academy of Medicine on Thursday, Ocat the New York Academy of Medicine on Thursday, October 8th, at 8:30 p. m., by Dr. Andres Martinez-Vargas, of Barcelona, Snain. The subject of the lecture is Tuberculosis of the Heart, Blood Vessels, and Lymphatics. It will be delivered in the Spanish language, but a pamphlet translation in English will be presented to every person in the audience, so that the lecturer can be clearly and easily followed. After the lecture a reception will be given by the president and fellows of the academy to the visiting members and delegates of the International Congress on Tuberculosis.

American Association of Obstetricians and Gynæcologists .- At the twenty-first annual meeting of this association, which was held in Baltimore, Md., on September 22d, 23d, and 24th, the following officers were elected elected; treasurer, Dr. X. O. Werder, of Pittsburgh, Pa., reelected. The next annual meeting will be held in Fort

Wayne, Ind., in September, 1909.

The Washington State Medical Association closed its nineteenth annual meeting of three days at the Keylor Grand Theatre, in Walla Walla, in the afternoon of Sep-Grand Theatre, in Walla Walla, in the afternoon of September 11th by deciding to join in a meeting with the associations of Oregon, Idaho, and British Columbia at Seattle in June, 1909. These officers were elected for the year: President, Dr. C. A. Smith, of Seattle; vice presidents, Dr. Y. C. Blalock, of Walla Walla, and Dr. W. D. Kilpatrick, of Bellingham; secretary, Dr. C. H. Thompson, of Seattle; treasurer, Dr. L. L. Love, of Tacoma; delegates to the American Medical Association, Dr. J. R. Wenn, of Tacoma; alternate, Dr. H. H. McCarthy, of Spokane.

Scientific Society Meetings in Philadelphia for the Week Ending October 10, 1908:

Monday, October 5th.—Philadelphia Academy of Surgery;

MONDAY, October 5th.—Philadelphia Academy of Surgery: Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society.

TUESDAY, October 6th.—Academy of Natural Sciences. WEDNESDAY, October 7th.—Academy of Natural Sciences. WEDNESDAY, October 7th.—College of Physicians: Association of Clinical Assistants of Wills Hospital.

THURSDAY, October 8th.—Pathological Society; Section Meeting, Franklin Institute.

FRIDAY, October 9th.—West Branch, Philadelphia County

Medical Society,

American Urological Association.-The New York American Urological Association.—The New York Academy of Medicine on Wednesday, September 23d. Dr. M. J. Echeverria reported a case of vesical calculi. Dr. Victor C. Pedersen demonstrated an irrigating sound for the dilatation of close strictures. Dr. Winfield Ayres reported a case of renal calculus. The paper of the evening was read by Dr. Follen Cabot, and was entitled Notes on Some Recent Interesting Cases of Prostatetomy. Recent Interesting Cases of Prostatectomy. Among those who took part in the discussion were Dr. Ramon Guiteras, Dr. J. Bentley Squier, and Dr. Martin W. Ware. The officers of the society are: Dr. James Pedersen, president; Dr. A. Ernest Gallant, vice-president; Dr. G. Morgan Muren, of Brooklyn, secretary; Dr. Thomas J. Carney.

The Eighth District Branch of the Medical Society of the State of New York, which comprises the medical societies of the counties of Eric, Niagara, Orleans, Genesee. Wyoming, Allegany, Cattaraugus, and Chautauqua, held its third annual meeting in Batavia, N. Y., on September 2nd The presidental address was delivered by Dr. E. E. Snow, of Batavia, and papers were presented by Tr. J. S. Wright, of Perry and Dr. T. H. McKee, Dr. De Lancey, of Rochester, and Dr. H. C. Booth, of Buffalo The following officers were elected for the ensuing year:

President, Dr. E. E. Snow, of Batavia; first vice president, Dr. Edward Munson, of Medina; second vice president, Dr. T. H. McKee, of Buffalo; secretary, Dr. Lee M. Francis, of Buffalo; treasurer, Dr. C. A. Wall, of Buffalo. The meeting next year will be held in Buffalo.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statement of new cases and deaths reported for the two weeks ending September 26, 1908:

| | Sep | t. 19 - | -Sep | t. 25 |
|---------------------------|--------|---------|--------|---------|
| | Cases, | Deaths. | Cases. | Deaths. |
| Tuberculosis rulmonalis | 53 I | 140 | 530 | 172 |
| Diphtheria | 206 | 28 | ~55 | 2.4 |
| Measles | 103 | 5 | 54 | |
| Scarlet fever | 112 | - 6 | 143 | |
| Smallpox | | | | 1 |
| Varicella | 9 | | 17 | |
| Typhead tever | 108 | 18 | 127 | 29 |
| Whooping cough | 23 | 5 | 25 | 6 |
| Cerebrost inal maningitis | 8 | 6 | 8 | 8 |
| | | | | |
| Totals | 1,100 | 208 | 1,159 | 247 |

The Health of Philadelphia.-During the week ending September 19, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Malarial fever, 2 cases, 0 deaths; typhoid fever, 79 cases, 13 deaths; scarlet fever, 28 cases, 2 deaths; chickenpox, 9 cases, 0 deaths; diphtheria, 54 cases, 4 deaths; measles, 13 cases, o deaths; whooping cough, 17 cases, 2 deaths; tuberculosis of the lungs, 77 cases, 41 deaths; pneumonia, 20 cases, 10 deaths; erysipolas, 2 cases, 1 death; pneumonia, 20 cases, 10 deaths; erysipolas, 2 cases, 1 death; puerperal fever, 6 cases, 4 deaths; cancer, 10 cases, 23 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 10 deaths: dysentery, I death; diarrhœa and enteritis, under two years of age, 41 deaths. The total deaths numbered 425, in an estimated population of 1,532,738, corresponding to an annual death rate of 14.40 in 1,000 of population. The total infant mortality was 191; 103 under one year of age, and 18 between one and two years of age. There were 49 still births; 22 males and 27 females.

The Mortality of Chicago.—During the week ending September 19, 1908 there were reported to the Department of Health of the City of Chicago 525 deaths from all causes, as compared with 558 for the previous week, and 618 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.64, as against a death rate of 15.29 for the corresponding week last year. Among children under five years of age there were 169 deaths, this number being 70 less than the number reported for the previous week, and 69 less than the number reported ed for the corresponding week in 1907. The principal causes of death were: Apoplexy, 13 deaths; Bright's disease, 31 deaths; bronchitis, 5 deaths; consumption, 77 deaths; cancer, 20 deaths; diphtheria, 6 deaths; heart diseases, 44 deaths; intestinal diseases, acute, 108 deaths: measles, 2 deaths; nervous diseases, 19 deaths; pneumonia. 28 deaths; scarlet fever, 6 deaths; suicide, 10 deaths; typhoid fever, 9 deaths; violence (other than suicide), 33 deaths; whooping cough all other causes, 144 deaths. Vital Statistics of New York.—During the week end-

ing September 19th, the total number of deaths reported to the Department of Health of the City of New York was 1,311. which, in an estimated population of 4.014,304. corresponds to an annual death rate of 15.46 in 1,000 of population. In the corresponding period in 1907 the annual death rate in 1,000 of nonulation was 16.73. In Manhattan the total deaths for the week numbered 667, corresponding to an annual death rate of 15.18 in 1,000 of population. In the Bronx there were 112 deaths, and a death rate of 17.84. In Brooklyn, there were 420 deaths, and a death rate of 14.68. In Queens, there were 81 deaths, and a death rate of 18.17; and in Richmond, there were 31 deaths, and a death rate of 21.09. Of the total number of deaths 425 were from diarrhoal diseases, 140 from pulmonary tuberculosis, 113 from pneumonia, from heart diseases, and 57 from contagious diseases. There were 480 deaths of children under five years of age, of which 208 were due to diarrhœal diseases. There were 84 violent deaths; 5 from homicide, 17 from suicide, and 62 from accidents. There were 117 still births. Five hundred dred and forty marriages and 2,192 births were reported during the week.

Cholera Abating.-Reports from St. Petersburg indicate that the cholera epidemic is decreasing in numbers and severity. The report issued for the municipal hospitals of the capital for the twenty-four hours ending noon, September 29th, gives 222 cases, 99 deaths, and 137 recoveries. Comparatively few new cases have been reported, and re-lief for the overcrowded hospitals of St. Petersburg appears to be in sight. According to press despatches, Surgeon General Rixey, of the United States Navy, makes light of the danger to the fleet from cholera in Manila. He is reported to have deprecated the worry caused to friends of those aboard the fleet by the circulation of rumors in the newspaper press regarding probable danger to the fleet from cholera at Manila. He is reported as saying that the hospital service is perfectly able to cope with cholera if it gets aboard ship. The extent of shore leave for sailors and officers, when the fleet arrives at Manila, will depend upon what the surgeons report to the admiral in command.

Meetings of Sections of the New York Academy of Medicine.—A meeting of the Section in Surgery was held on Friday evening, October 2d. The programme included the reports of a series of cases of operations under local anæsthesia by Dr. Henry H. M. Lyle and Dr. Winfield Scott Schley, and the following papers: The Com-bined Operation for Carcinoma of the Rectum, by Dr. Joseph A. Blake; Local Anæsthesia in Major Surgery with Especial Reference to Abdominal Work, by Dr. Winfield Scott Schley.

A meeting of the Section in Dermatology will be held on Tuesday, October 6th, at 8:15 p. m. The programme will consist of the presentation of patients, the reports of cases, and a general discussion.

The Section in Otology will meet on Friday evening, October 9th, at 8:15 o'clock. Dr. S. J. Kopetzky will report two cases of atypical sinus thrombosis, and the paper of the evening will be read by Dr. Robert Milligan on the Application of Dr. Arneth's Blood Charts in the Diagnosis of Obscure Mastoid. A general discussion will follow.

Society Meetings for the Coming Week:

MONDAY, October 5th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library As-sociation (annual): Niagara Falls, N. Y., Academy of Medicine: Practitioners Cluo, Newark, N. J.; Hart-

Medicine; Practitioners' Cluo, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, October 6th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy, N. Y., and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association. Medical Association.

Medical Association.

WENDESDAY, October 7th.—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

THURSDAY, October 8th.—New York Academy of Medicine (Section in Pædiatrics): Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, October 9th.—New York Academy of Medicine (Section in Otology): New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York: Saratoga Springs. N. Y., Medical Society.

SATURDAY, October 7th.—Therapeutic Club, New York.

The International Congress on Tuberculosis.—The medical sessions of the sixth triennial congress on tuber-culosis were opened at the New National Museum in Washington on September 28th, Secretary of the Treasurer Cortelyou acting as the personal representative of the President of the United States. The diplomatic corps, the officers of the congress, and the section presidents proceeded in a body to the stage in the auditorium of the museum. meeting was called to order by Dr. Lawrence F. Flick, who announced the election of the following honorary presidents: Dr. E. L. Trudeau, of Saranac Lake; Dr. Robert Koch, of Berlin: Dr. Louis Landouzy, of France, and Dr. C. Theodore Williams, of London. Mr. Cortelyou made a formal address of welcome on behalf of President Rosewells and was followed by the Decident of the dent Roosevelt, and was followed by the President of the Board of Commissioners of the District of Columbia, Mr. H. B. F. Macfarland. Dr. Robert Koch, of Berlin, responded to these addresses on behalf of the German delegates, similar responses being made by the following delegates: Dr. Fermin Rodriguez, Jr., of Argentina; Baron Hengelmüller von Hengevar, of Austria; Prof. Denys, of Belgium; Dr. F. Montizambert, of Canada; Dr. L. Sierra, of Chile; Dr. Juan J. Ulloa, of Costa Rica; Dr. Joaquin L. Jacobsen, of Cuba; Dr. Bernard Bang, of Denmark; Dr. C. W. Richardson, of Ecuador; Prof. Louis Landouzy, of France; Dr. Robert Koch, of Germany; Dr. Arthur Newsholme, of Great Britain; Dr. Lambros Coromilas, of Greece; Dr. Bongoschea, of Guatemala; Dr. Josselin de Long, of Holland; Dr. Antonio Stella, of Italy; Dr. Eduardo Liceaga, of Mexico; Dr. F. Harbitz, of Norway; Dr. Echeveria, of Panama; Dr. Ladislaw Detre, of Hungary; Dr. Sylvio Gurgel de Amaral, of Portugal; Dr. S. Trimescu. of Rumania; Dr. A. Wladimiroff, of Russia; Dr. Camilo Calleja, of Spain; the Hon. Conrad Cedrecanz, of Sweden; Dr. Frank Egger, of Switzerland, and Dr. Luis Melean Lafinur, of Uruguay.

This closed the general session, the remainder of the

This closed the general session, the remainder of the week, up to Saturday morning, being devoted to sectional meetings, supplemented by special lectures from distinguished delegates. A report of the proceedings of the sections will be found on page 667 of this number.

The International Conference on Tuberculosis is an

organization made up of representatives of national asso ciations for the study of tuberculosis from all parts of the The seventh session of this conference, which is world. The seventh session of this conference, which held yearly, was held in Philadelphia on Thursday, Friday, and Saturday, September 24th, 25th, and 26th, just preceding the session of the International Congress on Tuberculosis, held in Washington during the three weeks ending October 10th. The sessions of the conference were held in Horticultural Hall, Philadelphia, where the following subjects were discussed: Provision for Advanced Cases of Tuberculosis, by Dr. Biggs, of New York, and Dr. von Leube, of Würzburg. Prophylactic Measures in Tuberculosis, by Dr. Flick, of Philadelphia, and Dr. Raw, of Liverpool. Hygienic Requirements for Sanatoria, by Dr. Pannitz, of Barlin, and Dr. Lawrson Brown of Sanatoria. pool. Hygienic Requirements for Sanatoria, by Dr. Fannitz, of Berlin, and Dr. Lawrason Brown, of Saranac Lake, N. Y. Tuberculosis and Legal Rights, by Dr. Dixon, of Pennsylvania. Tuberculosis and Traffic, by Dr. Bonney, of Denver, and Dr. Baradat, of Cannes. Antituberculosis Education, by Dr. Farrand, of New York, Dr. Heron, of London, Dr. Calmette, of Lille, and Dr. Kirchner, of Berlin, and Crusade against Tubertulosis. culosis, by Dr. Pannwitz, of Berlin, and Miss Boardman, of Washington. Registration of Tuberculosis, by Dr. Walsh, of Philadelphia. The Danger of Tuberculosis Infection from Milk, and How to Prevent it, by Dr. Heymanns, of Ghent.

In addition, Professor Gotthold Pannwitz, of Berlin, secretary general of the International Association for the Study and Prevention of Tuberculosis, delivered a lecture on the evening of Wednesday, September 23d, under the auspices of the Hospital Association of Philadelphia, entitled Social Life and Tuberculosis. Dr. G. Theodore Williams, of London, delivered an address on The Evolution of the Treatment of Pulmonary Tuberculosis, on the evening of Thursday, September 24th, under the auspices of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis. Professor A. Calmette, of Lille, delivered an address on Saturday evening, September 26th, on The New Methods of Early Diagnosis of Tuberculosis, under the auspices of the Pennsylvania Society for the Study of Tuberculosis. Professor Calmette is the Director of the Institut Pasteur, of Lille. The secretary general of the International Association for the is the Director of the Institut Pasteur, of Lille. social features of the conference were complete. Henry Phipps Institute gave a reception to the foreign delegates on Thursday evening at the Bellevue-Stratford Hotel, after Dr. Williams's lecture. The Board of Trus-Hotel, after Dr. Williams's lecture. The Board of Trustees and the Faculty of the Jefferson Medical College gave a luncheon on Friday at 12:30 p. m., and the City of Philadelphia gave a banquet to the foreign delegates at the Bellevue-Stratford Hotel on Friday evening. On Saturday the Medico-Chirurgical College and Hospital gave a funcheon, and Mr. P. A. B. Widener gave a reception at the Widener Memorial Home at 5 o'clock, and supper was created at 6 500. At the Municipal Barquet on Friday. served at 6:30. At the Municipal Banquet, on served at 0:30. At the Municipal Barquet, on Friday evening, toasts were responded to by Dr. Abraham Jacobi, of New York. Professor von Leube, of Germany, Professor Calmette, of France, Dr. German Sims Woodhead, of England, and Professor Robert Koch, of Germany. Mayor Reyburn, Dr. L. F. Flick, Dr. Leonard Pearson, and Dr. Edgar Fahs Smith, of Philadelphia, also spoke.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL September 24, 1908.

1. The Home Treatment of Tuberculosis.

By Arthur K. Stone.
2. The Necessity of Providing Employment for Tuberculosis Patients,

By Alfred Worcester.

 Some Points in the Applied Anatomy of the Tonsil, By HARRY A. BARNES.

4. Results in Adenoid and Tonsil Operations. A Study of a Series of Cases, By J. Payson Clark.

3. Some Points in the Applied Anatomy of the Tonsil.—Barnes reminds us that the faucial tonsil is a collection of lymphoid tissue lying on the superior constrictor fascia and between the faucial pillars. It differs from other collections of the same tissue found in various parts of the alimentary tract throughout its extent only in its size, its compactness, and in the arrangement of its lymph nodules about its crypts. There is no reason to believe that the function of the tonsil differs in any way from that of other similar lymphoid tissues. Therefore it may be removed in toto without appreciable loss to the economy. The author considers at present the crypts and the capsule. The calibre of the crypts varies at different depths. In a strictly normal tonsil the epithelial surfaces should lie in apposition throughout the whole course of the crypt. In the great majority of the tonsils that are removed, either on account of their size or for the relief of constitutional disturbances, marked pocketing of the crypts is found. These pockets may occur at any point; they are quite as apt to be deep as superficial. The junction of a branch crypt with the main trunk seems especially suited for their development. Any operation done on the tonsil for pathological conditions in crypts, and consequent toxic absorption from them, must have for its object their complete obliteration. This can be accomplished only by the complete removal of the tonsil. Operations in which the epithelial face only of the tonsil is cut away, or at best in which a very considerable part of the deeper portion is left, are likely to prove disappointing; the crypts remain, less deep it is true, perhaps in many cases more capable of drainage, but always possible sources of infection and toxic absorption. The capsule is thin, but tough. It is seldom over 0.5 mm. in thickness, except at points near the pillars. It is quite easily separated from the surrounding tissues at its upper half; at its inferior half it is much more adherent, since it is at this point that the larger vessels enter the tonsil. The structure of the capsule, its toughness, and the ease with which it may be separated from the underlying tissues, make the operation of dissection of the tonsil "in capsule" a very practical one. The dissection may be accomplished largely with blunt instruments after the initial incision through the mucous membrane, but at its lower half the capsule is usually so adherent as to require a cutting edge or a snare to complete the separation. The operation is incomparably neater and more thorough than any other, and is especially to be recommended in all cases in which the tonsil is superted to be the source of a systemic infection. The que tion of hæmorrlage after this operation is

important. A just estimate of this danger, however, cannot be given until the operation is more generally done. Anatomically, bleeding would seem to be more likely to occur, for the reason that the blood-vessels are severed in a tough fibrous tissue which allows them little chance for contraction or retraction. For this reason the author prefers the modified operation in which the more adherent part of the tonsil at the lower half of the capsule, at which point the vessels enter, is separated with a snare.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. September 26, 1908.

- 1. Infant Mortality, Chairman's Address, Section on Diseases of Children, By EDWIN E. GRAHAM.
- 2. Developmental Deformities of the Crystalline Lens,
 By E. TREACHER COLLINS.
- 3. Spontaneous Arterial Degeneration in the Rabbit,
 By RICHARD M. PEARCE.
- 4. Three Cases of Cerebellar Tumor. Operation in Two Cases. Recovery in One, By Wharton Sinkler. 5. The Meatomastoid Operation in Chronic Mastoiditis.
- 5. The Meatomastoid Operation in Chronic Mastoiditis.
 The Technique, Rationale, and Indications,
 By WILLIAM LINCOLN BALLENGER.
- Restoration of the Conjunctival Cul-de-Sac for the Insertion of an Artificial Eye,
 By M. WIENER.
- 2. Developmental Deformities of the Crystalline Lens.-Collins, from his clinical and anatomical studies, makes the following suggestions concerning the treatment of congenital cataract: 1. To wait until a child is ten months old before operating. At an earlier stage the cornea is so small and the anterior chamber so shallow that the necessary instrumentation cannot be so satisfactorily carried out as in the more fully developed eye. Moreover, the amount of aqueous humor is so small that it does not suffice for the solution of the liberated lens substance. 2. In some cases in which the pupil is small and does not dilate well with atropine it is best to commence with an iridectomy. 3. In nearly all cases it is well to begin with a needling, for valuable information can be obtained by its means as to the thickness of the capsule and consistency of the lens should it fail to liberate much lens matter to the action of the aqueous. 4. If the cataract is a dense, white, anterior polar one, set in a ring of clear, or partially clear, lens substance, and apparently flattened from before backward (the so called disc shaped cataract), then an attempt should be made to separate the central white opacity with a needle and let it fall into the anterior chamber. Two needles are sometimes required to effect this. 5. If, on pricking the capsule, milky white fluid escapes into the anterior chamber (congenital Morgagnian cataract) it is well at once to evacuate this fluid, for fear of increased tension ensuing. 6. In some cases of congenital cataract the whole lens and capsule can be removed in a most satisfactory way by grasping it with forceps. Very often, however, such a procedure is followed by escape of vitreous. It is difficult to distinguish which cataracts can be safely dealt with in this manner. They generally seem to be complete cataracts with a tough capsule and lens matter of a gelatinous consistency. 7. If, after a needling and some absorption of liberated lens matter, a dense, tough, white, fibrous looking membrane remains, there is probably some atypical development of the anterior pert of the vitreous. An attempt had then best be

made forcibly to displace the membrane downward and backward out of the axis of vision.

4. Three Cases of Cerebellar Tumor. Operation in Two Cases.-Sinkler reports three such cases. Two patients were operated upon-one recovered, the other died; the first one was operated upon early, the other late. To save vision, an operation must be done at an early date. The third patient died suddenly, while in a fairly good condition,

before an operation was attempted. 5. Meatomastoid Operation in Chronic Mastoiditis.—Ballenger bases the rationale of the meatomastoid operation on the following principles: (a) The promotion of healthy granulation tissue and epidermatization of the walls of the mastoid wound. This is accomplished by making the surface of the bony wound smooth, and the proper adaptation of the plastic meatal skin flaps to it. (b) The establishment of ample drainage. This is accomplished by diverting the secretions from the mastoid antrum and cells through the window in the posterior wall of the meatus into the external auditory meatus and by passing blasts of air via the aditus ad antrum through the middle ear. If these conditions are established in properly selected cases of chronic mastoiditis, savs the author, the results will be as good as if the radical operation had been performed, and in one respect they will be much better, namely, the hearing will be much improved, often approaching normal. About the indications for operation, he remarks that it is too early to accurately forecast the same, as only an extended experience will afford the data for such a forecast. There are, however, certain broad principles on which the indications may be tentatively based. Based on the therapeutical indications, chronic mastoiditis may be divided into three classes, namely, I, those amenable to nonoperative treatment, or to surgical treatment through the perforate drumhead, to the vault of the pharvnx, and to the nose; 2, those amenable to the meatomastoid operation; 3, those only amenable to the radical mastoid operation. The contraindications he gives thus: (a) All simple cases curable by nonsurgical and minor surgical treatment through the external meatus. (b) All cases curable by the proper surgical attention to the epipharynx and the posterior ethmoidal and sphenoidal sinuses. (c) Cholesteatoma of the tympanic cavity. The removal of the cholesteatoma from the tympanic cavity would dislocate the ossicles, and if this is done the radical mastoid operation should be performed as the chief object, the meatomastoid operation, is defeated by the dislocation of the ossicles, namely, the preservation and improvement of the hearing. (d) Epidural abscess with its atrium of infection through the tegmen tympani. It is obvious that in order adequately to drain an epidural abscess in this region the tympanic cavity should be exposed to give access to the atrium of infection, which should be enlarged. (e) Brain abscess with the atrium of infection through the tegmen tympani is a contraindication to the meatomastoid operation for obvious reasons. (f) Infection, suppuration, and necrosis of the labyrinth is a contraindication to the meatomastoid operation, as the affected portions of the labyrinth should be exposed to inspection and if necessary to surgical treatment.

MEDICAL RECORD

September 26, 1908

Tuberculosis of the Ear, By W. SOHIER BRYANT.
The Chemical Rays Promoters of Life and Energy:
Their Mode of Action, and Their Therapeutic Uses. Tuberculosis of the Ear, By MARGARET

3. Cuguillère's Serum in the Treatment of Tuberculosis,

- Malnutritis and Society,
 Waginoureterostomy after Nephrectomy for Pyonephrosis Due to a "Sigmate" Constriction of the Ure-By A. Ernest Gallant.
- 1. Tuberculosis of the Ear.—Bryant remarks that tuberculous invasion of the ear is primary or secondary. Primary invasion is direct through the Eustachian tube or through the mastoid lymphatics. Tympanic tuberculosis is a very early sign of a more general infection. It also gives an accurate indication of the course of a concomitant pulmonary tuberculosis. Tuberculous mastoiditis has similar characteristics to tuberculous inflammation of other bones. Prognosis for the ear tuberculosis is good with proper hygiene and early treatment, and early through operative treatment in cases of bone involvement. Pyoctanin dry treatment is the most efficacious for tympanic tuberculosis. The evil effects of a tympanic tuberculosis may cause pulmonary tuberculosis to take a lethal course. The gross anatomy and histology of the tuberculous process in the ear are the same as in other parts of the body made up of mucous membrane, osseous tissue, and lymphatic glands. The two peculiarities which the ear has are, first, that it is a multiple sense organ, and, secondly, that in it the three tissues mentioned are very intimately associated. The bone is lined with a mucoperiosteum and the dura mater forms the inner periosteum. The cold abscess is the rule in ear tuberculosis. The softening and erosion of the mucous surfaces or periosteum and the disintegration of bone and the suppuration progress with little pain and red-Though the ness or without much temperature. presence of tuberculous bacilli can usually be demonstrated in the pus and tissues, sometimes they are most difficult to detect. It is exceptional to find them in the thin secretion of the middle ear.
- 2. The Chemical Rays Promoters of Life and Energy.—Cleaves says that the chemical frequencies of light are the promoters of life and energy. Thermal are never used to the exclusion of chemical frequencies in light therapy. Chemical frequencies are directive or destructive according as they are used. Especially is this true of the irregular disorderly impulse of the x ray as compared with the rhythmic energy of the visible spectrum. The x ray and radium radiations are of great value in many skin conditions, even superficial epitheliomata. in some instances mitigating the symptoms and staying the progress of deep seated malignant processes as well. They are, however, on the other hand, capable, of exciting malignancy and inhibiting physiological function. Bactericidal energy has been located by experiment in the middle third of the ultraviolet region. Skin reaction is established by ultra-violet energy. The best results are secured in deep seated, well organized skin lesions by a complex of the penetrant blue violet and ultraviolet. profound sudation is desired over and above penetrating effects, a source of light affording thermal

with a minimum of chemical energy is indicated. When deep seated effects are desired, sources of light rich in blue, indigo, and violet are indicated. The spectra of the different sources of energy vary in degree, not kind; hence the interlocking of effect secured and result established from the various light sources. When the office equipment affords but one light mechanism preference is yielded the electric arc as providing the maxima of energy required in initiating and establishing necessary physiological processes whether the departure from the normal is characterized by a skin expression or not. More or less profound hyperæmia is established as a result of the use of light, depending upon its length of application and the degree of penetrating power. Upon this depends the rationale of its action. The physiological action of the chemical rays is fundamental to nutrition, and they are an invaluable therapeutical adjunct in the host of chronic conditions characterized by loss of chemical control; they lend themselves to conditions of malnutrition or perversions of nutrition, to both simple and secondary anæmias, controlling hæmorrhagic conditions associated with the latter, as uterine and rectal, for example. They are almost a specific in the annulment of pain, relieving for a time even that from pressure of malignant growths, quieting and steadying nerve action in simple nervousness, storing up energy for the neurasthene, establishing more or less hyperæmia in organic cord conditions, and to that extent holding and preventing extension of the disease, contributing alike to the relief of a simple depression or excitability and to a maniac depressive insanity. They are likewise effectual in absorbing effusions from serous cavities and subcutaneous structures, whether secondary to malignant processes, an inflammation, a leaky heart, or a hydrocephalic effusion associated with rachitis. They also prevent and cut short the progress of infective processes, and cure or improve the many skin expressions of disturbed metabolism. Equally, they may arrest and control respiratory disturbances from a simple catarrhal cold to a bronchial asthma or a pulmonary tuberculosis.

3. Cuguillère's Serum in the Treatment of Tuberculosis.—Caravia gives a favorable account of the results of Cuguillère's serum. He remarks that Cuguillère's serum attacks the disease itself and its direct cause, Koch's bacillus, which it destroys. It helps recovery by promoting the fibrous transformation of the tubercle in whatever organ or organs it exists. It needs no additional drugs to suppress and prevent hæmoptysis, to reduce temperature, to stop diarrhœa and night sweats, to arouse the appetite, to strengthen the heart's action, to increase the weight, to stop cough, expectoration, and pain, to facilitate the resorption of pleural, peritoneal, or articular effusions. Many persons with pulmonary tuberculosis have been cured and are being cured with other drugs and sun and air, and some have been cured without the help of any treatment, but with Cuguillère's serum the recovery is almost mathematically certain, provided the organism has sufficient vitality and recuperative powers and has not fallen into decay. The difference between Professor Detweiller's fourteen per cent. radically cured cases by sanatorium treatment, and Dr. Escover's 53.8 per cent. radically cured by Cuguillère's serum, is eloquent in favor of the serum, especially when we take into consideration the absence in Escover's patients of all the comforts afforded to sanatorium patients. But the unanimous testimony of all physicians and surgeons who have employed the serum on new or far advanced cases of surgical tuberculosis that they had 100 per cent. recoveries, places on Cuguillère's serum the highest therapeutic value, not possessed by any single remedial agent, not even excepting diphtheria antitoxine.

BRITISH MEDICAL JOURNAL

September 12, 1908.

The Relation of Physiology to Physics and Chemistry, By J. S. HALDANE, By G. RANKIN,

Chorea,
Three Cases of Paraplegia due to Acute Anterior Poliomyelitis, Toxic Polyneuritis, and Traumatic Myelitis,
Respectively,
On Bulbar Paralysis followed by Progressive Muscular
Atrophy, Treated by a New Method of Ionic Medication (Static Ionization),

By J. F. LITTLE and T. S. BOKENHAM. (Seventy-sixth Annual Meeting of the British Medical Association.) Section in Electricity

The Value of Teleradiography in Diagnosis,

By E. R. MORTON. Discussion on the Diagnosis of Pulmonary Tuberculosis by Means of the Röntgen Rays,

Introduced by C. L. LEONARD.

Discussion on Interrupted Currents in Medical Practice,
Introduced by H. L. JONES. Discussion on the Use of Bismuth in the Diagnosis of

Conditions of the Œsophagus and Stomach, Introduced by C. T. Some Fallacies in the X Ray Diagnosis of Renal and

By G. H. ORTON. By D. F. D. TURNER, Ureteral Calculi, 10. The Hæmorenal Index, 11. The Therapeutic Action of Radium, By W. D. BUTCHER.

12. Diagnosis and Electrical Treatment of Nerve Injuries of the Upper Extremity, By W. HARRIS.

13. The Localisation of Foreign Bodies by a New Method.

By W. I. Bruce.

14. Further Notes on X Ray Dermatitis and Its Prevention,

By J. F. HALL-EDWARDS. Section in Ophthalmology.

 15. Presidential Address,
 16. Discussion on the Relation of Disease of the Accessory Nasal Sinuses to Diseases of the Eye,

Introduced by A. L. TURNER. 17. Glaucoma as a Consequence of Leucoma Adherens, By E. Fuchs. By W. B. I. Pollock.

18. On Monocular Diplopia. On Monocular Diplopia.
 Discussion on Serum Therapy in Relation to Diseases of the Eye, Introduced by Prof. Axenfeld.
 Filtering Cicatrices by Two Methods, By H. Herbert.
 Discussion on Color Vision and Its Anomalies,
 By F. W. Edridge-Green.

 Glycerin as an Adjuvant to Silver Nitrate, P. Handels.

By B. HARMAN 23. Seasonal Prevalence of Acute Glaucoma in India, By F. P. MAYNARD

24. Anatomical Factors in the Pathogenesis of Glaucoma, By T. HENDERSON

2. Chorea.—Rankin tells us that in true chorea the muscular movements are involuntary, purposeless, and liable to intensification under the influence of mental perturbation or emotional excitement. They cease during sleep. The peculiar and intimate association which exists between chorea, cardiac disease, and rheumatic fever, is well recognized, but its nature has not been ascertained. Chorea rarely occurs under five years of age; about fifty per cent, of all cases are met with between five

and ten years. It attacks girls three times more frequently than boys, and this percentage increases after the second decade. It is most prevalent during cold and damp weather. Certain families are specially predisposed. Recurrences are prone to occur. The proximate cause is probably a microorganism similar to that of rheumatism, the toxines of which are responsible for the nervous phenomena. But the direct excitant of an attack is often some form of emotional disturbance. The onset is usually gradual. Restlessness and clumsiness of movement are followed by erratic contractions of single muscles or groups of muscles. The disorderly character of the muscular contractions is aptly described as a folie musculaire. The parts selected by chorea are those which habitually combine in purposeful and emotional movements. Articulation is more or less impaired, and may be so jerky and explosive as to make the speech unintelligible. Rigidities do not occur, but there is invariably some loss of muscular power. There is a mental element attaching to all cases of chorea, and in extreme cases occurring in adults this intellectual impairment may gravitate into actual mania, and produce that rare and frequently fatal variety of the disease known as chorea insani-There are no marked sensory disturbances in chorea, but aching pains in the back may be complained of. The reflexes are usually normal. Endocarditis and pericarditis are in evidence in the majority of the cases. Almost invariably the action of the heart is abnormally rapid. The disease usually runs a chronic course and lasts, on an average, for from eight to twelve weeks, but remissions and exacerbations may prolong it over six months. The most frequent complications of the disease are those which occur in association with rheumatism. Erythema nodosum and peliasis rheumatica are the most common skin complications. A temporary form of imbecility is not uncommon in several cases. Pulmonary tuberculosis supervenes upon chorea in a fair number of cases. No constant lesions are found in the nervous system which can be regarded as the anatomical basis of the disease. The prognosis in children is favorable as regards recovery from the choreic attack, but there is always the risk of permanent cardiac mischief. In the treatment of the disease, rest, both mental and physical, is of special importance, and is indicated in every case, no matter how mild. The child ought to be put to bed and kept there until all movements cease, so as to minimize the risk of cardiac complications and at the same time expedite the natural tendency to recovery. There is no specific for the disease, but arsenic gives the best results of any drug. Given with butter it is less toxic than when given in solution. In severe cases something must be done to control the muscular movements. Here chloral hydrate acts best, but in desperate cases it may be necessary to give morphine. When the movements are not too violent, warm baths or hot packs may be used with benefit.

6. Diagnosis of Pulmonary Tuberculosis by X Rays.-Leonard states that recent improvements in apparatus and technique have so added to the value of the Röntgen rays in the diagnosis of pulmonary tuberculosis that with instantaneous exposures it is possible to detect bronchial glands and areas of infiltration about the roots of the lungs, where neither percussion or auscultation can reach them, and before the bacteriological test has determined their ætiology and only the symptom complex suggests tuberculous disease. In addition, in the increased detail it secures by the elimination of motion due to the heart's pulsation and involuntary movements during suspended respiration, it furnishes a more precise registration of the affected areas, and shows cavities and areas of softening which lie too deep to be detected by ordinary clinical means.

September 12, 1908.
Anomalous Pyrexia in Children,

By E. CANTLEY. The Distinctive Diagnosis of Fevers,

Some Observations on the Cause and Prevention of Dental Caries,

By J. W. SUTHERLAND.
By J. S. WALLACE. On Chronic Morphinism and its Treatment,

By A. GAMGEE.
Two Cases of Gallstone Ileus; Operation; Recovery,
By G. P. Newbolt.
The Action of Two Sera upon a Carcinoma Occurring in Mice,
Rv C. F. W.

in Mice,
By C. E. WALKER.
Fatal Toxæmia after Administration of Chloroform,
By M. F. Taylor.

A Case of Acute Cantharides Poisoning, By J. S. AVERY.

1. Fever in Children.—Cantley divides the cases of anomalous fever in children into two groups. The first and more numerous group includes all those in which no definite cause is found on examination, but data can be discovered for a probable diagnosis, which is more or less verified by the course The second group is composed of those of events. cases in which the most thorough investigation fails to reveal the cause of the fever. In most cases fever is due to the direct effect upon the nervous system and so on the heat regulating centres, of toxines produced in the tissues of the body, or in the food before or after ingestion, by microorganisms or ferments. Feverish new born babies should be examined most carefully for evidences of sepsis, which may originate almost anywhere in the body. It is very improbable that teething is ever a direct cause of fever, but its complications may be so. Among them may be mentioned the bolting of food, local inflammation of the gums, inflammation of the mucous membrane of the mouth, etc. Many an anomalous temperature is due to inflammation of the throat. In acute follicular amygdalitis, or even in diphtheria. there may be no symptoms referable to the throat. The nasopharynx is a common site of infection. Chronically enlarged and pitted tonsils are a potent source of attacks of fever. In the absence of all other evidence one may have to fall back on the alimentary tract as the possible source of the fever. Carbohydrate fever is a name sometimes given to febrile attacks which are apparently the result of an excess of carbohydrate food and cured by strict limitation of the diet. The fever lasts from one to four days, and may reach 104° F. In some cases there are incessant vomiting and constipation. Any of the infectious fevers in their early stages may give rise to fever of uncertain origin. True influenza is often unrecognized and still more often diagnosticated on insufficient grounds. The abdominal type of influenza is often mistaken for appendicitis. The rheumatic poison may cause fever in children in many ways, myocarditis being a cause that is often

overlooked. Pyelitis is a cause of fever that is very difficult of diagnosis. Female infants are especially liable to infection of the urinary tract by the Bacillus coli. In the bladder it gives rise to little or no fever, bacilluria, and sometimes mild cystitis. It is when the bacillus infects the pelvis of the kidney, causing pyelitis, that it gives rise to high fever, the cause of which is overlooked, as it is difficult to obtain the urine of female babies for examination. Nervous, excitable children are prone to irregular pyrexia on slight provocation. Undue exertion, chill, and insufficient clothing are sometimes to blame.

2. Diagnosis of Fever.—Sutherland states that the following postulates may be assumed in any given case of fever: I. The cause of the fever must either be infective or noninfective, but it is almost always the former. 2. If the cause is infectivethat is to say, due to the invasion of a parasite—a parasite of some or other class must be present somewhere, either inside the body or in relation to one of its surfaces, and, unless ultramicroscopic, is in all probability discoverable. 3. Such parasite must either be—(a) bacterial (coccus, bacillus, vibrio, fungus); (b) protozoal (amœba, piroplasma, Leishman-Donovan body, spirillum, trypanosoma, etc.); and (c) vermicular (worm embryo or worm). 4. The infection must either be (a) a local infection of the skin or of some mucous surface of entrance or exit; (b) a general infection of the circulation; (c) an infection of the spleen or a localized infection of the lymph circulation; or (d) an infection from without. 5. If it is a local infection the parasite will excite local reaction wherever it has lodged. which will be likely to reveal itself by local symptoms and physical signs; and probably the parasite will be discoverable in some one or other secretion or pathological discharge. In addition, the blood should show evidence of entry of toxines into it from some one or other source. 6. If it is a general infection of the circulation it must be possible to find the parasite (unless ultramicroscopic) in the blood or to obtain evidence of its presence. 7. If it is an infection of the spleen, or a localized infection in the lymph circulation, the blood should show signs of disorder in some one or other of its hæmopoietic tissues, and it should be possible to find the parasite, or to obtain evidence of its presence, in the spleen, or in some one or other lymphoid or lymphatic structure. 8. A negative finding on all these points would imply that the cause is noninfective.

3. Dental Caries. - Wallace defines dental caries as a chemicoparasitical process, dependent upon the undue lodgment of fermentable carbohydrates and acid forming microorganisms, and consisting of two distinctly marked stages-decalcification or softening of the tissue, and dissolution of the softened residue. The conditions which favor the undue lodgment of carbohydrate food are: (1) those resulting from the nature and constitution of the individual, and (2) those resulting from the nature or constitution of the food. The first group includes peculiarities of the teeth themselves, fissures, pits, developmental defects, and irregularity. Of late years changes have taken place in food stuffs tending to increase the lodgeability of the carbohydrate and acid forming microorganisms. Nowadie almost all the cellulose is cooked, softened, and often extracted from the food, its detergent effect being completely lost. Starch when cooked or boiled becomes pasty, and is easily convertible into sugar, which is rapidly fermentable. Sugar forms a gummy substance, clinging to the teeth, and tending to entangle other substances. It also hampers the action of the saliva, and has an irritating effect upon the mucous membranes. So that, in order to prevent dental caries in children, attention must be paid to the dietary—it should contain cellulose (fresh fruit, bacon, etc.), and should be properly arranged. No meat should be used with sweets,

BERLINER KLINISCHE WOCHENSCHRIFT August 10, 1908.

- Pathology of Cerebellar Tumors (Multiple Ependymal Gliomata), By M. Martens and W. Seiffer.
- Concerning the Localization of Motor Aphasia, By E. NIESSL VON MAYENDORF.
- Cæsarean Section above the Symphysis, Is Schütz's Law of Pepsin Digestion Invalid?
- Studies of the Fæcal Fat in a Case of Pancreas Diabetes and of the Influence Exerted upon it by Pancreon,
- By Max Adler and R. Milcher.
 Concerning the Use of Urine for Wassermann's
 Syphilis Reaction,
 By Fritz Höhne.
- The Technique of the Serum Diagnosis of Syphilis,
- Concerning Micrococcic Disease of the Scalp,
 By Benno Chajes.
- Concerning a Peculiar Dyspnæa of Gastric Origin, By GIOVANNI GALLI. 10. Further Communications Concerning the Trade Accidents of Telephone Girls (Concluded)
- By M. BERNHARDT. 2. Localization of Motor Aphasla. - Von Mayendorf sums up the result of his studies with the statement that Broca's place appertains to the motor cortical region. It is not superfluous to emphasize this, because many have asserted that Broca's place conceals a psychic centre ranking above the motor region. It is entirely arbitrary to connect this with the third frontal convolution; it belongs both anatomically and physiologically to the anterior central convolution, and Pierre Marie is right when he ascribes to the third frontal convolution a part in the occurrence of motor aphasia.
- 5. Pancreas Diabetes .- Adler and Milcher allege as the result of their experiments that diseases of the pancreas are not necessarily associated with a steatorrhea, and that in their cases of pancreas diabetes pancreon exerted in no way a favorable influence upon the resorption of fat.
- 7. Serum Diagnosis of Syphilis.-Stern says that the most extreme care must be taken in the interpretation of the results produced by this test, as a positive reaction may be readily mistaken for a negative.
- 9. Dyspnœa of Gastric Origin.—Galli reports a case met with in a man thirty-two years of age, in which dyspnœa was due to air in the stomach, as proved clinically and by the x rays.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT

- August 11, 1908.
- 1. Puncture through the Corpus Callosum in Cases of Hydrocephalus, Tumors, and Epilepsy.

 By Annox and von Bramann.

 2. How We Test the Function of the Heart at the Time (1) on Justin By Waldworth.

- 3. Studies Concerning the Origin of Whooping Cough,
- "Tuberculous" Studies Concerning 4. Experimental Changes in the Skin without Concomitant Action
 Of Tubercle Bacilli
 By ZIELER.
- 5. Concerning Much's Granular Form of the Tuberculous Virus. By WIRTHS.
- 6. The Question of the Specificity of the Complement Binding Method in Syphilis, By JOCHMANN and TÖPFER.
- 7. Treatment of Children with Scarlet Fever, By OPPENHEIMER.
- 8. Treatment of Summer Diarrhœa in Children, By Götz.
- 9. Radical Operation for Inguinal Hernia. Interrupted
 Sutures in the Fascia, By Hackenbruch.
 10. Remarks Concerning the Treatment of Hydrocele,
- II. Technique of the Extraction of Needles,
 By Häberlin. Beginning of the Ophthalmocyto Diagnosis with Tuber-culin. Nature of the Exudate.
- By SABRAZES and LAFON. Concerning the Use of Gum Arabic as an Addition to the Anæsthetic in Lumbar Anæsthesia, By DÖNITZ. The Question of Hospital Treatment and the Indications for the Same,

 By BONTTZ.

 By BONTTZ.
- By BRÄUTIGAM. 15. Prophylaxis of Measles,
 16. A New Application of the X Rays,
 17. Obituary of Dr. Karl Singer, By DEGLE. By DESSAUER
- By FISCHER. 1. Puncture through the Corpus Callosum in Cases of Hydrocephalus, Tumors, and Epilepsy. -Anton and von Bramann do not consider the usual methods of puncturing the cerebral ventricles, or lumbar puncture alone, to have the requisite efficiency in troubles of this nature, and therefore recommend to penetrate the skull near the sagittal suture, pass down between the lobes of the brain, and thrust a blunt cannula through the corpus callosum into the ventricle. They report three cases successfully operated on in this manner, creating openings of communication between the ventricles and the subdural space. They consider this operation to be indicated in cases of hydrocephalus, tumors with hydrocephalus and neuritis from engorgement, hypertrophy of the brain, and the various diseases associated with narrowing of the brain space which
- have been classed as pseudotumors. 4. Experimental Studies Concerning "Tuberculous" Changes in the Skin without Concomitant Action of Tubercle Bacilli.-Zieler shows by his experiments that changes in the skin may be induced which are less characteristic than those induced by cutaneous inoculations of tuberculin, but differ from them only in degree, and must be designated histologically as tuberculous structures by the inoculation of solutions of material arising from the tubercle bacilli containing no corpuscular, or even ultramicroscopic, constituents of the tubercle bacilli and none of their detritus.
- 5. Much's Granular Form of the Tuberculous Virus .- Wirths declares that the granular form of tuberculous virus stainable only by Gram's method is no product of disintegration, but is a virulent form of development and the most resistent known form of Koch's tubercle bacillus, both in the human and in the bovine type
- Treatment of Children with Scarlet Fever. Oppenheimer protests against the use of baths and cold packs, and against the administration of meat, meat broths, and eggs, in cases of scarlet fever as predisposing to renal troubles. He alleges that during the eighteen years he has been in practice he

- has treated over 150 cases of scarlet fever, seen every imaginable kind of complication, lost three cases by death, but has never had a case of inflammation of the kidneys.
- 10. Hydrocele. Mohr speaks favorably of the injection of adrenalin in cases of hydrocele which for any reason cannot be operated on and refill quickly after simple puncture. His experience is that the sack refills more and more slowly after each injection. For operative measures he prefers the operation described by Klapp in 1904 as superior to the older operations of Volkmann and von Bergmann because it can be done under local anæsthesia. and the after treatment may be ambulant.

EDINBURGH MEDICAL JOURNAL September, 1908.

- I. Birth Stools in Egypt,
 By Sir Alexander Russell Simpson. Hernia of the Ovary in Infants, with Reference Specially to the Operative Treatment of the Affection,
- By James H. Nicoll.
 Lymphangeioma, By H. A. Ledlard.
 Two Cases of Meningitis Admitted to Hospital as Enteric Fever, with Treatment (Medicinal and Diet-
- etic), The Treatment of Tetanus, The Leucocytosis of Whooping Cough, with Analysis of 112 Cases, By J. Frank Crombie.
- The Percentage Composition of Edinburgh Milks, By A. DINGWALL-FORDYCE.
- An Unsuspected Case of Placenta Prævia in a Primigravida at the Sixth Month, By R. W. Johnstone.
 The Condition of Parts Sixty-two years after Excision of the Elbow Joint, By H. A. MOFFAT.
- Hernia of the Ovary in Infants.-Nicoll observes that in a few cases the development of strangulation gives the first indication of the hernia. In other cases the parents give a history of apparent local discomfort on the part of the infant as leading to the discovery of the swelling. In the large majority of instances, as in the case of inguinal hernia in male infants, the parents simply state that they have observed a "lump" or "swelling" in the groin, which "lump" is said to be constant or intermittent in appearance as the ovary happens to be reducible or not. In a number of the cases the infant presents an ill nourished and puny appearance, and is said to be fractious and troublesome. Treatment should in nearly all cases be operative. In the strangulated case operation is imperative. In the case of the irreducible ovary it is in every sense advisable. The wearing of a protective truss in the infant is impracticable. In the case of the reducible ovary operation would appear to be the rational line of treatment. Truss wearing by the young infant is a troublesome and usually ineffective procedure, and the choice of treatment lies between operation and ignoring the hernia. The latter line has this to be said for it, that in certain cases the hernia disappears without having been strangulated, and is not succeeded by enterocele or epiplocele. On the other hand, the operation has a mortality rate purely nominal. The advantages of operative treatment are as follows:—(a) Prevention of strangulation; (b) prevention of subsequent enterocele; (c) relief from the irksomeness of truss wearing; (d) improvement of the infant's health (in many cases the change from peevish emaciation to plump health is marked); (e) ablation of cysts in the ovary. In

over thirty per cent. of the cases the ovary is found to contain cysts—single or multiple. Such cysts are ablated in various ways—excision followed by suture, evisceration with the sharp spoon, or other method.

6. The Leucocytosis of Whooping Cough.—Crombie says that the cause of the lymphocytosis of whooping cough is somewhat difficult of explanation. If, as is alleged, the specific germ of whooping cough during the catarrhal stage grows upon the mucous membrane of the respiratory tract, then the lymphocytosis may be due to a positive chemotaxis, the result of stimulation of the tracheobronchial lymphatic glands and neighboring lymphoid tissue. The lymphocytes are protective and may act as phagocytes, or may produce an antitoxine capable of dealing with the toxines of the whooping cough germ.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

September, 1908.

I. Recent Mania: Its Cause and Treatment,

2. Typhoid Carriers, By RICHARD KELLY.
By J. A. PRINGLE.
3. Clinical Reports of the Rotunda Hospital (Continued),
By E. HASTING TWEEDY, JOHN W. BELL, and
ARTHUR FIGURES.

ARTHUR HOLMES. 2. Typhoid Carriers.—Pringle reviews the literature on chronic typhoid carriers, and finds certain points, the observation of which in investigating an outbreak might lead one to suspect a chronic typhoid carrier as the source of infection: The occurrence of the cases at irregular intervals, and in groups, this is particularly noticeable in the cases in institutions, etc. The sporadic nature of the cases occurring in private life. He thinks these carriers will afford a sounder explanation of the existence of enteric infected houses and places than that offered by the supposition that the Bacillus typhosus retained its vitality in dust and crevices, which was the theory hitherto held. Women appear to become carriers more frequently than men in about the proportion of three to one. Of treatment, Pringle says that when one remembers the seat of the infective organism in the body-namely, the gallbladder—and the length of time such cases may continue active agents in the spread of the disease, the immense difficulties encountered in their successful treatment may be more easily understood. In fact, up to the present time, no satisfactory treatment has been found. In the first place there is the practical difficulty of getting such unconscious carriers to remain under surveillance and bacteriological control, and of carrying out continuous and efficient disinfectant measures, though it is clear such precautions are absolutely necessary. Then, as regards the actual treatment, provided isolation and disinfection of excreta can be secured, we have no drug at our disposal which The so called inteswill render the bile sterile. tinal antiseptics have been employed without success. Urotropin, invaluable in dealing with infection of the urinary tract, has not been found successful in causing disappearance of typhoid bacilli from the fæces. Attempts have been made to increase the immunity of the subject against typhoid infection in the hope that by augmenting the powers of resistance a bactericidal effect might be produced on the organism. So far no promising results have been obtained, although this line of treatment offers greater posibilities of ultimate success than any other. In Germany, surgical treatment—namely, cholecystostomy and drainage of the gallbladder—has been adopted by Delher in two cases, though in neither of them were there symptoms pointing to gallbladder disease. In a few months it was found the bacillus disappeared from the fæces, and the patient's serum failed to give Widal's reaction. As a preventive measure Pringle suggests the bacteriological examination of fæces of typhoid patients for a few months after recovery.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE September, 1908.

 Fosterior Column Degenerations Following Injury to the Posterior Roots of the Seventh Cervical Nerves, By H. W. MITCHELL and A. M. BARRETT.
 Osseous Plaques of the Piaarachnoid and their Relation

to Pain in Acromegaly, By S. LEOPOLD. 1. Posterior Column Degenerations Following Injury to the Posterior Roots of the Seventh Cervical Nerves.—Mitchell and Barrett report such a case. The patient, a heavy drinker, fell from a hay mow some distance to the floor, and on the following morning was picked up in an unconscious condition. It was observed that his head was turned to the side and bent in a peculiar position. His arms were weak, and it was difficult for him to rise from a chair. He was admitted to a general hospital, and five days later sent to an insane hospital. Here his condition became rapidly worse; below the level of the second rib, excepting for the outer surface of both arms, pin pricks produced no pain reaction, and all voluntary movements were absent in arms and legs; and he died soon. Autopsy showed that the seventh cervical segment presented the appearance of severe injury. The authors conclude that the case presents two interesting anatomical points: First, while the cord at the level of the seventh cervical segment was considerably injured in the anterior, and more especially the lateral regions, the injury to the posterior columns in a peculiar way involved chiefly the entering posterior roots of the seventh cervical nerve, together with a few of the fibres of the sixth, the remainder of the column showing only a small degeneration in the median part. The second and more important feature was the comma tract degeneration, and its relation to the degeneration of the posterior roots. The slight injury to the posterior columns as a whole, and the marked involvement of the entering nerve roots had an important bearing on the origin of the fibres of the comma tract, and their exogenous origin. Three opinions are maintained in the literature as to the origin of the comma tract-first, that they are of endogenous origin, i. e., fibre processes of cells of the posterior horn; second, that they are the downward continuation of fibres of the posterior roots; third, that they are made of both endogenous and exogenous fibres. The conditions present in this case seem to lend evidence to their exogenous origin, because of, first, the marked degeneration of the posterior nerve roots as they enter the cord, and, second, a lack of any significant direct injury to the posterior columns or the nerve cells of the posterior horns, none of which show the changes which are characteristic of an injury to the fibre process of a cell.

2. Osseous Plaques of the Piaarachnoid and their Relation to Pain in Acromegaly.—Leopold summarizes his article: Osseous plaques are frequently present in the piaarachnoid. They are found in many diseases, such as uræmia, tuberculosis, retogressive conditions, etc. Arteriosclerosis seems to be the underlying factor in their causation. The presence of these plaques upon the spinal pia in acromegaly does not explain the production of pain in that disease. There is no definite pathology of the spinal cord in acromegaly.

AMERICAN JOURNAL OF OBSTETRICS.

September, 1908.

 The Management of the Stages of Labor to Prevent Maternal Dystocia, By R. C. Norris.
 The Evolution of Modern Maternity Technique,

By E. L. CALL.

3. The Treatment of Acute General Septic Peritonitis,
By J. F. W. Ross.

4 Endometritis Exfoliativa. Dysmenorrhœa Membranacea,
By H. Ehrenfest.
By J. C. Cameron.

6. Diseases and Injuries of the Cervix Uteri,
By P. F. CHAMBERS.

7. Gangrene of the Puerperal Uterus,

By A. J. Ronginsky.

8. Molluscum Contagiosum of the Genitals in Husband and Wife and of the Face and Neck in their Infant Boy,

By J. R. Goodall.

9. Hourglass Contraction of the Uterus during Labor,
By E. SOTHORON.
10. Treatment of Otitis Media complicating Scarlatina and

Measles,

II. Congenital Pyloric Stenosis,

By E. P. Fowler.

By E. P. Fowler.

By W. C. Schoenijahn.

By T. S. D. Grasty.

 Syphilis in Pregnancy and Early Infancy, By A. B. Morse.

- 3. The Treatment of Acute General Septic Peritonitis.-Ross thinks the treatment of this grave condition should be first surgical, and at a very early period, and then medical, including the old Clark treatment, with larges doses of opium if necessary. Operations should be performed early, rapidly, and the chances of subsequent infection should be removed by the complete closure of the abdominal cavity. Rigidity of the abdominal muscles is the indication that the disease is present. Neither drainage nor posture have served the author well. An ample incision having been made, the author irrigates thoroughly with warm saline solution the five pools in which pus accumulates, one under the liver, one under the spleen, one in each loin, and one in the pelvis. The source of infection should be found, if possible, and closed by approximating sutures, or shut off by gauze packing. The intestines should be handled as little as possible, and no attempt made to wipe away lymph deposits. The author's formula would be operate early, incise amply, repair carefully, wash thoroughly, manipulate gently, perform rapidly, close completely, and narcotize deeply.
- 5. Heart Disease and Pregnancy.—Cameron thinks the physician should forecast the probable effects of pregnancy and labor upon his patients who are suffering with heart trouble, and that the obstetrician should know the extent to which endo-

carditis and chronic valvular disease may modify or derange the course of pregnancy, labor, and the puerperium in those whom he may attend. must remember that different forms of heart disease affect pregnant women in different ways, and that it is important to make an exact diagnosis before beginning treatment. The majority of patients with heart lesions may bear a living child with safety, but each recurring pregnancy aggravates the heart lesion. A cardiac lesion may exist before pregnancy, the latter condition then being a complication, or the heart lesion may be latent and be developed by pregnancy, or it may begin during pregnancy or the puerperium, being then a complication of pregnancy. With regard to the degree of danger heart lesions during pregnancy may be considered. in the following order: mitral stenosis, aortic insufficiency, mitral insufficiency either alone or complicated with stenosis or some aortic lesion.

Hourglass Contraction of the Uterus during Labor.-Sothoron states that the commonly suggested causes of this condition are irritation within the uterus, abuse of ergot, abnormal adherence of the placenta, and prolonged use of chloroform or ether. The condition may be recognized by the abnormally high position of the fundus, by elastic feel of the cord without attending pains, while on palpation the uterus is found irregularly contracted. The treatment depends on two conditions (1), a partly adherent placenta in a cavity with poorly contracted walls, resulting in hæmorrhage, (2) a retained nonadherent placenta in a cavity with well contracted walls, and little or no hæmorrhage. The following conclusions are offered: (1) Avoid meddlesome midwifery, such as early rupture of the membranes before dilatation is complete. (2) Avoid ergot and similar drugs until the third stage of labor is concluded. (3) Avoid interference with normal uterine action by prolonged use of chloroform or ether. (4) Avoid the danger of stimulating spasmodic uterine contraction as well as danger of rupture of the cord by an attempt to deliver an adherent placenta by traction on the cord. The remedy suggested for the relief of the contraction is the gradual introduction of the hand, the placenta being removed with its withdrawal.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

Dr. William H. Welch, of Baltimore, in the Chair. Section I.—Pathology and Bacteriology.

In opening the meeting of the section, the chairman said that the work of the section included all work on which the rational and intelligent attempts to control the disease must be based. The methods adopted for the prevention of the spread of tuberculosis should always be based upon an exact:

knowledge of the cause of the disease and its method of diffusion, if they were to be productive of the most good. He then announced the list of

honorary presidents of the section.

The Viability of the Tubercle Bacillus.-Dr. MILTON J. ROSENAU, of Washington, said that the tubercle bacillus was uniformly considered to be unusually resistant to methods designed to destroy it. It was formerly thought to be a spore bearing organism, but he was of the opinion that it did not contain spores. The fatty and waxy constituents which surrounded the bacillus after the fashion of a capsule, together with the acid fast properties of the organism, were thought to be further indications of its resisting powers. Unfortunately, there was no satisfactory criterion of the death of the Bacillus tuberculosis except secondary animal inoculations. The reactions produced by tuberculin were just the same when the bacillus was dead. He said that his own work indicated that exposure to a temperature of 60° C. (140° F.) for twenty minutes would kill the bacillus. The organisms usually died in three months; in dried sputum they would live sometimes for many months. He considered that the Bacillus tuberculosis approached the other nonspore bearing bacilli very closely in all its cultural characteristics.

The Action of Diffused Light upon the Bacillus Tuberculosis.—Professor John Weinzer, of Seattle, said that the Bacillus tuberculosis was killed in from two to ten minutes by exposure to direct sunlight. When exposed to diffused light, it was always killed within a week and in some cases within twenty-four hours. When the bacilli were dried and exposed to diffused light, they lived longer than moist cultures. It appeared certain that diffused light materially shortened the life of the

bacillus.

A Chamber in which Dried Tubercle Bacilli may be Handled Without Danger.—Dr. ARTHUR P. HITCHENS, of Glenolden, Pa., described a glass chamber in which tuberculins and the dried products of the tubercle bacillus might be handled without danger to the operator. The essential feature of the chamber was the method by which rubber gloves with long arms were fastened to the front glass face of the chamber. A partial vacuum was maintained within the chamber by the use of a pump. After the preparation was made, it was tightly sealed in a bottle and formalin was generated in the chamber, which was left sealed over night.

Section II.—Clinical Study and Therapy of Tuberculosis; Sanatoria, Hospitals, and Dispensaries.

Dr. VINCENT Y. BOWDITCH, of Boston, in the Chair.

Typhobacillosis.—Professor L. Landouzy, of Paris, spoke of a type of acute tuberculosis which was originally described by him in 1883. He considered it both pathologically and clinically one of the most distinct and clearly defined manifestations of acute septichemia due to the bacillus. It presented itself in the form of a typhoid state with continuous fever and enlargement of the splcen and without signs of visceral localization. The fever

was more irregular than that of typhoid fever, there was a lack of correspondence between the pulse rate and the temperature, the pulse was more rapid than in typhoid fever, and there were no localizing symptoms in the viscera. He said that there were no rose spots and that every case of typhoid fever in which rose spots were lacking should be suspected. If the patient died, nothing would be found but the ordinary congestive and degenerative lesions seen in all severe septichæmias. The disease often terminated favorably in three or four weeks. But the convalescence was imperfect, and at the end of a few weeks or many months localized signs of tuberculosis appeared in the lungs, the pleura, or the mesentery. Of course the serum reaction with Bacillus typhosus was negative; inoculation of a guinea pig with the patient's blood produced tuberculosis in the animal. The serum reaction of d'Arloing and Courmont, and the ophthalmic reaction were considered of value in making a diagnosis. He referred to experiments on rabbits and guinea pigs, which indicated that such a condition as typhobacillosis existed.

The Duration of the Actively Infective Stage of Tuberculosis .- Dr. ROBERT N. WILLSON and Dr. RANDLE C. ROSENBERGER, of Philadelphia, reported the results of the study of one hundred cases of tuberculosis in which the urine, the sputum, the fæces, the semen, the blood, the spinal fluid, and pleural and peritoneal exudates were examined for tubercle bacilli. In the majority of cases the organisms were found in at least one of the main excretions, and sometimes in all three of them. In five out of eight cases the semen contained tubercle bacilli at the time of autopsy. The organisms were found in the fæces in every case in which they were found either in the sputum or in the urine, and in many cases of acute miliary tuberculosis and of glandular tuberculosis. The duration of the viability of the organisms varied greatly when they were allowed to dry in full sunlight. They found that there was no limit to the duration of infectiveness even of the dried excretions; the bacilli lived in water for more than a year. In animal experiments they found tubercle bacilli in the urine and fæces within the first week, before either cough or sputum appeared. The presence of living tubercle bacilli in the urine and in the fæces was of importance in relation to the infectiveness of sewage and of drinking water.

SECTION III.—SURGERY AND ORTHOPÆDICS.

Dr. CHARLES H. MAYO, of Rochester, Minn., in the Chair.

Tuberculosis of the Larynx: the Type which is Capable of Recovery and the Principles of Treatment.—Dr. W. E. Casselberry, of Chicago, said that certain persons acquired a natural resistance sufficient to arrest laryngeal tuberculosis, and that many persons offered a considerable resistance which was only just short of the degree required for arrest. Tuberculous hyperplasia in the larynx might undergo resolution, and unmistakable tuberculous ulcers did occasionally heal.

A Brief Note upon the Value of the Ophthalmic Tuberculin Test in the Question of the Surgical Treatment of Orbital Disease. — Dr.

CHARLES A. OLIVER, of Philadelphia, said that ophthalmic tuberculin tests, judiciously used, were of value in the diagnosis of tuberculosis of the corresponding eye and its annexa, particularly in primary infections. They should form a part of the routine study of every doubtful case of orbital dis-Positive reease before an operation was done. sults should be followed by tuberculin treatment. The conclusions of Dr. Oliver were based upon the observation of three cases.

Tuberculosis of the Cornea.—Dr. OSCAR DODD, of Chicago, said that tuberculosis of the cornea was nearly always secondary. It was usually preceded by a swelling at the corneal margin resembling phlyctenular conjunctivitis. Tuberculin injections for diagnostic purposes caused a general and a local reaction, which was manifested by a marked inflammation of the eye, more infiltration into the cornea, and the formation of new foci. The use of T. R. in small doses was followed by the disappearance of the spots without opacity. Too large a dose was followed by an increase of infiltration, which persisted for several days.

Tuberculosis of the Ear .- Dr. CLARENCE JOHN BLAKE, of Boston, described a form of tuberculosis of the middle ear and the labyrinth which was characterized by considerable and rapid destruction of all tissues, without preliminary subjective symptoms. The infection probably gained the tympanum through the tympanopharyngeal tube. The diagnosis was to be made by careful aural examina-

Tuberculosis of the Nose, Mouth, and Pharynx. -Dr. H. P. Mosher, of Boston, said that primary tuberculosis of the nose was rare; when present it was characterized by a superficial ulceration over the anterior part of the cartilaginous sæptum. Secondary tuberculosis of the nose was characterized by the production of tuberculous tumors. It was usually slow and progressive, but did not extend to the pharynx. It was to be diagnosticated from Tuberculous lesions were found in all parts of the mouth; ulceration was the common lesion, although a tuberculous tumor or a tuberculous abscess might occur. Tuberculous lesions of the mouth were often started by an injury. berculosis of the pharynx was a common secondary infection from a pulmonary lesion. Extensive pharyngeal lesions interfered with swallowing and ended fatally. Tuberculosis of the tonsil was secondary to pulmonary tuberculosis; but in five per cent. of the cases it was primary. The pharyngeal tonsil was infected by the air current, the faucial tonsil by the food. He was of the opinion that tuberculosis of the tonsil rarely caused pulmonary or general tuberculosis. The great importance of tonsillar tuberculosis was the frequency of cervical lymph node tuberculosis as a secondary lesion. Cervical tuberculosis was limited to the lymph nodes of the neck and seldom gave rise to tuberculosis of the apex of the pleura or lungs. Tuberculous tonsils should be removed by thorough dissection. Tuberculosis of the nose, the mouth, and the pharynx should be treated with thorough curetting and lactic acid. In small primary lesions tuberculin seemed to have a special field.

(To be continued.)

New Inventions.

A CLAMP FOR DIRECT TRANSFUSION OF BLOOD.

By ISAAC LEVIN, M. D.,

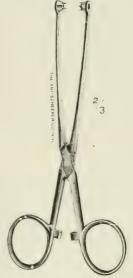
New York.

Dr. Crile, of Cleveland, has recently taken up anew the question of the treatment of acute anæmia, surgical shock, and similar conditions with direct transfusion of blood. There is no doubt that with the present high development of surgical technique and asepsis it is possible to perform the operation with no danger to the donor and with comparatively little danger to the recipient, the more so as the patients on whom the operation is usually attempted are in a desperate condition.

In order to be successful, the operation demands not only a perfect asepsis, but also as much expedition as is possible in the work. Dr. Crile (Annals of Surgery, September, 1907) abandoned the arterial suture and devised for the anastomosis a ring which presents practically a short bloodvessel cannula with a handle. The clamp which I present here I think requires a less complicated technique and less time for the performance of the operation

than Crile's instrument does.

I shall first give Dr. Crile's own description of his technique: "A cannula whose bore is larger than the actual tissue thickness of either vein or artery is selected. The vein may then be pushed through this tube, after which the freed end is turned back like a cuff and snugly tied in the second groove. During this time the handle of the cannula is stead-



ied and manipulated by means of a forceps. artery is then drawn over the vein and is snugly tied with a smal! linen ligature in the first groove.

The clamp devised by me presents an artery clamp without the grooves. At the tip of each blade there is attached a small cannula with a smooth bore. At the inner edge of each cannula there are attached four small pin points, and on the outer surface of the cannula there are cut out four grooves. When the clamp is closed, the pins of one cannula lie in the grooves of the other. The cannulas have a pyramidal form because the pins are bent outward. At the beginning of the operation both halves of the clamp are separated. The vein is pushed through one cannula and its wall is hooked on the pins. The same is done with the artery and the other half of the clamp. Then both halves of the clamp are united and clamped. I believe that when we deal with small bloodvessels it is much easier to hook the walls on the pins than to turn them back like a cuff. When the clamp is closed, both bloodvessels are connected with the serous surfaces.

I have performed several operations on dogs, uniting the femoral vein of one dog to the femoral artery of another. The transfusion was kept up for over half an hour, until the donor was practically exsanguinated. There was no clotting, leakage, or any other defect in the clamp.

Book Antices.

We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Subcutaneous Hydrocarbon Protheses. By F. Strange Kolle, M. D., Author of The Recent Röntgen Discovery, etc. New York: The Grafton Press, 1908. Pp. 153.

In the preparation of this handsome brochure the author has been actuated by a desire to place before the profession a treatise at once practical and concise, dealing with the subcutaneous employment of hydrocarbons for the correction of defects about the face, neck, and shoulders. The importance of this development of cosmetic surgery is, in his opinion, undeniable, and it has, he maintains, superseded certain extensive operative procedures, notably in rhinoplasty, "giving results that no surgeon could hope to attain under the former laws of surgery." In support of this contention he has cited the experience of no fewer than one hundred and twenty contributors to the literature of the subject; and it must be admitted that he has presented an exceedingly strong case.

After referring to Dr. J. Leonard Corning's pioneer undertakings with solidifying oils in neurological surgery, Kolle enters promptly upon a detailed discussion of the application of the principle to the correction of defects about the face, neck, and shoulders. In this connection the indications, the advantages, the untoward results, and the absorption and disintegration of the paraffin are thoroughly gone into. On page 34 the author adverts to the difficulty of procuring paraffin with a proper melting point, and makes note of the fact that, while ten operators of experience recommend a melting point ranging from 104° to 115° F., three others advocate one considerably higher, viz., from 133° F. to 148° F. Very explicit directions as to the technique of the injections, supplemented by numerous illustrations of instruments and cases, lend a real

value to the book, and an elaborate index and a list of authorities cited in the text help one to ready reference.

Adenomyoma of the Uterus. By Thomas Stephen Cullen, Associate Professor of Gynæcology in the Johns Hopkins University. Illustrated by Herman Becker and August Horn. Philadelphia and London: W. B. Saunders Company, 1908. Pp. xiii-270.

This is another noteworthy addition to the series of gynæcological contributions emanating from Johns Hopkins University, quite in keeping with the standard work which has preceded it.

The author established for himself the reputation of a conscientious and thorough worker a few years ago by his monograph on cancer of the uterus, and now he has extended his reputation by the present work.

The subject of adenomyoma of the uterus, and nothing else, is included in these pages. Its origin from the glands of the uterine mucosa is demonstrated by the analysis of a large series of cases in which the tumors had developed into all portions of the uterus and surrounding structures. Its association with malignant growths is also shown.

To say that the book is illustrated by Becker and Horn means that the same beautiful and accurate work with which students of gynæcology have been familiar these ten years or more forms an important feature of it.

The clarity of the text is admirable. It is a book in which the gynæcological surgeon will be especially interested, and it is unqualifiedly commended.

Beiträge zur allgemeinen Kolloidchemie. Von Dr. B. SZIL-ARD, Paris, Dresden: Theodor Steinkopff, 1908. Pp. 41. (Price, M. 1.50.)

The chemistry of the colloidal bodies is assuming increasing importance in medical teaching, and the pamphlet by Dr. Szilard dealing with the behavior of the organic colloidal substances is calculated to be of special value to students of physiological chemistry, the relationship of the inorganic to the organic being very clearly indicated in the text and by tables, though the author does not attempt to do more than express in a general way the theories which he entertains regarding the behavior of the colloidal bodies as developed by studies in ionism.

Transactions of the American Association of Genitourinary Surgeons. Twenty-seventh Annual Meeting, May, 1907, at Washington, D. C. New York: The Grafton Press, 1908.

The thirty-three papers and theses contained in this volume represent a vast amount of valuable material and a great variety of subjects. Many of the papers have already been published in the current medical journals and are familiar to the profession. It is difficult to select articles for comment among such a set of excellent contributions as this volume contains, but we might mention especially those of Dr. Edward Martin, on epididymovasostomy as a cure for sterility; of Dr. H. H. Young, on the diagnosis of calculi incarcerated at the lower end of the ureter; of Dr. L. G. Cole, on the radiographic diagnosis of renal stones; of Dr. F. S. Watson, on renal drainage; and of Dr. Howard Kelly, on mensuration in urinary diseases. A very interesting and well illustrated article by Dr.

Tilden Brown, on the development of his cystoscope since 1900, closes the volume. The book is well printed and the illustrations are unusually clear and well got up.

Zur Differentialdiagnose der Poliomyelitis anterior acuta (Myatonia congenita [Oppenheim] und Polyneuritis), Inaugural-Dissertation zur Erlangung der Doktorwürde an der Friedrich-Wilhelms-Universität zu Berlin. Von J. VICTOR HABERMANN, A. B., M. D., ehemals vol. Assistent an dem Eppendorfer Krankenhaus zu Hamburg und an der königlichen Charité zu Berlin. Berlin: S. Karger, 1908. Pp. 48.

In this short thesis the author reviews some of the atypical cases of poliomyelitis and of myatonia congenita, and endeavors to point out the essential resemblances and differences. He passes in review the hypotonias due to myxœdema, mongolism, and rhachitis, the paralyses and atrophies due to hæmatomyelia, infantile aplasias of the spinal cord, muscular dystrophy, and polyneuritis. Special interest with reference to polyneuritis attaches itself to the polyneuritic type of poliomyelitis as described by Wickman in the recent Swedish epidemic, and also noted by Harbitz and Scheel in their studies. These latter observers feel that the possibility of a complicating neuritis in poliomyelitis is an open question, and Habermann is inclined to hold the same opinion.

The difficulties of diagnosis are becoming more and more evident with increasing experience, and neurologists and general practitioners alike will welcome this excellent though short summary.

BOOKS, PAMPHLETS, ETC., RECEIVED

Hygienic Laboratory. Bulletin No. 45. June, 1908. Further Studies upon Anaphylaxis. By M. J. Rosenau and John F. Anderson. Washington: Government Printing

Office, 1908. Pp. 65.
Hygiene for Nurses. By Isabel McIsaac, Author of Primary Nursing Technique, Graduate of the Illinois School for Nurses, etc. New York: The Macmillan Company,

for Nurses, etc. New York: The Macmillan Company, 1908. Pp. xiv-208.

Das Gehirn und die Nebenhöhlen der Nase. Von Dr. A. Onodi, a. o. Professor der Rhinolaryngologie an der Universität in Budapest, etc. Mit 63 Tafeln nach photo-graphischen Aufnahmen. Wien und Leipzig: Alfred Hölder, 1908. Pp. 13.

Die krankhaften Erscheinungen des Geschlechtssinnes. Von Dr. Georg Merzbach, Arzt für Haut- und Harnleiden in Berlin. Wien und Leipzig: Alfred Hölder, 1909. Pp. V111-470.

Hay Fever, Hay Asthma, its Causes, Diagnosis, and Treatment. By William Lloyd, Fellow of the Royal College of Surgeons, etc. Second Edition. London: Henry J. Glaisher, 1908. Pp. 101.

J. Glaisher, 1908. Pp. 101.
Neurological and Mental Diagnosis. A Manual of Methods. By L. Pierce Clark, M. D., Senior Attending Physician. Hospital for Nervous Diseases, New York, etc., and A. Ross Diefendorf, M. D., Lecturer in Psychiatry in Yale University, etc. New York: Macmillan Company, 1908.

Dinversity, etc. New Forks.

Pp. 188.

A Textbook of Human Physiology, Theoretic and Practical. By George V. N. Dearborn, A. M. (Harv.), Ph. D., M. D. (Col.), Professor of Physiology in the Medical and Dental Schools of Tufts College, Boston, etc. Illustrated with 300 Engravings and 9 Plates. Philadelphia and New York: Lea & Febiger, 1908. Pp. xii-550.

Budapest Székesfőváros Statisztíkai Közleményei. 40.

Budapest Halandósága 1906-Ban. Szerkesztette: Dr. Pikler

Budapest Halandósága 1906-Ban. Szerkeszettte: Dr. Pikler J. Gyula, a hívatai aligazgatója. Budapest: 1908. Kilían Frigyes Utóda, M. K. Egyetemi Könyvkereskedésének Bizománya

Hygienic Laboratory. Bulletin No. 44. May, 1908. Report No. 2 on The Origin and Prevalence of Typhoid Fever in the District of Columbia. (1907.) By M. J. Rosenau, L. L. Lumsden, and Joseph H. Kastle. washington: Government Printing Office, 1908. Pp. 63.

Official Mews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending September 25, 1908:

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Army Intelligence:

Official list of changes in the stations and duties of officers in the medical corps of the United States Army for the week ending September 26, 1908:

ALLEN, J. H., Captain. Granted leave of absence for one

month in the United States.

Brewer, I. W., Medical Reserve Corps. Left Fort Warren, Mass., on leave of absence for thirteen days.

Brown, H. L., Captain. Granted leave of absence for

five days. CAMPBELL, G. F., Medical Reserve Corps.

San Francisco, Cal., from Philippine Service, ordered to Alcatraz Island, Cal., for duty at the Pacific Branch, United States Military Prison.

CLARKE, J. T., Major. Granted leave of absence for one month in the United States.

W. R., Captain. Left Fort Mason, Cal., for duty with Company B, H. C., en route to camp at Atascadero, Cal.

Ferguson, J. B., Medical Reserve Corps. Recently appointed from contract surgeon, United States Army, ordered to active duty.

HUNTINGTON, P. W., Captain. Granted an extension of

one month to present leave of absence.

JACKSON, T. W., Medical Reserve Corps. Arrived at San Francisco, Cal., on leave of absence for one month

francisco, Cai., on Rayo or abstraction from Philippines Division.

FER, F. R., Major. Ordered from San Francisco, Cal., to Presidio of Monterey, Cal., and thence to camp at Atascadero.

PURNELL, H. S., Captain. Granted leave of absence for two months, to take effect about November 1st.

Scorr, G. H., Captain. Granted an extension to present from duty at Fort Logan, Colo., at the expiration of present leave of absence to include October 31st; relieved from duty at Fort Logan, Colo., at the expiration of present leave of absence, and ordered to proceed on transport sailing November 5, 1908, to Manila, P. I.,

for Philippine service.

Stedman, C. J., Captain. Ordered to return from American Lake, Wash. to Fort Stevens, Ore.

Van Poole, G. M., Captain. Granted four months' leave of absence, when services can be spared

VEDDER, E. D., Captain. Arrived at Fort Walla Walla, Wash., from four months' leave of absence. Weed, F. W., Captain. Left Plattsburg Barracks, N. Y.,

on leave of absence for one month.

The following named medical officers have been relieved from duty at present stations and ordered to proceed to Washington, D. C., and report October 1st, for a course Washington, D. C., and report October 1st, for a course of instruction at the Army Medical School: L. C. Garcia, S. F. O'Day, A. D. Tuttle, E. C. Hill, C. A. Treuholtz, R. W. Kerr, C. G. Snow, W. S. Shields, C. E. Doerr, A. D. Parce, D. W. Harmon, L. R. Dunbar, J. C. Magee, A. Mueller, F. S. Wright, N. L. McDiarmid, G. D. Heath, Jr., J. B. H. Waring, A. D. Davis, C. E. Fronk, D. P. Card, W. H. Smith, W. R. Dear, R. C. Bayly, R. H. Goldthwaite, J. A. Wilson, T. J. Leary, D. Miner, G. H. McLellan, M. C. Stayer.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending September 26, 1908:

GARDNER, J. E., Medical Inspector. Ordered to additional duty at the Naval Recruiting Station, Boston, Mass., and to duty in attendance upon officers of the Navy and Marine Corps residing in Boston not otherwise provided with medical aid.

FISKE, C. N., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Boston, Mass., and or-dered to the Naval Recruiting Station, Minneapolis,

HATHAWAY, G. S., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from August 1, 1908. JOHNSON, L. W., Assistant Surgeon. Appointed an assistant surgeon from September 17, 1908.

Lando, M. E., Assistant Surgeon. Ordered to the Naval Recruiting Station, Buffalo, N. Y.

McDonell, W. N., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Minneapolis, Minn.; ordered to Washington, D. C., to report to the Surgeon General of the Navy for temporary duty, and thence to the Naval Academy.

Shippen, L. P., Assistant Surgeon. Appointed an assist-

ant surgeon from September 17, 1908.

The following assistant and acting assistant surgeons have been detached from the place opposite their nar-and ordered to the Naval Medical School, Washington, D. C., for a course of instruction:

CHAMBERS, W., Assistant Surgeon, from the Naval Recruiting Station, Buffalo, N. Y.

CLARK, G. F., Acting Assistant Surgeon, from the Lan-

caster. Crow, G. B., Assistant Surgeon, from the Navy Yard,

Marfol, Va. HARLAN, T., Acting Assistant Surgeon, appointed an act-

ing a 1-tant surgeon from September 17, 1908

KERR, W. M., Acting Assistant Surgeon, from the Naval Hospital, Norfolk,

MANN, W. L., Acting Assistant Surgeon, from the Naval Hospital, Newport, R. I. SMITH, C. W., Assistant Surgeon, from the Naval Hos-pital, Portsmouth, N. H.

SUTTON, D. G., Assistant Surgeon, from the Franklin. Toulon, A. J., Assistant Surgeon, from the Naval Hos-

pital, Boston, Mass.

ZIEGLER, J. G., Acting Assistant Surgeon, from the Naval Hospital, Pensacola, Fla.

Births, Marriages, and Deaths.

Born.

TRUBY.—In San Francisco, California, on Sunday, September 13th, to Dr. Albert E. Truby, Medical Corps of the United States Army, and Mrs. Truby, a daughter.

Married.

AUCHINCLOSS--NEWLANDS .-- In Franconia, New Hampshire, on Tuesday, September 29th, Dr. Hugh Auchincloss, of New York, and Miss Frances Newlands.

CAMELON—HARTWELL.—In Detroit, Michigan, on Tuesday, September 15th, Dr. Thomas P. Camelon, and Miss

Edith Leroy Hartwell.

HILL—ATWATER.—In Poughkeepsie, New York, on Sat-urday, September 19th, Dr. Eben Clayton Hill, United States Army, and Miss Lucy Lovell Atwater.

States Army, and Miss Lucy Lovell Atwater.
HUNTINGTON—STANLEY.—In Washington, D. C., on
Wednesday, September 23d, Dr. Philip W. Huntington,
United States Army, and Miss Elizabeth Stanley, sister
of Dr. A. C. Stanley, United States Navy.
Morgan—Andrews.—In Washington, D. C., on Friday,
September 18th, Dr Francis P. Morgan and Mrs. Elizabeth Addition

beth Andrews.

SINGER—VAN ARSDALE.—In Pueblo, Colorado, on Tuesday, September 15th, Dr. W. F. Singer, and Miss Bessie Van Arsdale.

THAYER-HILL.-In Belgrade, Maine, on Wednesday, September 16th, Dr. Nathan Pulsifer Thayer, of Brooklyn, New York, and Miss Gertrude Mary Hill, of Brookline,

VINCENT-KNOX.—In Ludington, Michigan, on Thursday, September 17th, Dr. Frank W. Vincent, and Miss Frances G. Knox.

Bell.—In Haverhill, New Hampshire, on Wednesday, September 16th, Dr. John Bell, of Chelsea, Massachusetts,

aged seventy years.

Bradin.—In Newark, New Jersey, on Thursday, September 24th, Dr. Edward De Lancey Bradin, aged fiftyfour years.

Brown.-In Springfield, Massachusetts, on Saturday, September 19th, Dr. John P. Brown, aged seventy-five

Edson.-In Cortland, New York, on Saturday, September 19th, Dr. H. S. Edson, aged seventy-three years.

Epley.—In New Richmond, Wisconsin, on Wednesday,

September 23d, Dr. F. W. Epley. Grant.—In Richmond, Indiana, on Monday, September

21st, Dr. George H. Grant. Guerin.—In Columhus. Ohio. on Tuesday, September

GUERRN.—In Columnus. Office on Tuesday, September 15th, Dr. Zophar F. Guerin, aged eighty-eight years. Harrison.—In Richmond, Virginia, on Sunday, September 20th, Dr. Jacob Prosser Harrison, aged seventy-four

HEGEMAN.-In New York, on Wednesday, September

Hegeman.—In New York, on Wednesday, September 23d, Dr., John A. Hegeman, aged fifty-six years.
HUNT.—In Leipsic, Indiana, on Tuesday, September 22d, Dr. F. P. Hunt, aged fifty-eight years.
JUST.—In Syracuse, New York, on Sunday, September 13th, Dr. John A. Just, aged fifty-four years.
LATIMER.—In West Palm Beach, Florida, on Saturday, September 26th, Dr. Charles E. Latimer, aged seventy-eight west. eight years.

eight years.

McBean.—In Detroit, Michigan, on Wednesday, September 16th, Dr. James C. McBean, aged forty years.

Pardee.—In Ashtabula, Ohio, on Friday, September 18th, Dr. W. C. Pardee, of Cleveland, aged sixty-five years.

WILDER.—In Newark, New Jersey, on Friday, September 18th, Dr. Alexander Wilder, aged eighty-five years.

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Original Communications.

THE MECHANICOBIOLOGICAL STANDPOINT IN MEDICAL PROBLEMS.

> By Jonathan Wright, M. D., New York.

I .- The Physical Processes in Immunity and Infection.

In returning again to urge the advantage to be secured in medicine from a point of view in biology that comprehends in its sweep of vision the field of physical phenomena, in which of late so much advance has been made both in theory and demonstration, I only join in a sentiment which is every day becoming more widespread among progressive men. This growing appreciation of the unity of physical and biological science seems to render any further peroration on my part superfluous, and I must seek a more valid reason for resuming the subject of physical laws in vital processes. It is in fact a two fold reason. First-I desire to summarize in the briefest manner possible what I have already presented at length, chiefly in this Journal. Secondly—I wish to refer to such additional facts as have been noted in fields bordering on the domain of medicine proper, especially such as are suggestive and helpful in the exploration of that domain itself.

It has been shown that dust or inanimate matter passes through the tonsillar epithelium.1 It has been shown that oil globules, at once saponified when applied, also readily pass." It has been shown that bacteria of the same size as the dust and oil globules do not usually pass, though constantly in contact with the epithelium of the tonsillar crypts. It has been noted that dust (carmin) particles when applied pass through the layer of bacteria on the surface and on into the tonsillar structure without carrying in any of the bacteria.3 Yet we know that under certain conditions bacteria, especially the pathogenic bacteria, do pass through the epithelium both of the tonsils and of the intestines. I have attempted to show from collateral evidence that this action probably arises from the difference between the potentials of surface tension of the epithelial cell on the one hand, and of that of the bacterium and the dust particle on the other. Since the one

is a living colloid state of matter, and the other is so called inert matter, we could hardly expect any other experimental result than has been obtained. How has this distinction arisen in the animal organism? I have attempted to show that the one kind of matter being often harmful and the other kind of matter usually harmless evolution, by natural selection or otherwise, has stepped in, and in the phenomena exhibited by the tonsil we find evidences of its influence.3

I have referred to the experiments of Loeb as furnishing a possible physical explanation of just how the difference of potential comes about, where-by at one time the *Streptococcus* or the *Staphylo*coccus pyogenes, for instance, is excluded and at other times (cold taking, infection, etc.), it is allowed to enter. For, knowing as we do that these germs and perhaps others are more or less constantly found on the surface of the tonsil in health, and beneath the surface in disease, we must have some sort of an explanation of how this surface tension may be made to vary. Loeb, by passing a current of electricity parallel to but not touching a nerve trunk induced a current in the nerve, electrolytic as it appeared, since he showed that certain alkaline salts, by ionic convection, arose at the terminal filaments of the nerve. With his further demonstration that these salts are associated with the stimulus whereby the muscle contracts we are not directly concerned. If we are allowed to conclude that the ions of these salts arise at the filaments terminating in the peripheral cells, a suggestion of which we may find in the saponification of fats on the surface of the intestine, and on the tonsil in my experiments, we can readily understand how the surface tension might be altered by a molecular disturbance of the sympathetic nerve system which we have long recognized as lying at the basis of cold taking and some other infections. This falls in so well with what we know from clinical experience, pathological observation and experiment, that we may look upon it as highly probable the thing comes about in the way I have outlined here and more fully developed elsewhere.

In watching under the microscope for evidence that the carmin granules enter the epithelial cells in their path to the deeper lymph channels, I was unable to see that they did so. In fact phagocytosis during quiescent conditions of the tonsil does not seem to take place in the superficial regions of

Condale: Archa, fur Laryngologic, vii, p. 90; Hendelsolin Discon, viii, p. 456 Wight New York Meshcul Journal, January 6, 1906. Wright: Pudem, January 20, 1906.

⁴Wright: Ibidem, March 23, 1907. Weight Ibidem, August 8, 1908. University of California Publication. December 3, 1905.

the tonsil which furnished the fields of my observations. It would seem that the forces which take the carmin granules beneath the surface are those with which we are familiar under the name of capillary attraction, but as I hope to show elsewhere the action is more complex.

"The assimilation of a poisonous protein which leads to the destruction of the cell with which it becomes united is believed to be on all fours with the assimilation of a nutritive protein which leads to the growth of the cell, or its repair after it has undergone the waste which accompanies activity."

Some discriminating power must preside at the gateways of absorption or protoplasm would cease to exist. Indeed it does cease to exist whenever this power is held in abeyance. In considering this question of surface absorption we must consider the phylogeny of the function. We must think of that simple organization of protoplasm, as in the protozoa where there is no intestinal canal, where every thing which is allowed to pass, passes in unmodified from the environment. There is no saliva nor gastric juice nor pancreatic fluid here to modify things, but selection must be made, from the unaltered material, of that which is nourishing or at least harmless and rejection of that which is harmful, not by the aid of sight or smell; they are the higher specialized functions for food getting and food selection; not by instinct-all these are the products of evolution-, but by the unaided simple reactions of the manifestations of energy, the forces of attraction and repulsion. Bacteria, the internal parasites, even the tapeworm depend directly upon this undifferentiated application of energy.

The recent observations of Albrecht⁸ lend color to the view of the subject which I have urged here and elsewhere. He stained tadpoles tails intra vitam with neutral red and observed that the subepithelial spaces of the connective tissue communicate freely with the surface through interstices of the epithelium. On examination with high penetrating power objectives these interepithelial channels were seen to be bridged across by rafters. These channels, thus partly interrupted, communicate directly with the connective tissue spaces. It was perceived that the cells are not bound to one another by interlacing fibres across these channels, but these rafters are in reality thickenings of the cellular walls and lie in apposition except where they are separated by the interposition of drops of a fluid which is evidently a watery emulsion of a lipoid substance. This varies in physical constitution with the layer of cells in apposition to which it lies—and the surface tension of the drop varies with the chemical constitution (alkalinity?) of the lipoid. This lipoid substance, he concludes from the osmotic currents betrayed by his color granules, is derived through the cell body from the nucleus by molecular interchanges. This process may include a combination of the chemical, the electrical, and the nerve phenomena which play the chief part in the conflict between immunity and infection. The union of the fat compounds with the alkaline salts

in making an emulsion, is, in this connection a suggestive reaction, since the state of saponification is physically largely one of different degrees of surface tension between the fat globules and the alkaline water. It is the lipoid substance lecithin, in cells, as we know from the investigations by Kyes and Sachs' on the cobra poison, whereby a complement is furnished or a link is forged or a stereoscopic valence is formed for the disastrous reception of the poison in the architecture of the cell. Albrecht observed that the part of the fluid which is in close exchange with the basal nuclei of the epithelial cells, exhibits a greater richness of the lipoid substance. This is revealed by the deeper hue given to the fluid at this point, an appearance familiar to all microscopists from observation on post mortem staining. This lipoid substance, having an affinity for the coloring matter used thus, is to be seen most plainly where most abundant. It seems to me no direct observation could be more illustrative of the process I have deduced from my own observation on the behavior of the tonsillar epithelium combined with the correlation I have shown to exist between this and other activities of the living organism.

Much has been written of the behavior of drops of fluid of various chemical constitution when brought into contact one with another. Such artificial liquid cells, by virtue of their surface tensions, exhibit phenomena of exchange of material, of change of form, and of segmentation closely analogous with those of living cells.

In other places I have referred10 to the experiments of Lippman and others, especially of Leduc.

To try to ignore the important bearing these observations have upon vital processes is childish. Wilhelm Roux, the great expositor of mechanical principles applied to vital processes, has taken the matter up" in some observations he has made upon the forces set up on the surface of a drop of chloroform immersed in a carbolic acid solution. When drops of each come within the radius of mutual attraction and repulsion one is reminded not only of the influences existing between conjugating cells, but of the forces exhibited within the cell in the process of mitotic division. Of course, it is only a vague symbol, in its simplicity, of the enormously complex interplay between two colloid drops.

So large a number of observers have detected movements inside the nuclei of cells intra vitam that we are constrained to believe that these are constantly going on. It is difficult to regard such movements as passive. Indeed I do not see how this term can be properly defined or its meaning conceived under such conditions. We must regard it as due to change in the tension of the nuclear structure, as Heidenhain admits.12

We have just seen the reference Albrecht has made to the presence and influence of the globules

thermore there be if a hencelrift, 1004. Nos a and 2. I square again, from Dr. Rosenkam's article (2). "With regard to the biological position of the lipids, we can infer from their general occurrence that they are of fundamental importance for the living organization."

[&]quot;The Origin and Heredity of Matter. The St. Louis Medical William of Matter, 19th.

"Eine Methode der Selbst-Copulation von Tropfen. Zeitschrift für biologische Technik, etc., I. part 1, 1908.

"Plasma und Zelle; in Allgemeine Anatomie der lebendigen Masse, p. 824, in von Eriebelben, Handbuck, to Eutsame des Menschen.

The B is the distance and Photo, by O Recordering Ph. D is the Thirty case, Edy or type 2. "A place to Zin Challeng de proposition in Birchen who I have been controlled in the Controlled Controlled

of a lipoid substance in the epithelial tissue of frogs. He arrived at this conclusion from methods of observation and in fields of scientific activity quite independent of those biological studies of nuclear changes to which I shall subsequently refer. I shall there attempt to show that in all likelihood it is the interrelation of these submicroscopic emulsion drops of lipoid or colloid which creates the movements and presents the pictures of intracellular mitosis and of other internal states of the cell. It is necessary to realize that the same process is going on outside of the cell in the lymph spaces and forms the condition of the circulation in the connective tissue. For here, as Albrecht insists, there are in reality no free spaces which communicate in every direction. The bursting and coalescence of these froth bubbles which consist of a lipoid coating, a sort of film formation, makes a very much coarser froth outside than Bütschli declares is the structure inside of cells, but we may see here shadowed forth, somewhat dimly it may be, not only the interchange between the cell and its environment, but possibly the origin of the intercellular substance, the fluid protoplasmic juice which fills these spaces.

I think it is clear that the distinction of the forces governing these lipoid bubbles depends on the difference in the chemical constitution of their surfaces, and the same may be said of the bacteria among them and of the dust particles. With the protoplasmic particles it is a difference of chemical constitution so subtle and so labile that it defies analysis; and evidently so minute are the divisions of matter that the terms chemical and physical lose their distinction. The fixation, the adsorption, the "complement" here we see is a dynamic one, apparently identical with forces we know as electromagnetic. Heidenhain, in referring to the coloring experiments of Ehrlich, probably had in mind this conception. He introduced basic aniline colors into the circulation, and it was observed that the nerve tissue alone, rich in lecithin and other lipoid substances, took up the stain, but not in the same degree in all organs. This distinction in the stain adsorption of basic compounds is known to depend on the difference in the alkalescence of the tissues, whence it was concluded that in the nervous system according to location and function, a gradation of many degrees of alkalescence is present. Combining this with the more recent experiments of Loeb whereby the alkalescence was shown to be dependent on nerve stimuli, I think the thread of connection between various vital phenomena becomes quite apparent, in view of the exposition I have ventured upon. But this is a conviction which cannot be derived from any one form of exposition however logical it may seem to the expositor. Let us therefore proceed to restate it from other points of view even at the expense of considerable reiteration.

A precipitation or sedimentation of ultramicroscopic dust on the surface of the bubbles, as Greig Smith has suggested for the bodies of bacteria, resulting from chemical or electrochemical action, may alter the degree or the sign of their surface tension and thereby alter the course of events. In the existence of the phenomena of agglutination and precipitation, as witnessed in the persistent work on

immunity we receive another intimation of the importance of a physical view of vital processes. Precipitation of insoluble dust upon the bacteria or the cell or upon the ultramicroscopic bubbles which compose them, or of new atoms upon an already complex molecule, creates a new dynamic equation, one of whose varying integral factors is the mass of the particle. This may be a very faulty way of expressing my meaning from a mathematical point of view, but it will serve to identify the influence of one common factor in vital processes and in simpler chemical actions.

Moore and Roaf18 have shown the affinities of the cells other than the red blood cells, for potassium and the phosphates and the lack of it for sodium and the chlorides. This distinction they ascribe not to the cell membrane, but to the internal mechanism of the cell; that is, the currents back and forth do not obey such osmotic laws as we have been able to deduce from the action of membranes on fluids outside of the body. They find there is a point of equilibrium, not identical with that of equal saturation, beyond which these attractive forces do not act. The cell by selective action draws to itself a large number of potassium and a small number of sodium ions, and there is an index of saturation for each, varying somewhat in different situations and under varying conditions. We have seen the indications of the same law governing the bacterium at the surface, the same equilibrium has been pointed out" for the tonsillar crypt, as for the liver cell and the kidney cell bathed in the fluids of their environments. The living colloid of the kidney cell acting on the inert crystalline molecule of potassium acts differently through its membrane than water through a dead membrane. The inert crystalline molecule of potassium and the dust particle have different sorts of tension from the white blood cell and the bacterium. The potential index of the surface tension therefore depends on the internal chemistry of the particle. One is very simple and the other enormously complex. But it also depends on its mass, its size.

Through observation by ultramicroscopy on the physical states of the colloid solutions of the metals, but especially through the remarkable mathematical demonstrations of Professor J. J. Thomson in his Corpuscular Theory of Matter we have become familiar with the electric energy on the surface of minute divisions of matter setting at defiance the law of gravitation. Whether, like the smile on the cat, the electric charge persists after the matter has disappeared it is not for us to say until the physicists have all come to that way of thinking. What we may gain from this most abstruse of investigations is a realization that the charge dominates ultramicroscopic bits of matter with rapidly increasing completeness, the more minute they are.

But we may receive another hint from Thomson's work. It seems probable that the corpuscles, whatever they are, carry the charge of electricity from atom to atom in solids just as ions act as vehicles of the convection of electricity in fluids.

¹³Biochemical Journal, January 22, 1908

¹⁴Wright, Medical News, March 14, 1905

[&]quot;Zsigmondi: Zur Erkentniss der Celleite.

It has been shown by chemists that changes of color in some of the benzol compounds, as exhibited by spectrum analysis, probably are due to the vibration of some of the atoms from one combination in the molecule to another, a sort of intramolecular pulsation, owing to some very slight change in the environment. This results in the changing of color without the destruction of the molecule. By a shifting of an atom or a group of atoms, which may be a very complex group, the ether is set to vibrating to a different tune, and our retina sends a different impress to the brain. Much of this apparently goes on in the "living" molecule.

The reaction of colloids to kataphoresis is highly significant when taken in connection with this pul-

sation of the benzol molecule.

"One colloid (for example that of a metallic sulphide or that of certain of the oxides) goes to the cathode and is therefore negatively charged (in relation to the water in which they are suspended). Others such as those of the hydroxides of the high atomic metals are positive and go to the anode. A third class finally, when in an entirely pure condition are nonelectric but take, in the presence of acids or alkalies, respectively a positive or a negative charge. It is amphoter. To this class belong albumin and gelatin." We see at once that a very slight change in the environment of a cell might set up an important physiological change in the protoplasm, and the return to its previous condition would constitute that oscillatory vibration upon which depends the manifestations of life.

It is impossible to advance very far into the secrets of immunity and infection without assuming this mechanicobiological standpoint. It is desirable in conformity with the subtitle of this paper to point out how delicate may be the chemical change wrought by a nerve current whereby the surface tension is affected and a different relationship established between a bacterium and a contiguous human cell, and also to indicate how this function

is connected with that of cell division.

44 WEST FORTY-NINTH STREET.

THE UROLOGICAL DEPARTMENT OF THE GER-MAN DISPENSARY,

· Including the Report of the First Season's Activity.

By Frederic Bierhoff, M. D.,

New York,
Professor of Contourney and Veneral Diseases, New York
School of Clinical Medicine; Attending Surgeon, Urological
Distance Contourney, Dispersion, et

When the writer, in 1902, entered the German Dispensary, all cases of genitourinary diseases (they consisted chiefly of gonorrhea and stricture) were treated in the dermatological department, as is the custom in the majority of dispensaries in this city. The class in which the writer had the privilege of working was in charge of the late Dr. I. P. Oberndorfer, who was kind enough to turn over all cases of genitourinary diseases to the writer for treatment. There had never been any provision made in

the old dispensary building for a separate class in genitourinary diseases, and the writer was, therefore, compelled to make use of the only room which could be placed at his disposal—a very small, dark room, which had formerly been used as a dressing room for the patients of the dermatological department. The arrangements were, of necessity, of the most primitive sort, and the instrumentarium crude and limited.

Microscopical examinations of suspected secretions had to be made at the home of the writer, and whatever sterilization was necessary was made by means of a small gas burner and cake tin, in the already all too small and stuffy room. When the German Dispensary left its old home in Second avenue, all of its wealth of clinical material was turned over to its successor there, the Deutsche Poliklinik. When it moved into its present quarters, the department of urology was still a subdivision of the dermatological department, and was given one of the rooms set aside for this department, which, it was thought, would be sufficiently large to meet all requirements. At first it was, too, as a completely new clientèle had to be built up. As time has passed, however, and the work of the department has grown, it has been found that more room was required, and a second room adjoining the firstone which is used by the dermatological department for its x ray work—has been placed at the disposal of the urological department when not in use by the dermatological. With the growth of the material and the sharper drawing of lines, the urological department has demonstrated, from the character of its material, that it is in no way related to the dermatological, and since about the first of the present year the two departments have been separated, and the urological now exists as an entity, as it should.

Scope of the urological department: In outlining the work of the urological department, those in charge have aimed to make it not merely a department for the treatment of venereal diseases, but rather one which embraces the diagnosis and treatment of all of the diseases affecting the genitourinary organs, both in males and females. Syphilis and chancroid have been relegated to the dermatological department, where they belong; gonorrhea and its complications and sequelæ to the care of the urological department. In taking up the consideration of the conduct of the urological department the methods will be considered which have been in use in the writer's class during the past year; or, to be more exact, from March 17, 1907, on which date the dispensary was opened, to December 31st.

The main ideas concerning the purposes served by a clinic for the treatment of genitourinary diseases which have been kept in view have been: (1) The treatment of the patients. (2) The keeping of statistics as accurately as possible. (3) Experimentation and research where possible and necessary. (4) Teaching. (5) The instruction of the

patients themselves.

In the management of any clinic, the writer believes that the aim should be not the treatment of the greatest number of cases in a routine manner, but the thorough, conscientious, and scientific treatment of those patients who present themselves in other words, not to try to make a record with re-

gard to the *number* of cases treated, but to try to get results for the patients. In order to do these things certain requirements present themselves, which must be met as completely as possible.

First: There should be a sufficient amount of room placed at the disposal of such a clinic, so that there may be no crowding, and no lack of space and ventilation, and that the utensils and the appliances which are needed may have a place, without encroaching upon the space necessary for proper work.

Second: There must be a sufficient number of assistants to permit of each branch of the work being

done thoroughly and systematically.

Third: In doing the work the aim should be to do it as well and thoroughly as possible, without, however, encroaching unnecessarily upon the working

time of the patients.

Rooms: There should be two adjoining rooms, one for the examination and treatment of such cases as may be of an infectious nature, and a second for the examination and treatment of such as are not infectious, or such as require the use of special instruments, or appliances, and for the examination and treatment of females and children. In the German Dispensary we have arranged it so that in one room the ordinary treatment is carried out, particularly of those patients with gonorrhea, or its complications, while the other room is reserved, so far as possible, for endoscopies, cystoscopies, dilatations, the use of the psychrophore, for electrical treatment, and for females and children. Both rooms must have proper light and ventilation, and should have a sink with running hot and cold water. In the room in which the routine work is performed, and into which the patients should enter from the waiting room, there should be a desk at which the records and histories are taken; next, a table for the microscope; third, a sink with sloping shelf to provide for the proper draining of glasses, etc.; fourth, a sterilizer sufficiently large to permit of the sterilization of the catheters, sounds, etc.; fifth, an operating chair or table; sixth, a stand containing basins for the various solutions in ordinary use; seventh, an instrument cabinet to contain the instruments in ordinary use; eighth, shelves containing the stock solutions, reagents, etc. Furthermore, hooks for the patients' clothing. The second room should contain, in addition to the sink, an operating table, an instrument cabinet for the examining instruments, such as the cystoscope, endoscope, and electrical instruments, a glass topped table or two, and a wall cabinet containing the electric controllers, rheostats, etc. There should, in addition, be an arrangement with the pathological laboratory to make the uranalyses, and the more intricate bacteriological examinations and culture experiments.

Assistants: For the proper carrying out of a comprehensive scheme of management of a clinic of this character one chief and at least four assistants are required. The chief, who should be a man properly equipped in the special study of genitourinary diseases, must be in general charge of the clinic, and should personally see to or superintend the examination of each new case which presents itself. The first assistant should assume the treatment, under the chief's direction, of all the old cases, and

represent him during his absence. The second assistant should be kept for the purpose of rendering general assistance to both chief and first assistant when required. The third assistant should be at the microscope, and the fourth in charge of the records. The plan followed in the writer's class has been to allow the assistants to rotate monthly in the positions as outlined above. Each new month the assistant who has been in charge of the old cases during the preceding month takes the records. second assistant thereupon takes the place vacated by the first assistant. The third, who was at the microscope, takes the general assistantship, and the assistant who was at the records takes the microscope. In this way each assistant is repeatedly brought into direct contact with each branch of the work, and is made familiar therewith. The assistants should be required to pledge themselves to serve for at least six months, with the understanding that, if their services prove satisfactory, they will be appointed for the subsequent six months.

Examinations: It has been our custom to make a microscopical examination of the discharge in every case presenting itself for examination, at the first visit, and, in case of gonorrheal infections, to microscopically control the secretions at each subsequent visit, until the patient is discharged as cured, or withdraws from treatment. With nongonorrhœal cases the examinations are made until such a time as the secretion is found to be free of bacteria, after which the examinations are not necessarily made at each visit. Any change in condition, however, which appears in the slightest degree suspicious brings with it a microscopical examination. Where a suspicion exists that the prostate is involved, the secretion of the prostate is taken after a previous total irrigation of the urethra, and examined, both with regard to its cellular and its bacterial contents. Should it be found abnormal in any respect it is regularly examined at each visit, until it is found to be free of bacteria, and, later, at less frequent intervals, until it is found to be normal in every respect. This, naturally, entails a large amount of work upon the assistant who is at the microscope, but as he has no other duties it is found to be easily possible for him to make the necessary examinations at each session. Where any doubt exists concerning the infectious or noninfectious character of the secretions, the patient is instructed to stop all treatment until the question shall have been definitely decided. It is our hope in future to be able also to add the examination of urines, where necessary, to the microscopical work already undertaken.

Records: The taking of records is, as stated before, the exclusive work of one assistant. The patient, upon entering the room, if for the first time, steps up to the desk and is given his division card, bearing a number which corresponds to the number upon his history card. The usual questions must be asked and entered, and a superficial examination made by the assistant in charge of the records, for the purpose of making a clinical diagnosis, preparatory to a more exact examination. The form of history card in use at the German Dispensary is as shown here. The purpose of such records should be not only to obtain a correct history of the case

itself, but also to gather accurate statistics, as will be shown by a glance at the card. The card is reproduced in English, although, as our histories are kept in the German language, it is printed in German.

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History card.

Experimentation and research: Each assistant should choose a topic for study, and follow this up carefully, with the idea of publishing the results, and for that purpose all cases coming under the heading of his particular topic for study, should be specially referred to him. Where no topic is chosen, the chief should suggest, or assign one to each assistant, and help, where necessary, in the working out of the study. Each article, before being sent out for publication, should be revised by the chief, and the institution should receive its due credit.

New methods, new drugs, etc., should be thoroughly tested, in an unbiased manner, and the re-

sults published.

Teaching, and the instruction of the patient: Wherever possible, the courtesies of such a clinic should be extended, without charge, to such physicians as may wish to study the methods for the diagnosis and treatment of diseases of the urogenital tract. Furthermore, if the chief, or any one of the assistants should chance to occupy a teaching position in a medical school, it should be his privilege to invite his students to visit the institution. In other words, wherever it is possible safely to do so, the clinical material should be utilized for the purpose of teaching the assistants, or out-

In the teaching of the patient, another side of the possibilities for good of a clinic presents itself. Patients who frequent dispensaries do not come for a sermon on morals, or a tract, but for the quickest possible relief of their physical ailments. who come for the treatment of diseases other than venereal, need no sermons, and upon the venereal patient they are usually lost. It is easy enough to pose as a reformer, from the depths of an armchair, but an entirely different matter to attempt to bring about a reform without being able to suggest an equivalent, or the means for betterment. The rational means for the prevention of venereal diseases seems to be marriage. But the struggling workman, who has often a hard task to keep his own soul and body together, cannot conscientiously enter into matrimony until his wages allow this. He has, however, sexual desires, and is, in a large percentage of cases, of a somewhat stunted moral development. He, therefore, seeks the only relief

of these desires open to him—the public prostitute. It has struck me, during years of service, in various dispensaries, that an appeal to the moral sense of the average dispensary patient, is wasted time and effort. His first consideration is, naturally enough, himself, and it can only be through fear of the effects upon himself, with the consequent loss of the ability to "hold his job," that we may hope to influence the venereal patient. I have often been disagreeably surprised at the callousness shown by the average dispensary patient, with regard to the danger of transmission of his disease to others. Still, we have tried to impress our patients with the fact that they are criminals who, while knowing themselves to be venereally diseased, indulge in intercourse; furthermore, that they must not consider themselves cured until pronounced so, at the dispensary. In order to lend weight to our arguments, we have had printed, in German and English, the following leaflet for free distribution:

GERMAN DISPENSARY,

(Dermatological Department)

Park Avenue and 76th St., New York. GENERAL DIRECTIONS FOR PATIENTS SUFFERING WITH GONORRHOEA.

I. You are suffering with a contagious disease. You must, therefore, be careful to carry out the orders of your doctor exactly, in order that the danger to yourself may be made as little as possible, and the infection of others prevented.

II. Complications develop very easily, during the course of this disease, particularly after sexual intercourse, or sexual excitement, or after drinking beer, wine, or liquors.

III. The absence of a profuse discharge does not mean that the infectious stage of the disease is past. Even in the watery discharge, or in the threads in the urine, the germs may live for a long time after all acute symptoms are gone, thus making it still possible to infect others. Therefore do not consider yourself cured until the doctor tells you so definitely.

IV. Should you, for any reason, have to remain away from treat.

IV. Should you, for any reason, have to remain away from treatment here, then go to some reputable physician, or dispensary, for treatment; tell him the nature of your illness, and follow his instructions until he tells you that you are cured. Never consult "quacks" or these doctors who advertise.

V. Do not resume sexual intercourse until the doctor tells you that you are cured. If you ask the doctors, they will inform you how to avoid infection.

RULES TO BE OBSERVED.

1. After every handling of the parts, do not forget at once to wash the hands well, with soap and water, and to dry them upon a clean towel. Keep this towel separate, for yourself.

2. Do not touch or rub your eyes. The danger of infecting them is very great, and may lead to blindress.

3. Wosh the diseased parts gently, morning and evening, with lukewarm water and soap, drying with a small piece of clean, soft linen (such as part of an old handkerchief). Burn the cloth after using. Sleep alone.

4. The doctors will show you how to apply a small dressing to protect your clothing from the discharge. Wear one of these con-

Take at least one warm, full bath a week, just before g ed. Wear the protective dressing during the bath. After wash out the bath-tub with soap and water.

6. Dress yourself warmly; avoid draughts, exposure to cold and et, and wet feet. Keep as quiet as your work allows. Keep the

Do not touch beer, wine, or liquor at all. Do not drink car-bonated waters. Drink plenty of plain water, or milk. Coffee, or tea, in small quantity, will not be injurious.

8. Avoid spices, such as pepper, mustard, paprika, cloves, cinnamon, nutmeg, or foods containing them. Eat plain, light food. 9. Avoid the company of women. Sexual excitement brings on amply that

10. Come regularly for treatment, and carry out your treatment at home carefully. When in doubt ask the doctors.

We also warn them against the dangers of promiscuous intercourse, and add that, if at any time, they have the least suspicion of any venereal infection, they must not delay, but come to us at once for examination. We have, therefore, abstained from suggesting the "coitus condomatus test," preferring to rely upon the alcohol test, and that of control examinations for a period following the disappearance of gonococci from discharge and shreds.

We believe that we can best limit the spread of venereal diseases by thoroughly curing our patients.

Routine of work: The routine of work, as we have found it to be most satisfactory, and least time consuming, has been as follows: The patient enters the room and reports to the assistant at the desk, giving his card bearing his history number. The history card is then consulted, and the patient's present condition noted, any changes being entered under the proper date. If discharge is present, the patient passes to the assistant in charge of the microscope, who, thereupon, takes the customary smear, by means of a sterilized platinum loop, and marks the specimen with the patient's card number for examination. After this the patient passes his urine into two glasses, all but the last few teaspoonsfuls into the first glass, the rest into the second, and shows this to the assistant at the records, for his inspection. We have found that this method fully suffices for the determination of the question of the involvement of the prostate in the inflammatory process. Its condition is noted upon the history, and reported to the assistant having the treatment in charge. Whatever changes are present are reported to the chief, who outlines any changes in treatment which he may deem necessary. During this time usually the microscopist has had a chance to examine and report upon the specimen. The treatment is then carried out as required by the case. Should the men in charge of the treatment be busy, the patient awaits his turn until they are at leisure, and the report is thereupon given to them. In the case of new patients, the examination is made by the chief, or by an assistant under his direction. The more complicated examinations, such as endoscopy, cystoscopy, etc., are made by the chief, or by one of his assistants under his supervision, and it has been our custom to demonstrate every point, or condition of interest, to all the assistants.

Treatment: Gonorrheal cases have been treated by means of irrigations and injections. For the past several years we have employed (as a test) the solution of the salicylate of mercury, a report of which experiments will be published separately. Irrigations are made with the hand syringe of 150 c.c. capacity. Where the anterior urethra alone is involved, the irrigations are not forced through the compressor muscle, and the anterior urethra alone is irrigated. During the course of a gonorrhœa, the patients visit the dispensary every second day, for treatment. The patients are instructed how to properly inject themselves at home, four to five times daily, and are given the necessary instructions with regard to diet, care of themselves, etc. The irrigations and injections are continued until the discharge has been found to be free of gonococci for at least a week, whereupon the frequency of the injections by the patients themselves is gradually diminished, and the quantity and strength of the irrigations cut down. Should the discharge remain free of gonococci, and gradually disappear, the patient, after a reasonable period of freedom from discharge containing gonococci, is subjected to the alcohol test. Should shreds remain in the urine, these are examined, to determine their freedom from gonococci; then an endoscopy is made, and the remaining pathological changes locally treated by dilatations, as-

tringent injections and irrigations, local applications through the endoscope, etc. Should gonococci reappear after the cessation of injections, then an endoscopy is performed and the diseased points located, the infected glands slit up, and the irrigating dilator of Kollmann employed, or the glands are destroyed by electrolysis. Should the second urine at any time be found to be cloudy, then a total irrigation is made, the patient is instructed to empty the bladder of the irrigating fluid, and the prostatic secretion is gently expressed and immediately examined. After this, another total irrigation is employed. Should gonococci be found to be present, then the total irrigating and the massage of the prostate are continued until the prostatic secretion becomes normal and free of gonococci, and the second urine perfectly clear. Should the compressor muscle offer resistance to the easy injection of the irrigating fluid, then it is anæsthetized by means of the injection of a weak solution of cocaine (one half to one per cent.). Should complications such as spermatocystitis, or epididymitis arise, then, in the absence of febrile reaction, the irrigations are continued and the massage also, this, however, being little more than a slight, gentle pressure, to express the superficial layers of infected secretion. compresses are applied to the inflamed epididymis, the compresses being covered with a layer of oiled muslin or silk, suspension being made by means of the Teufel suspensory. The patients are instructed to remain in bed between visits, and, should their condition not permit this, are referred to the hospital for treatment during the acute stage. After the subsidence of the acute stage, the treatment, as before outlined, is carried on.

No instrumentation whatever of the urethra is permitted in any case, whether gonorrheal or non-gonorrheal (with the single exception of the irrigating dilator), without a preliminary irrigation of the urethra with an antiseptic solution. All instruments are sterilized before use, those which can be boiled, by boiling; cystoscopes and similar instruments by immersion in formalin, alcohol and water solution. All instrumentation is followed by another irrigation with an antiseptic solution. Furthermore, it has been our custom, as a routine measure, to put patients who were subjected to instrumentation, under the internal use of one of the formaldehyde compounds.

Vesical cases are never treated without first having been subjected to a cystoscopical examination, in order to determine the exact condition, irrespective of the symptoms.

Cases which come under the general heading of sexual neurasthenia, are never treated until after a thorough examination has been made, both of the prostate, seminal vesicles, and the urethral canal, for we have found that, in the majority of instances, the neurasthenia is simply the expression of a palpable change at some point of the genital tract.

During our first year of service in the new dispensary (in reality only nine and a half months) the number of our patients has, necessarily, been small. This has been due to the facts first, that the clientèle which we had in the old dispensary had been lost to us, because of the fact that an interval of one year had elapsed between the closing of the

old and the opening of the new dispensary, and second, by its location in a district which is already, in great measure, covered by other well known hospitals and dispensaries. We have had, therefore, to build up an entire new clientèle, against rather heavy odds. In spite of this fact, however, the class has steadily grown. The total number of patients treated in the writer's class, was 173, the total number of visits 1,489.

We, as also other dispensaries, have found trouble in getting patients to come to us until we could pronounce them *definitely* cured, for, with the working man, the absence of a visible discharge seems enough to constitute a cure for him. This is not to be wondered at, for the absence from his work, which attendance at a dispensary entails, often means the loss of his position and the means of his livelihood. We have always tried, therefore, to have patients return for treatment only as often as the character of the case absolutely demanded. A gratifying feature to the writer has been the fact that a fair percentage of the cases coming to us have remained with us until we could definitely pronounce them cured, or, at least, until their condition was such that the gonococci had disappeared and the cases were clinically well.

| Diagnosi∼. | Discharge d, cured, | Discharged, improved. | Discharged, unimproved. | Sent for diagnosis. | Transferred to other departments. | Transferred to hospital. | Died. | Withdrew from treatment, improved. | Withdrew from treatment, unimprove | Carried over to 1908 |
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| Balanitis | 1 | | | | | | | | | |
| Balanitis and phimosis | I | | | | | | | | 1 | |
| Condylomata, acuminate, of penis | 3 | | | | | | | | | |
| Control examinations | | | | 2 | | | | | | |
| Cystitis colli, catarrhal | | 1 | | | | | | | | |
| Cystitis corporis, acute suppurative | | | | | | | | | 1 2 | |
| Cystitis corporis, chronic, suppurative, with contraction of bladder | | | | | | | | | | |
| Cystitis corporis, chronic, suppurative, with pyelonephritis (tuberculous?) | | | | | | | | | | 1 |
| Cystitis corporis, chronic, suppurative, with cystocele and prolapse of uterus | | | | I | | | | | | |
| Diabetes | | | | | 1 | | | | | |
| Dysuria | | | | | I | | | | | |
| Eczema, of penis | | | | | 1 | | | • • | | |
| Gumma, of testis | | | | | | | | | | 1 |
| Hæmaturia of renal tumor | | | | | | 1 | | | | |
| Herpes, progenital | | | | I | | | | | | |
| Hydrocele | | 1 | | | | | | | | |
| Hypertrophy of prostate, with retention of urine, and acute suppurative cystitis. Incontinence of urine, from paralysis of vesical sphincter | | 2 | | | | 1 | | | 3 | 2 |
| Lues, secondary | | | | | 1 | | | | | |
| Neurasthenia, sexual | | 8 | | | 2 | | | | 4 | 7 |
| Papillomata, vesical, multiple (carcinoma?) | | | | | | 1 | | | | I |
| Paracystitis, chronic, with hyperæmia of bladder, and papilloma of urethra | | | | 1 | | | | | | |
| Paraurethritis, suppurative, nongonorrhœal | | | | | | | | | | |
| Phin 818 Pollakiuria | | | | | | | | | ī | |
| Pollakiuria of anteflexion of uterus, with hyperæmia of trigone. | | | | 1 | | | | | | |
| Pollakiuria of enteroptosis | | | | 1 | | | | | | |
| Pellakuria of retention of urine due to spasm of compressor ureth 1 | | | | I | | | | | | |
| Pollakurna of catarrhal urethrocystitis | | | | | | | | | | 1 |
| Protatile, calculous | | | | | | | | | | - 1 |
| Pretatis, calculous Ren mobilis, with catarrhal cystitis colli | | | | | | | | | 1 | |
| Retention of urine, of tabes dorsalis | | | | | | | | | 1 | |
| Retention of urine, partial, with stricture of urethra and suppurative cystitis. | | | | 1 | | | | | 11 | |
| Stricture of urethra | | 4 | | | | | 1 | | 1 | |
| Tumor of testis | | | | | | - 1 | | | | |
| Ulcers of penis inguinal adenitis | | | | | 1 | | | | | |
| Ulcer durum of penis | | | | | 3 | | | | | |
| Ulcer durum of penis, and lymphangitis of penis, and paraphithesis | 6 | | | | 1 | | | | | |
| Urethritis, acute, gonorrhœal, anterior | - D | 1 4 | | | | | | 1 | 5 | 2 |
| Unethorn, acute government, and epididyputes duplex, funiculties, and spermato- | | 4 | ٠. | • • | | 1 | | | 3 | |
| evenus, generalizational | | | | | | | | | 1 | |
| Urethritis, acute, gonorrheal, and subacute prostatitis, nongonorrheal | 2 | | | | | | | | 2 | |
| Unchingtry and to represent and the second and the | 1 | | | | | | | | | |
| Urethritis, chronic, generiheal, and prestatites, chronic, generiheal. | 1 | | | | | | | 1 | ~ | 1 4 |
| Urethritis, chronic, gonorrheal, and prostatitis, chronic, nongonorrheal | | 2 | | | | | | | 1 | 1 |
| Crest retail, chrome, gonorrheal, and ulcers durum of urethra | | I | | | | | | | | |
| Urethritis, chronic, gonorrhœal, and prostatitis, chronic, gonorrhœal; epididymitis, | | | | | | | | | | |
| Properties and the second seco | 1.1 | 8 | | | | | | | | 1 |
| Ureth to chronic, anterior, glandular, nonce unriheal | 11 | 8 | | | | | | | 3 | |
| Brother of para and green to yet to each dynamic, pungor or heeal. | 1 | | | | | | | | | |
| Unity is all para, and every bayets in a cribdymitis, noncontributation, chronic, nongenorthosal, and ulcer of penis | | | | | | | | | 1 | |
| Urethritis, chronic, and vulvovaginitis | | | | | 1 | | | | 1 | |
| Creth star caterbal Variance (ett. ale) | | 1 | | | | 2 | | | 2 | |
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⁵³ EAST FIFTY EIGHTH STREET.

THE FIRST AMERICAN MEDICAL SCHOOL.*

By James J. Walsh, M. D., Ph.D., LL.D.,

New York,

Dean and Professor of Nervous Diseases and of the History of Medicine at Fordham University School of Medicine.

In recent years there has been a growing interest in the history of medicine here in America. Physicians have not had more leisure, but have cared to devote time that used to be given to reading what had no connection with their professional or scientific work, to the story of how the development of present day medicine has come about. This is especially true for times that make epochs in medical education, because it is realized that the uplift of the medical profession of this country depends to a greater extent on the education which physicians obtain than on any other factor. Here in America it has usually been presumed that the history of medical education dates back to only a little before the foundation of our government. Recent interest in Spanish American affairs, however, has shown that important additions to the history of medical education on this continent, proving that it extends back for nearly four centuries, should be made.

Our medical histories ordinarily announce that the first courses in medicine were delivered in Philadelphia in 1765 by Dr. Morgan and Dr. Shippen. During the next five years by the addition of other professors this became a complete medical school. Nearly two centuries before this, however, according to one of the chroniclers in 1578, according to another in 1580, a chair of medicine was established at the University of Mexico. This university had been given a charter more than a quarter of a century before, in 1551, the same year that a charter was also granted by the Spanish crown to the University of Lima in Peru. Its first courses were not given, however, until 1553. Chairs in the arts and philosophy and law and theology were established at once. The chair in medicine did not come for a quarter of a century, though there had been some interest in medical education before this. doctors in medicine whose studies had been made at universities in Spain were received at the University of Mexico within two years after its foundation-in 1554. In the city of Mexico itself there were a number of educated physicians from Spain at this time, and indeed the first book ever published in medicine in this country was published in the city of Mexico in 1570. Its title was Opera Medicinalia, by Francisco Bravo. Another book, Secretos de Chirurgia, had been written in this country by Dr. Pedrarias de Benavides, and was published at Valladolid in Spain in 1567.

With all this of interest in medicine in Mexico it is not surprising that a chair of medicine should be established and that a series of professorships should gradually be established in connection with it until there was a complete medical school in our modern sense of the term. We still have the names of all the professors who occupied the principal chair of medicine at the University of Mexico from the end of the sixteenth down to the nineteenth century. Flores, in his History of Medicine in

Mexico from the Time of the Indians down to the Present Day, tells the story of the rise and progress of this Mexican medical school, the first on the American continent. The first professor of medicine was Juan de la Fuente, a graduate of the University of Salamanca, who was considered one of the distinguished medical scholars of the time. The inaugural lecture according to one good authority was delivered June 21, 1578. The salary of the professor in medicine was paid partly by the Viceroy of Mexico and partly by the crown of Spain. We usually do not think of Philip II who occupied the Spanish throne at this time as a liberal patron of education, but such he was for the Spanish colonists. This is one of the surprises of Philip's character that has been brought out by recent historians.

As a matter of fact the Spanish colonies encouraged by the Spanish home government, very early in their history developed certain features of scientific education and professional life that were not to come in English America until several centuries later. On Columbus's second expedition there was a Doctor Chança who had been physician in ordinary to the King and Queen of Spain and who joined the expedition as a sort of scientific attaché. On his return he wrote a volume of scientific observations that he had made in America many of which as might be expected related to medicine. Dr. Ybarra, of New York, has recently published a brief résumé of this first book containing scientific observations with regard to America in the Journal of the American Medical Association. Early in the sixteenth century the Spanish writers published volumes on the habits and customs and folk lore of the Indians and especially on Indian medical practice. It is usually supposed that the anthropology and ethnology of the Indians only developed in the nineteenth century, but there are many important books on these subjects published in Spain and the Spanish colonies in the sixteenth and seventeenth centuries.

It is not surprising then, to find that even the establishment of this chair of medicine in the University of Mexico in 1578, was not the first organized effort to teach at least the practical side of medicine that was made under the Spanish régime. Within a few years after the establishment of the city of Mexico a definite attempt was made to give such medical training (even though a full medical course was impossible) as would enable both the colonists and the natives to have the benefit of trained skill at least for the cares of wounds and injuries of various kinds. By a decree of the Ayuntamiento or Council of the Viceroy, issued January 13, 1525, more than half a century before the foundation of the chair of medicine, a barber surgeon was voted a salary to teach his art to others so that there might be some training for those who wished to care for the injured, or those in need of surgical assistance. It would remind one very much of our public lectures on First Aid to the Injured, and yet it probably included much more of medical science as it was then taught than we give in these courses.

^{*}Paper read at the semiannual meeting of the Faculty of Ford ham University School of Medicine, 1908.

¹Historia de la medicina en Mexico des de la epoca de les Indios hasta la presente. Por Francisco Flores. Mexico, 1886

The first teacher in this department was Francisco de Soto who bore an honored name, though this is

all that we know of him.

According to Flores there was not long afterward some medical teaching of a more ambitious character at the College of Santa Cruz in Tlaltelolco. This was a special quarter of the city of Mexico mainly inhabited by Indians in which a school for the benefit of the natives was established in 1536. At this school were trained many of those who afterwards became alcaldes and other officials of the native villages in the neighborhood of Mexico. In general the college seems to have been established with the idea of training natives who might occupy official posts of various kinds under the Spanish colonial government, yet closely in connection with the natives. It was felt that such men would rule their fellows much more understandingly than a foreigner could. One means of enabling the young men thus trained to get the confidence of their native subjects was to give them a sufficient knowledge of the elements of medicine to enable them to care for the natives whenever a regular physician could not be obtained. The teaching of medicine was done by regular physicians of the city, graduates of Salamanca and Valladolid, who had emigrated to Mexico and who were paid for this purpose by the Spanish authorities.

Five years after the foundation of the first chair in medicine-in 1583-a lectureship in this subject meant to provide some subsidiary instruction was added. It was not until 1598 that a second professorship in medicine was established and a division of the teaching made. To this second professor was entrusted the teaching of the principles of therapeutics. A chair of botany had been founded in connection with the university about the same time as the first professorship in medicine was added, and medical students were supposed to take prolonged courses in this subject. In 1583 dissections were begun, though this subject was not taught exclusively for the benefit of the medical students. It was not easy to procure bodies at this time, and much of the dissection was done on animals, and students from other departments of the university shared in the instruction. Before the end of the sixteenth century, however, human dissections began to be regularly done. Another set of subjects that the medical student was expected to take, is of interest to us because of the change of view in the matter that has come. This was the department of mathematics and astrology the lectures of which medical students were expected to attend, because the stars were still supposed to have an influence on human constitutions, and the doctor was supposed to tell something about his patients' illness and its possible prognosis by consulting the stars.

Of course it seems very foolish to us that astrology should have maintained a hold for so long on rational intelligencies but it must not be forgotten that at this time and even later men like Galileo and Kepler still firmly believed in astrology as the science of the influence of the stars on worldly events and especially on men's lives. At least they were quite willing to accept handsome remuneration for the horoscopes which they drew up for wealthy and rocal chem. Their astroprognostic got many a jolt, however, and perhaps never more so than when

Galileo made the horoscope of his friend the Grand Duke of Tuscany while he was ill, and announced that he would live for many years and accomplish many glorious things, though he died twenty days later. We have so many suspicious things behind the thin glass of our houses at the present time from uric acid to the latest fashionable remedy which will be given up next year, that it would seem better for us not to throw stones at the show cases of the earnest serious students of the sixteenth century, who undoubtedly were mistaken in their acceptance of the influence of the stars on human life and destiny, but who at least made this an excuse for the study of the sciences of mathematics and astronomy which cannot have been without a good influence.

A review of the subjects of study in the medical school of the University of Mexico at this time is of interest. A brief but comprehensive review of the course is given in Flores's History already quoted. It is all the more interesting because it was practically a replica of the teaching at the University of Salamanca at this time. It was founded almost entirely on Hippocrates's teachings though the study of Galen was only second to that of the great Greek father of medicine. This devotion to the ancients may at once condemn it as hopelessly unprogressive in the minds of certain overmodern physicians, but it must not be forgotten that at the end of this same century—we are talking of the beginning of the seventeenth century-Sydenham in England (the English Hippocrates) and a little later Boerhaave in Holland whom we are accustomed to look upon as distinguished influences in medicine and to whom we owe much that is precious of incentive to clinical observation and who were themselves magnificent observers, declared that the study of Hippocrates is "most profitable to physicians," and insisted that his writings should occupy much of the student's time and the practitioner's spare hours.

but if the Mexican professors of medicine were at all like Boerhaave and Sydenham then they neither attached themselves nor their students so exclusively to Hippocrates as to nullify personal observation. The course outlined is not only interesting and suggestive but it gives a very good idea of the comprehensive view that the physicians of the time took of the details of medical education. In the first year the students were required to take up Hippocrates's treatises De Elementis, De Temperamentis, De Humoribus, De Anatomia, De Facultatibus Nativis, and De Pulsibus et Urinis. This portion of the curriculum included the consideration of all the underlying conditions of disease as far as they were known at the time. There was besides an introduction to pathology, for all diseases were supposed to be due to the humors of the body. Whenever we are inclined to make little of the lack of progressiveness of old time physicians, it is as well to recall that the humoral pathology which was taught at that time is still popular pathology. Virchow declared shortly before his death that the idea of cellular pathology had never made any headway among the people. People are still bilious or their blood is poor or they have a catarrh, in a word there is something the matter with some humor or

secretion of their body. Even physicians in talking

Hippocrates constituted the basis of the lectures,

to patients still have to revert to this old fashioned terminology in order to make themselves understood, though it is doubtful whether in doing so

they do not do more harm than good.

Of course all of this first year work was mere book learning. Anatomy was taught from books, and there was very little objective about the teaching. In this respect it must not be forgotten that objective medical teaching except for human anatomy which came in the second year in Mexico is a comparatively recent introduction to our American medical schools. In taking up Hippocrates's Treatise on the Pulse and the Urine there was perhaps some practical applications of the propositions set down, but in general this first year's work seems to have been the theoretical introduction that our lecture system of a half a century ago provided for medical students during the nineteenth century.

In the second year the teaching became more practical and objective, though theoretical questions still occupied much of their attention. In this year they studied Hippocrotes's treatises De Differentiis Febrium, De Arte Curativa, and De Sanguinis Missione, that is they learned to distinguish fevers from one another from printed descriptions of them, learned the theoretical basis of therapeutics, and discussed the indications for bloodletting. During this year special attention was paid to human anatomy. They had to do dissection, though most of it was on animals. At this time the pig, whose internal organs resemble very closely those of human beings in many respects, was a favorite subject for dissection in the medical school. They had to at least attend demonstrations on the human cadaver and every one was expected to have seen the dissection of at least two human subjects.

In the third year they studied the Aphorisms of Hippocrates and his book Quos et quando oportet purgari and the Ninth Book of Rhazes. The Aphorisms of Hippocrates are practical remarks with regard to disease, the connections of symptoms, methods of treatment and prognostics. Purgation as studied from the standpoint of Whom and When the Doctor Ought to Purge was an important subject at a time when they thought the most important thing in the world was to get the materies morbi out of the system either by bloodletting or through the emunctories. It is not surprising that Rhazes, the great Arabian physician, who practised at Bagdad in the tenth century should have been placed just next to Hippocrates, for Arabic influences were strong in Spain, and Rhazes eminently deserved the place given him. It may be recalled that he was the first one to give us a definite description of the smallpox and a distinction of measles. He has some excellent chapters on Diagnostics and Rational Therapeutics.

In the fourth year they returned to complete the study of Hippocrates's Aphorisms and devoted considerable time to his De Crisibus and De Diebus Decretoriis, that is on the crises of diseases and the critical days of illnesses. It is not surprising that they should have thought so much of Hippocrates's Aphorisms. Every man in medicine whom we look back to as an authority and who did such work as to make his name and influence remembered, read Hippocrates's Aphorisms with delight, applied them

to his own cases, and usually commented on them for the benefit of others, not so much with the thought of adding anything to them as to making their application clear. This work was Paracelsus's favorite reading, and though he condemned over devotion to the classics of medicine, he wrote a commentary on it. It was one of Sydenham's favorite volumes, and Boerhaave returned to it again and again and his largest work is a commentary on this of Hippocrates. Most part of the fourth year in medicine at the University of Mexico, however, was taken up with Galen's De Methodo Medendi, a very important contribution to therapeutics in its own time, whose significance founded on observation has never been quite lost. It has formed the favorite reading of leading physicians even in the last century or two.

Taken all in all the medical course of the University of Mexico thus arranged gave no mean introduction to the practice of medicine. At the beginning surgery was not admitted into the course and anatomy was studied only for medicinal purposes. The reason for this serious omission was the persistence of the old disagreement or schims as it may well be called between the physicians and surgeons. During the fourteenth century by a fatal degeneressence of opinion, internists thought it beneath their dignity to use the knife, and considered surgical intervention and manipulations as the work of handicraftmen. They passed over the doing of all operations to the barber surgeon, some of them even ostentatiously tying their hands behind their backs and directing the barber surgeon in his work. Surgery was for years taught as much apart from the medical schools as dentistry now is with us, and this old custom survived in Mexico. We have already seen that a special arrangement for the training of barber surgeons and their assistants had been made earlier in Mexican history and this doubtless continued. During the seventeenth century, however, human anatomy came to be studied with more zeal, and then surgery was introduced into the medical school on a footing only slightly lower than that of medicine.

The methods of examination are of interest to us especially at the present time when we are just about to hold our own. The examinations were held by public disputations. A series of propositions with regard to medical subjects was selected at the meeting of the faculty, and the candidate for a degree of doctor of medicine was expected to defend them. These propositions were posted publicly twenty-four hours before the disputation, or oposicion as it was called in Mexico, was to take place. When his turn came the medical student was expected to discuss one of the propositions and state what he knew about it. Various professors then objected to his presentation of the subject and suggested difficulties which he had to answer. His method of answering these constituted the material for the judgment as to whether he should pass the examination or not. His passing depended on a vote of the faculty which was all present. The examination of each man occupied an hour and sometimes more. Such an examination after all as enabling the faculty to judge of the character of a man's intelligence and to realize just how he tackled

a question and responded to difficulties, some of which at least he would not have anticipated, is not such a bad way of estimating the depth and solidity of a man's education, and might be considered by some people preferable to the written methods which may include more, yet often only encourage

cramming for examinations. The preliminary education required for admittance to the medical school is of interest at the present moment when this subject is to come up for special discussion at this meeting of the faculty. Students were only allowed to enter the medical school after having made studies in the undergraduate department and completed at least three years. The medical student had to know Latin well, for all the textbooks of medicine of the time were written in this language. Some studies in botony, in mineralogy, and in climatology were included in the undergraduate course so that there was some preparation for their medical studies. In general, however, they had to study logic, grammar mainly Latin, rhetoric, mathematics, and philosophy. This latter included some psychology, general and special, the Spanish psychologists being the leaders of thought in their subject at this time, and metaphy-

The noteworthy fact, however, was that a man had to spend seven years at the university before he received the degree of doctor of medicine. We are gradually getting to the position where we will require this again. It is amazing to think that with standards like this set so long ago we should have degenerated to that condition of medical education in America which characterized the middle of the nineteenth century. Fortunately we are on the upward swing of the pendulum in medical education, and the outlook is most hopeful.

110 WEST SEVENTY-FOURTH STREET.

THE STOMACH AND INTESTINAL GASES.

With a Description of an Apparatus for their Collection and Analysis.*

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The important rôle which they play in a number of abnormal conditions lends to the study of the stomach and intestinal gases a more than theoretical interest. As is well known, the alimentary canal, after the very first ingestion of food, is never entirely free from gases. Throughout life there is a constant cycle of production and elimination. Under healthy conditions this interchange proceeds without discomfort or marked disturbance, but, if from any cause there is a derangement of its equilibrium, flatulence, borborygmi, meteorism, tympanitis, and other conditions, varying in their significance from merest discomfort to severest gravity, will result.

I. THE STOMACH GASES.

The gases which occur in the stomach have been the subject of extended investigation. Much has been learned of their nature and of the conditions under which they are produced. Complete lists of these investigations are given in the various textbooks. Notwithstanding all that has been studied and written, the profession in general has shown but little interest in the subject.

This is mainly due to the apparent lack of direct clinical value of such knowledge and to the absence, heretofore, of a simple apparatus for the collection and analysis of these gases. The inverted test tube and the Fiebig fermentation tube can be used for qualitative, but not for quantitative, estimations. Hoppe-Seyler's adaptation of the Woulff bottle (1), while simple enough to be used clinically, permits a large proportion of carbon dioxide to be absorbed by the water in the bottle, and thus renders an exact quantitative analysis impossible.

The apparatus to be hereinafter described is intended both for the collection and the analysis of stomach and intestinal gases. In its construction and its manipulation it is sufficiently simple to be used wherever ordinary clinical laboratory facilities may be had.

The varieties and sources of gases found in the stomach are:

1. Oxygen and nitrogen, from air swallowed with or independently of eating and drinking. Most of the air which enters the stomach is gotten rid of by eructation. Nothnagel (2) states that free oxygen is never present in the lower bowel.

2. Carbonic acid gas, nitrogen, sulphuretted hydrogen, ammonia, and other gases contained in food stuffs, beverages, medicated liquids, and mineral waters

3. Gases originating within the stomach itself. In the early stages of normal gastric digestion, microorganisms may cause fermentation and the development of carbon dioxide and hydrogen. Miller (3) states that this ceases as soon as a large amount of free hydrochloric acid has been produced. Schierbeck (4) has shown that during digestion carbon dioxide is generated by the secreting cells of the gastric glands. Strauss (5) and Rosenheim (6) found ammonia present in very small quantities. Under pathological conditions, such as ulcerating carcinoma, abscess of the stomach wall, stagnation of stomach contents, etc., besides these gases, sulphuretted hydrogen, marsh gas, and other hydrocarbons may be formed.

As a contribution to the study of stomach and intestinal gas formation, I wish briefly to cite the results of some of my own analyses with the apparatus to be later described. These analyses were made a few years ago in the laboratory of Professor Zuntz, of Berlin, the clinical material being obtained through the courtesy of Dr. H. Strauss from Professor Senator's division at the Charité. While the series is by no means an extensive one, the results serve to demonstrate the practical applicability of the apparatus, and to show the relative proportion in which the gases found occurred.

Stomach Cases.

These were three in number, viz., I, gastric carcinoma (with pyloric stenosis, palpable tumor, stagnation of contents, lactic acid, strong butyric acid odor, etc.); 2, benign stenosis of the pylorus (no tumor, but retention of contents and, generally, free

^{*}Re I is part with a demonstration of the apparatus used at the annual scrom of the American Government of Association, At lanta City force a 1997

TABLE I.—STOMACH CASES.

| Clinical diagnosis. | | Last lavage. | Gastric state. | Disposal of con- tents until ana- lyzed. | Volume of gas analyzed. | Composition of gas mixture. | Daily diet. |
|---|-----|-----------------------------|-------------------------|--|-------------------------|---|---|
| I. M. Gastric carci- noma with pyloric ste nosis | 1 | two days pre- viously. | fasting. | one and one- half hours in thermostat, | 36.6 c.c | CO ₂ , 5.4% O, 18.9% H, 12.8% CH ₄ , absent, N, 62.9% H ₂ S, absent, | Mixed (2 rolls, 1 portion boiled beef, 1 of boiled ham, stewed fresh vegetables, 2 cups of bouillon, 1 litre of coffee and milk, and a half pint of claret). |
| | 2 | ditto. | ditto. | six days more in thermostat after analysis No. 1, | 7.6 cc | CO ₂ , 9.0% O, 5.0% H. 16.0% CH ₄ , absent. N, 70.0% | claret). ditto. |
| | 3 | ditto | ditto | examined immediately after aspiration (not placed in thermostat), | 10.13 c.c. | H, 16.6% CH ₄ , absent, N, 70.0% H ₂ S, absent, Ct) 9.2% O, 17.4% H, 7.1% CH ₄ , absent, N, 66.3% H ₂ S, absent, CO, 20.7% | ditt- |
| | 4 | previous fore- noon, | ditto | examined three hours after as- piration (not placed in ther- mostat), | 16.2 c.c., | CO ₂ , 20.1% O. 14.5% H. 1.2% CH ₄ , absent, N. 64.2% H ₂ S, absent, | ditto. |
| | 5 | previous evening, | ditto | kept three hours in room (not in thermostat), | 24.1 C.C., | H ₃ 5, absent, CO ₂ , 5,7% O, 14,1% H, absent, CH ₄ , absent, N, \$0.2% H ₂ S, absent, | Proteid and fat (4 eggs, 2 por- tions (160 gram- mes), scraped beef, 400 C.c. bouillon, 40 grammes butter, 4 cc. "Karno," 30 grammes but- ter, and a half pint claret). |
| | 6* | ditto. | few hours after dinner. | kept one hour in room (not in thermostat), | 16.8 c.c., | CO ₂ , 2.6% O, 17.5% H. 0.8% CH ₄ , absent, N. 79.1% H ₂ S, absent, | pint claret). ditto. |
| | 7 | five days previously, | fasting, | three days in thermostat, | 9.0 c.c | CO ₂ . 3. 9 G CO ₂ . 3. 9 G H, 1.4 % CH ₄ , absent, N. 56.7 % H ₂ S, absent, | Mixed (4 eggs, 1 portion boiled ham, 200 grammes mashed potatoes, 40 grammes butter, cup bouillon, 1 litre milk and 1 |
| | 9 | | fasting. | seven days in thermostat. kept four hour- in room (not in thermostat), | 9.3 c.c 8.76 c.c | CO ₂ , 44.8% O, 0.03% ² CO ₂ , 8.3% O, 12.8% H, absent, CH ₄ , absent, N, 78.9% H ₂ S, absent, CO ₂ , 10.3% | litre coffee. Same as No. 5. |
| II. M. Benign steno | 10 | sereral days previously. | ditto. | one and ore half hours in thermostat, | 30.8 с.с. | 0, 13.6% | "Mixed" (So grammes scraped beef, 2 rolls, 4 eggs, 40 grammes butter, 200 cc. bouillon, 250 cc. "sweet wine." 250 cc. carbonic water, and 500 cc. coffee). |
| | 11 | litto. | ditte. | eight days more in thermostat after analysis No. 10, | 8.37 c.c., | 0, 5.9% | |
| III. S. Perigastric abscess, rupturing into the stomach | 12 | dicto | ditte. | kept in room one hour (not in thermostat), | 14.1 CC. | N. 72.9% H.S. absent. | "Fluid' (4 eggs, 1 litre milk, 1 litre coffee, 200 ec, 50pp, 250 cc, huckleberry wine, 250 ec carbonic water, and a few sweetened crackers. |
| | 1.3 | ditto | ditte | nine days more in thermostat after analysis No. 12, | 10.05 € € . | CO ₂ , 73.4°, O, 4.3°c H, 3.22°c CH ₄ , 6.8°c N, 18.3°c H ₂ S, strong ^{2,1} | Commence. |

¹⁸Stomach contents obtained on afternoon of the same day as No 5, the gas percentages here are almost identical with those of atmospheric air.

¹⁸Nations not further determined as a portion of the apparatus became disarranged.

hydrochloric, but occasionally, lactic acids); and 3, a perigastric abscess communicating with the stomach. The diagnosis in this case was confirmed by autopsy. The stomach contents of this patient were always purulent, and had the foul odor of decompo-

sition; lactic acid was constantly present.

In these three cases, thirteen gas analyses in all were made. The contents were always obtained by aspiration into a pear shaped bottle, by a method later to be described. Whenever free gases were drawn out with the stomach contents they were analyzed as soon as possible; otherwise, the collection apparatus was placed into the thermostat and the gases that were formed determined later. The individual analyses are detailed in the following table:

From these few cases general conclusions cannot be drawn. The results, however, suffice to illustrate the kind and proportions of gases that were formed from the fermentation of the gastric contents both inside and outside of the stomach in the

three cases under observation.

Reviewing the table, we note, in the first instance, that sufficient free gas was usually present for immediate analysis. Only rarely was it necessary to resort to fermentation in the thermostat. After their withdrawal for analysis, the stomach contents were several times (see table) placed in the thermostat for a varying period, and the gases that developed were also examined.

There was a very marked difference between the percentage of carbonic acid gas in the early (introgastric) and the later (thermostatic) gas mixtures. Analyses I and 2 were exceptions in this respect, but even in these, the artificially fermented stomach contents yielded more carbonic acid gas than was

obtained directly from the stomach.

Notable, too, was the entire absence of marsh gas in twelve out of the thirteen analyses; in the exceptional case (No. 13), it formed but 0.8 per cent. of the entire gas mixture, and may have resulted from pus decomposition. Hoppe-Seyler (1), who analyzed eleven cases of gastric dilatation, both malignant and benign, never found more than the merest traces of this and other hydrocarbons present. On the other hand, McNaught (7) reported 6.8 per cent. and Kuhn (8) 8.9 per cent. and 9.31 per cent. in cases of benign pylorus stenosis with ectasia, Ewald (9), 2.7 per cent. and Frerich (10), 10.75 per cent. With but few exceptions, the diet and the time of the last meal and of the last gastric lavage, if any, were not stated.

Hydrogen, on the contrary, was present five times out of eight, in the freshly obtained contents, and three times out of four, after thermostatic decomposition. Its amount varied from 0.8 per cent. to 16.4 per cent. Both Hoppe-Seyler (1) and Kuhn (11) found this gas very frequently present in cases of gastric stagnation. With other investigators they agree that its formation is largely due to butyric acid fermentation. Hoppe-Seyler found that a proteid diet greatly diminished, and a mixed or a carbohydrate diet increased the amount of hydrogen

present.

The rather large percentages of oxygen in the fresh's expressed contents may be due to the swallowing of air by the patient. It was present in much

larger proportions in the fresh contents than it was after thermostatic fermentation.

With one exception, sulphuretted hydrogen was always absent. This exception, like that of marsh gas, occurred in analysis 13, and it, too, may have resulted from pus decomposition. It was not present either in the freshly obtained contents nor after twenty-four hours' exposure in the thermostat. It developed only after much longer decomposition. This constant absence of sulphuretted hydrogen in our cases is, after all, not surprising, in view of the results published by Boas (12) and Zawadzki (13). As a result of numerous observations, Boas states that sulphuretted hydrogen is very frequently present in benign gastrectasias with free hydrochloric acid, that have received little or no treatment, while it is extremely rare in malignant gastrectasias, where lactic acid, etc., occurs. Sticker (14) who also investigated this subject, ascribes the occurrence of sulphuretted hydrogen in the stomach, in most instances, not to albuminous food decomposition, but to diastatic action of the salivary juices upon certain sulphur containing oils present in common kitchen herbs. He concludes that this gas has a diagnostic value only when such herbs are excluded from the

In a number of cases no gases were generated by the stomach contents, even after being kept several days in the thermostat. The stomach contents of the patients here reported, and of a number of others, were at times left as long as two weeks and over with negative results in this respect. Similar experiences with normal stomach contents are mentioned by Riegel (15) and others, but none as far as I can learn have been reported with the contents of patients with gastric dilatation.

II. THE INTESTINAL GASES.

What are the sources and varieties of the intestinal gases? While Zuntz (16), Ruge (17), Tappeiner (18), Tacke (19), Planer (20), and others have made some investigations into the nature and origin of these gases, their researches have been limited to animals or to experimental deductions from examinations of the expired air. To the best of my knowledge, careful studies and investigations in the human being into the exact causes, place, and manner of development of the intestinal gases, as well as into the influence of dietetics, medication, physiological measures, etc., upon them, have not been made or published. Hence, while we have some positive knowledge, much that is stated in the textbooks, and of what follows here, is purely deductive and theoretical.

The gases found in the intestinal tract are derived from the following three sources: I, They enter the bowels from the stomach; 2, they pass into it by diffusion from the blood; 3, they are formed within the gut itself. This last is the most important

source.

I. The gases that enter the bowel from the stomach may be any or all of those already mentioned as occurring in the latter organ.

2. Nitrogen, according to Bunge (21), and carbon dioxide, according to Nothnagel (2), pass into the intestinal lumen by diffusion from the blood.

3. Most of the intestinal gases, however, are

formed in the bowel, and this production of gases takes place more or less constantly through fermentation, bacterial decomposition, and, in the upper part of the small intestine, through the chemical decomposition of the alkaline carbonates of the pancreatic, biliary, and intestinal secretions by the acid chyme and the fatty acids: Gas production is liveliest where there is active fermentation, and slowest where putrefactive changes and inspissation of fæcal contents occur. Generally speaking, therefore, the greatest amount of gas is formed in the upper portion of the small intestine, less so in the lower, and little or none in the large intestine. A marked exception to this rule is found in conditions of hyperperistalsis without obstruction. Here the contents are rushed through so rapidly that gas formation is practically uniform throughout the entire gut.

It is obvious that the nature, quantity, quality, and preparation of the food, and the digestive activity of the alimentary secretions are influential factors in the production of gases. Under ideal conditions of food preparation, ingestion, and digestion, the kind and quantity of gases will vary greatly from those arising under abnormal conditions.

The carbohydrates yield hydrogen, carbon dioxide, marsh gas, and other hydrocarbons, the last named group of gases varying in amount in inverse ratio to the digestibility of the carbohydrate. Ruge (17), Tappeiner (18), and Planer (20) have shown that those rich in cellulose yield more hydrocarbons than does any other variety of food. Since cellulose is resistant to the gastrointestinal secretions of man, the production of marsh gas and similar compounds must be the result of bacterial action. Carbohydrates rich in starch and poor in cellulose yield little hydrocarbon, but much carbonic acid

The proteids develop relatively less carbonic acid gas than the carbohydrates, but, they yield, in addition, hydrogen, marsh gas, nitrogen, ammonia, and sulphuretted hydrogen, and, under certain conditions, nitrogen. Ruge (17) has shown that under a pure meat diet, the intestinal gases of man contain very large amounts of marsh gas (26.45 per cent.).

It was formerly held that the greater part of the intestinal gases passed out by the anus. This view is now known to have been erroneous, and it is conceded that in the healthy individual, at least, as much disappears through absorption into the blood and expulsion by the respiratory tract. This is proved by the fact that, although gases are formed continuously in the healthy individual, little or none escapes through eructation or by the anus, while the condition of intestinal distension remains pretty constant. Consequently, a large part must be absorbed, and escape by way of the lungs. This has been proved by experiment. Thus Tacke (19), with rabbits in Zuntz's laboratory, found that in these animals ten to twenty times as much of the intestinal gases escapes through the lungs as per anus. The ratio for human beings is not known.

The formation and elimination of these intestinal gases are intimately associated with body metabolism. Under normal conditions the study of these processes has only theoretical interest. When, however, there is an overproduction or a difficulty in

their elimination, clinical conditions that may be associated with the gravest consequences to the patient may result.

Abnormally large amounts of gas in the bowel may result from causes disassociated with the integrity of that organ. Among these are the swallowing of excessive quantities of air, or perhaps, too, of carbonated beverages. In the latter case, the gas is usually gotten rid of by eructation. The passage of gaseous material of any kind from the stomach into the bowel may give rise to intestinal flatulence.

The condition known as "aerophagy" (air swallowing) is met with in very rapid eaters and drinkers, as well as in certain nervous individuals who are adepts at autoinflation. At times, very marked abdominal distention is produced. Such conditions of extreme distension have been most often observed in hysterical individuals. The occurrence is sudden, frequently without apparent cause, but usually is associated with some exciting or depressing psychic influence. It has been observed to occur with menstruation or after childbirth. The condition may last only for a few hours, or it may continue for weeks, and then disappear suddenly. Its disappearance may be spontaneousthe result of a new psychic influence. The cause of this distension has not been definitely determined, but the most accepted explanation is that of Valentier, viz., an hysterical paralysis of the intestinal muscular system. This would account for the sudden onset and disappearance. The gas very probably escapes (noiselessly) by the anus, though its reabsorption into the blood is regarded by some as the cause of its disappearance. The gas is said to be odorless, but so far as I can learn its exact nature has not been examined into.

Certain foods, when subjected to bacterial, yeast, or other fungoid action, yield large amounts of gases. To mention a few, we have those containing organic acids as sour wines, mayonnaises, pickles, fruits (especially overripe); those rich in cellulose as cabbages and legumes; those giving starchy fermentation products as certain varieties of bread, pastry, etc. In some persons, milk causes much gas.

The pathological stomach conditions which contribute to excessive intestinal gas accumulation have already been mentioned.

Diminished elimination of gases is caused by obstruction to their escape by the anus, or by interference with their absorption through the bowel wall. Obstruction to their escape by the anus is met with in the various forms of intestinal obstruction, and in atonic or paretic conditions of the muscularis. Interference with gas absorption through the bowel wall results from any cause that produces stasis of the blood circulation. Such causes may be general ones, as general peritonitis, severe acute fevers (especially in enfeebled persons), obstruction to the portal circulation, etc., or they may be local, as in some forms of intestinal obstruction (volvulus, kinking, intussusception, etc.). Gas elimination is rendered much more difficult, when, in addition to the congestion, there is excessive gas production through fermentation or decomposition of the intestinal contents.

Intestinal Cases.

These numbered six in all, and in them a series of twelve gas analyses were made, details of which are shown in Table II.

CASE I.—Chronic recurrent dysentery (nonamœbic). Patient had very many, for the most part liquid and semisolid, greenish or brownish moderate sized passages, usually acid in reaction, and mixed with blood and mucus. The diet at the time was a mixed one, consisting daily of three rolls, two eggs, some oatmeal gruel, small amount of milk, mashed potatoes, beef soup, veal, and some rice, farina, etc. The faces showed good meat and starch digestion, but potato cells were always present. Two analyses of gases, obtained on separate days, directly from the rectum, showed respectively:

a. CO₂, 4.1 per cent.; O, 8.4 per cent.; CH₄, absent; H, 8.4 per cent.; N, 79.1 per cent.; and H₂S, absent.

b. CO_2 , 3.5 per cent.; O, 18.4 per cent.; CH_a, 5.1 per cent.; H, 0.4 per cent.; N, 72.6 per cent.; and H_2S , absent.

These two specimens of gases, obtained directly from the rectum, reveal the presence of very little carbon dioxide (about 4 per cent.), of 0.4 per cent. and 8.4 per cent. hydrogen, of 5.1 per cent. marsh gas in one instance, and its total absence in the other. The presence of oxygen apparently contradicts the statement of Nothnagel (2) that this gas is never found free in the rectum. It is, however, very difficult to collect sufficient gas from the human rectum for analysis, and it is probable that there was some air in the rectal tube that was used. More examinations will be necessary to definitely settle this point.

The further analyses in this patient, as well as in

TABLE II.—THE GASES OF FÆCAL FERMENTATION

| | | TABLE II.—THE GAS | SES OF FÆCAL | FERMENTATION. | |
|---|---------------------|--|-------------------------|--|---|
| Clinical diagnosis. | Analysis number. | Material used and its preparation for analysis. | Volume of gas analyzed. | Composition of gas mixture. | Daily diet. |
| 1. R. Chionic recur- ient dysentery | 1 | single, semisolid acid stool; kept sixteen hours in thermostat, | 46.384 cc., | CO ₂ , 87.1% O, 1.0% H, 5.0% CH ₄ , absent, N, 6.9% | mixed (3 rolls, 2 eggs, oatmeal gruel, mashed po- tatoes, 200 cc. bouillon with farina, carrots, cel- ery root, etc., I litre milk, |
| | 2 | single, semisolid, acid stool; kept sixteen hours in thermostat, | 34.54 C.C., | H ₂ S, absent, CO ₂ , 90.9% Q, 0.8% H, absent, CH ₄ , absent, N, 8.3% H ₂ S, absent, | and 40 grammes butter. |
| | 3 | mixture of six liquid and semisolid stools, all of one day; kept twenty-four hours in thermostat, | 51.844 c.c., | H ₂ S, absent, CO ₂ , 91.8% O, 1.4% H, 1.2% CH ₄ , 0.3% N, 5.3% H ₂ S, strong, | ditto. |
| | 4 | material of analysis No. 3; kept seven days longer in the room, then twenty-four hours in thermostat, | 10.575 c.c., | H ₂ S, strong, CO ₂ , 70.5% O, absent, H, 4.2% CH ₄ , absent, N, 25.3% H ₂ S, strong, | ditto. |
| II. Z. Intestinal tu- berculosis (?); ad- vanced pulmonary tu- berculosis with diar- rhœa | | single, liquid, mucous stool, acid reaction; kept twenty-four hours in ther- mostat, | 20.46 c.c., | H ₂ S, strong, CO ₂ , 44.6% O, 2.16% H, 25.9% CH ₄ , 0.14% N ₁ 27.2% H ₂ S, trace, | Darmdiät. ⁶ |
| III. J. Pulmonary tuberculosis (no special bowel symptoms) | | single, well formed, alka- line stool; twenty-four hours in thermostat, | 11.861 c.c., | H25, trace, CO2, 49.8% O, 3.9% H, absent, CH4, absent, N, 46.3% H25, trace, | Darmdiät. |
| IV. S. Reconvales- cence from acute peri- carditis.4 | | Single, thick, pasty, acid stool, twenty-four hours in thermostat; very rapid gas formation, | 52.42 C.C. | CO ₂ , 93.8% O, 1.6% H ₂ S, very strong, ⁷ , | Darmdiät. |
| | | single, liquid, acid stool; kept twenty-four hours in thermostat; very slow gas formation, | 18.388 c.c., | CO ₂ , 59.6% O, 3.2% H, 3.0% CH ₄ , absent, N, 34.2% H ₂ S, absent, | ditto. |
| | 9 | material of analysis 8, kept three days in room, then four more in the thermostat, | 34.192 C.C., | CO ₂ , 75.8% O, 0.7% H, 4.9% CH ₄ , 2.1% N, 16.5% | ditto. |
| | 10 | material of analyses 8 and o, kept nine days longer in the thermostat, | 12.059 € €., | H ₂ S, absent, CO ₂ , 53.8% O ₂ , 2.8% H ₁ , 21.4% CH ₄ , 6.9% N, 15.1% | ditto. |
| V. S. Chronic consti- pation and chronic ar- ticular rheumatism | | single, well formed, alka- line stool, kept twenty- four hours in thermostat, | 14.52 c.c., | H ₂ S, very strong, CO ₂ , 62.6% O, 6.1% II, 2.0% CH ₄ , 0.2% N, 29.1% | ditto. |
| VI. S. Chronic alcoholism | | single, partly pasty, partly liquid stool, | 14.06 c.c., | H ₂ S, very strong, CO ₂ , 66,3% (O ₂ , 66,3% (I, 7.0% H, absent, CH ₄ , absent, N ₂ 20.7°, Il ₂ S, strong, | mixed, full. |

⁴This patient had no subjective symptoms, but daily had several light brownish yellow evacuations, usually acid in reaction, and varying from a fluid to a thick pasty consistency. They were always full of gas bubbles, and microscopically showed numerous fatty acid crystals.

acid crystals.

Determined by strips of liber paper moistened with lead acetate solution.

Most of these analyses were made while I was engaged in the investigation (23) of A. Schmidt's Gührungsprobe (24), and the patients, at a time, were under a modification of his secalled Homodal, viz.: 3 /wichack, a cage, 25 grammes of wheat flour, 45 grammes of oatmeal cooked with 10 grammes of sugar, 50 grammes mashed potatoes, 530 c.c. bouillon and 1,600 c.c. of milk.

Too little gas mixture left to determine the other gases.

the others, were not made from gases taken directly from the rectum, but from the gaseous products of fæcal fermentation outside of the body. The fæces, after being placed in an apparatus to be later described, were allowed to remain in a thermostat at 98.6° F., and the resulting gas mixture analyzed. While not identical with gas formation within the intestinal tract itself, the gaseous mixture resulting from the placing of freshly passed fæces in a brood oven under total exclusion of air, if properly interpreted, will, no doubt, disclose important data regarding the fermentation and putrefactive processes within the intestines (22).

In all, a series of twelve gas analyses were made. The details of these are shown in the following

table:

If we now briefly review these analyses, a few

facts will be noted:

We find that under a mixed diet, the largest part of the gases consists of carbon dioxide. amount, naturally, is larger under a full than under a light diet. This is illustrated by the patient of Case IV, where the figures are 93.8 per cent. for an average mixed diet, and but 59.6 per cent. for the much lighter Darmdiät. As might be anticipated, rapidity of peristalsis is an important factor. Thus, Case I (chronic dysentery), under a light mixed diet, gave 91 per cent. carbon dioxide, while Case III, with no special intestinal symptoms, under practically the same character of diet, gave but 49.8 per cent., and Case V (constipated at the time of the investigation), where the patient had a much heavier mixed diet, yielded only 62.6 per cent. of carbon dioxide. It would seem, therefore, that the longer the ingesta are retained in the intestine, the less carbon dioxide are they likely to produce. Carbonic acid gas being a product of fermentation, is most abundantly evolved in the earlier stages of intestinal decomposition, whereas the hydrocarbon series, being the result of putrefactive decomposi-tion, develop, in general, later. The findings in Case IV offer a good example. After three days in the thermostat, there was present 75.8 per cent. carbon dioxide, and no marsh gas; after nine days more the carbon dioxide diminished to 53.8 per cent., while the marsh gas increased to 6.9 per cent. These results agree with those of Tappeiner (18), who has studied gas formation in the intestines of cattle.

As the fermentative changes are replaced by the putrefactive, sulphuretted hydrogen also increases. Contrary to the prevailing impression, it is normally present in but small amount in both intestines and faces, the familiar odor being due mainly to skatol, and, to a lesser degree, to indol and the fatty acids.

It should be noted also that gas mixtures did not always result from placing of the fæces within the thermostat. Thus, once 50 grammes of fæces from patient of Case VI generated but 5 c.c. gases after twelve hours, and no more at all up to 286 hours; one specimen from patient of Case I yielded no gas up to five days, though, as a rule, the stools of this patient were frothy, and gave large quantities of gas. A third patient, 40 grammes of whose fæces were left in the thermostat, yielded 3 c. c. in ten hours, and no more gas up to 200 hours. Similar results were obtained in a number of other instances.

but these few suffice to show that sometimes little or no gas can be obtained from thermostatic fermentation of intestinal excreta.

(To be concluded.)

ELECTROTHERAPEUTICS.

Its Relation to General Medicince, Its Indications and Results from Its Use.*

> By Mulford K. Fisher, M. D., Philadelphia,

Assistant Instructor in Electrotherareutics; Assistant Demonstrator of Pharmacy, Medicochrurgical College.

A title as comprehensive as the one I have given to this paper may well cause a smile of derision, that the writer may be presumptuous enough within the narrow confines of a single paper to attempt to cover a field so pregnant with meaning as this title would indicate. However, it is not the intention to do more than glimmer a few thoughts in this recently developed and rapidly expanding field of therapeutics; to convey to you a few only of the possibilities that electricity presents in the treatment of disease; at the same time avoiding as much as possible technical expressions and endeavoring to present an entrancing subject in such a manner that the few thoughts here presented may be readily understood.

The genius of the present day has made electricity the attribute of its power. Mysterious, alluring, symbolic of the magician's wand, it girdles the earth, carrying messages quicker than the winged Mercury of old; it turns night into day; it prints our books; it dissolves bodies into their constituent elements; it carries our audible voice to the listener hundreds and perhaps thousands of miles away; and yet though conscious of its laws, although harnessed by the genius of civilized man into doing for him the mighty marvels which the past century has witnessed, yet the true nature of electricity is unknown. From the days of the Hindu god Indra, the god of Thunder; from Jupiter, who waved his thunderbolt over trembling Rome; from the Phœnicians, the mariners, who brought the amber from which they thought the hidden principle of life was derived and from which the name electricity is derivated (amber being called electron): while students were taught to read the will of the gods in the lightning of the skies; while scientists, priests, and philosophers labored to deciper this superhuman and shadowy mystery, down to the present day of the wizards Edison and Tesla, this element which lives in the skies, connects the material with the spiritual, obedient though it be to the will and wish of man, has eluded and baffled all who have worked and struggled to uncover its real identity.

It is indeed deplorable from the standpoint of the physician that we know so little of the real nature of electricity. From the days of Galvani, who by an accident came upon that form of electricity which bears his name, this natural agent has had its periods of ebb and flow. At first vaunted as a cure all, by which the blind could be made to see; the dumb to speak; the lame to throw aside their

^{*}Address delivered before the Mount Sinai Hospital Ex-Presidents' Association, July 2, 1908.

crutches and walk, it later sank into oblivion and was only practised by charlatans and quacks. As new discoveries were made and physicians commenced to learn the true indications and more important still, the limitations of this agent in the diagnosis and treatment of disease it again has come into repute, and the vast strides which electrotherapeutics has but recently made makes us sanguine that the day is not far distant when every student of medicine may be taught the underlying principles and become skilled in the manipulations of the necessary apparatus for the application of one of the most valuable therapeutic agents at his command.

The various forms of electricity which are employed are too well known to need more than passing comment. They are first, the static or frictional. (and in America we have made the greatest strides in the perfection of the induction machine); secondly, the galvanic or constant; third, the faradaic, or interrupted; and fourth, the high frequency. It is impossible to take up here a discussion of the various apparatus, which may be employed for the carrying out of any of these methods. The numerous manufacturers of electric appliances are only too anxious to demonstrate and proclaim the particular merits of their machines.

As physicians, what relation should we bear to electrotherapeutics, or rather should electrotherapeutics bear to us? Should we as some near sighted medical men have done and still continue to do, utterly decry its usefulness, or at the other extreme use it indiscriminately in the treatment of every form of bodily ailment? Fortunately there is a happy medium between the two, and in order to render the allegations urged more tenable, it may be wise to make a casual résumé of some of the physiological actions, or perhaps speaking more properly, the pharmacology, of this mysterious force upon the human body.

Chief among these may be mentioned the tonic effect of electricity. If there is one potent agent in addition to the usual hygienic measures of fresh air, sunshine, pure food, and bathing at our command in the treatment of functional debility, or exhaustion, it is electricity. I have seen the most marvelous results from the application of static electricity, particularly in cases of nerve tire or exhaustion, and it would be folly in view of the lack of a neurotic element in many of these cases to assert the success to be due to the psychic factor alone.

Secondly, its stimulatory action is so well known, particularly in cases of degeneration of muscles and nerve, as to require no more than passing mention. In paralyses of various forms electricity is often the only agent which seems, if not to arrest the course of a progressive disease with its accompanying loss of motion or sensation, to at least give to the diseased muscle or nerve some tone and to stay often for an indefinite time the further inroads of an incurable lesion.

Another property, and one which up to the present time little use of has been made in a practical way, is the increased elimination which electricity may cause. Carefully made experiments by patient observers have proved conclusively that there is a decided increase in the amount of urea exercted:

that carbon dioxide elimination is markedly increased; and it is a matter of common observation that patients while undergoing treatment or for some time after their séance is over, frequently have most drenching sweats.

The absorbing action of electricity, its power to relieve congestions or stagnations, due of course to its action on the vascular and lymphatic systems, is another property of its practical use that has been made in medicine. Exudates are absorbed; fibrous deposits disorganized; excessive callus at the site of fractures dissolved; and in innumerable ways have we been able to derive pronounced benefit by electrical measures alone.

Another property which is of decided practical value is the sedative influence of electricity. Many patients will tell you that they can always fall asleep almost immediately after a treatment, and how calming and soothing a static breeze may be only requires a self demonstration to convince yourself of this valuable adjunct in the treatment of highly wrought nervous or mental conditions. Time and time again have I been told by patients troubled with insomnia that the first application of electricity has given them the first night of untroubled sleep they have had in weeks, and often months.

It would be useless to decry the psychic effect electricity exerts. In fact the assertion is urged by its opponents that it is only in those cases in which the hysterical element is present that electricity is of any benefit. Be that as it may (and it is not the province of this paper to controvert on any issue) it is well to know that if by suggestion we can alleviate human suffering it is not for us to decry the means by which it is accomplished.

Electrolysis is made use of in various ways, in the removal of nævi, warts, facial blemishes, moles, trichiasis, and in the cure of aneurysm.

Cataphoresis, the introduction of drugs into the body by electrical means has lately fallen into disuse, but a number of years ago remarkable results were recorded from its use in neuralgia, for the relief of local muscular spasms in superficial muscles, in rheumatic or gouty swellings, and to produce local areas of anæsthetization for cutaneous operation. In these cases the anodal, or positive electrode saturated with cocaine or some other local anæsthetic would be placed over the painful area, the indifferent electrode on the spine or at some other point of the body, and in a few minutes decided relief with insensibility of the affected part is experienced. That the current, in this case the galvanic, does cause the penetration of the drug into the body is proved by examining the urine of patients subjected to this procedure. It is found that the urine frequently shows traces of the drug which is used for cataphoresis, showing plainly its systemic dissemination.

Many of the failures in the treatment of disease by electrical measures can be ascribed to the failure to understand one or two simple principles. The underlying factor for electrotherapeutics is to understand and intelligently use your poles. Polarity is of the utmost importance and the properties, anodal and cathodal, may be summed up in a nut shell. The positive pole, or anode produces vasoconstriction, causes an increased flow of blood through the part; removes congestion and stagnations of any of the fluids of the body, and causes firm coagulation of blood. On the other hand the cathode or negative pole has just the opposite effect. It produces a dilatation of the blood vessels; it is dissolving and absorbent in action and causes destructive meta-

morphosis.

The knowledge of these principles forms a groundwork upon which we can build up our whole electrotherapeutic structure. A proper recognition of the patient's condition is therefore essential, and it is by knowing the results that it is desired to be attained, that we must discriminate in our use of the poles. For instance, a patient is to be given the static breeze for the relief of a headache. It is highly essential therefore, for the operator to know whether it is a headache due to anæmia, hyperæmia, or congestion. If due to anæmia, let us say, the treatment therefore is plain. The negative pole is grounded and the positive pole, which you now know induces an increase in blood flow is connected directly to the patient. Or again it is desired to cure a urethral stricture by electrolysis. Referring again to these rules we know that the proper urethral to use is the negative which is absorbent, softening, and destructive in action,

It would be equivalent to an encyclopædic rendition to even mention by name the conditions met with in general practice in which electricity has been found of service. The references previously made in this article may give some clue to the fields in which treatment by electrical measures may be instituted. And the specialist has not been backward in realizing the possibilities which electrotherapeutics offers. The ophthalmologist uses it with pronounced success in many cases of commencing optic atrophy; in opacities of the cornea or vitreous; in retinal hæmorrhages; in ptosis; contracted vision; amaurosis; and in numerous ocular defects; it is employed by the dermatologist often with most gratifying results when the usual local and systemic medications have failed; and since the researches of Apostoli, of Paris, with the wide publicity given to his treatment of uterine fibromata by galvanism, gynæcologists have found electricity of decided benefit ofttimes in dysmenorrhæa, amenorrhæa, engorgements of the uterus, and in cases of obscure pelvic disease where other treatment proved of no

To state that we have in this agent a cure all is one of the things most desirable to avoid, and it is best to stop the iteration of the therapeutic indications of electricity at this point lest I be judged ultraoptimistic. For this is one of the things which in the past has consigned electricity to be practised only by the quacks and charlatans. Even at the present time electricity is a therapeutic ashheap into which are piled the chronic ailments, the incurable diseases, the cases on which after the pharmacopæia has been exhausted, the internist disgustingly turns to the electrotherapeutist, says "Give him electricity," and washes his hands of the whole matter. And although frequently he is surprised to be encountered with an unlooked for cure, yet the failure to achieve a beneficial result often gives ground for an undeserved condemnation of a valuable therapeutic adjunct.

One thing not to be lightly passed over is that while electricity does not always cure, frequently disappoints, and is fallible to the same degree as other medical agents, yet of one thing we are assured: It never harms. And if this hasty sketch does nothing else but impress upon you this one point;—that, if in electricity, for the sake of hypothesis, we have not a measure which is of benefit in the treatment of disease, at least it does not prolong or aggravate the patient's ailment—this paper will not have been written in vain.

2838 DIAMOND STREET.

CONSERVATISM IN SURGERY OF THE HANDS.

By J. A. Hofheimer, M. D., New York,

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In these days of major operations the details of minor surgery are frequently disregarded by the ambitious surgeon, and in consequence it too often happens that fingers or hands have been amputated when these members may have been saved by patience and attention to minutiæ.

Notwithstanding the fact that many cases of traumatism to the hand appear very unpromising at the first visit, yet it is the surgeon's duty to be conservative and to attempt the salvation of every part of this member—ample opportunity is afforded in the future to amputate if absolutely necessary.

Frequently the injury is not seen until several days have elapsed since the accident and after the wound has been attended under home auspices or by some tyro in medicine. These patients generally have a complicating cellulitis or lymphangeitis, requiring discretion and care in order that further dangers may be avoided which could prove serious to life or limb.

Several years' experience in public and private practice has afforded the writer opportunity of noting many severe cases that were restored to their normal state. Citation of a few of them may elucidate:

CASE I.—Guy H., a young lad, while endeavoring to pick up an object from the ground, was struck upon the hand with a large rock thrown with considerable force by a playmate. The result of this blow was a compound fracture of the little finger at the third surgical phalanx, just above the metacarpophalangeal articulation. The soft parts were completely severed, excepting that there remained attached a small piece of integument on the outer side of finger, from which the member dangled.

The patient was brought to my office during my absence, and a nearby physician called in. He at once decided to complete the amputation by severing the attachment with scissors, declaring that the finger could not be saved. Happening to arrive at this juncture, after examination I decided to make effort toward saving the digit. The parts were well cleansed and refreshed by slight scraping of cut surfaces; the tendons were sewed with catgut and a series of interrupted sutures coapting the soft parts, the bone set and a splint applied. This was about one hour after the accident. Two days later the dressings were removed, and the wound found in a satisfactory condition and redressed. At the end of two weeks passive motion was begun, and the case soon discharged with perfect joint action and no deformity.

Case II.—Viola H. This little girl, while watching her mother at work using a clothes wringer, suddenly thrust her index finger between the cogs of the machine, thereby sustaining a compound comminuted fracture (contused and

lacerated) of the first and second phalanges. When first seen about half an hour after the accident the parts were swollen and the wound filled with clots and dirt from chewing tobacco which had been applied as a hæmostatic. The hand was gently bathed in warm bichloride solution and of bone were picked out with splinter forceps, the wound brought together without suture—a small vent for drainage being left at one side-and a splint applied. A slight slough occurred at one point, but at the end of three weeks the soft parts were entirely healed and the bone united. Passive motion soon lessened the rigidity of the joints and complete recovery followed, with no deformity.

CASE III.—Fred G., a young lad, about twelve years old, while endeavoring to drop from the top of a fence to the ground, became transfixed on a projecting spike, which penetrated through the skin and palmar fascia, catching beneath the outer tendons of the flexor sublimis digitorum. The boy hung thus suspended for a few minutes, when his weight and struggles proving too severe a strain for the muscular fibres to sustain, caused them to tear away in an irregular manner the full length of the muscular belly, pulling the torn tissues out of the wound in the hand at a

point midway between the ring and little fingers.

He was taken to a nearby dispensary, where the attendants voiced their intention of ablating the exposed muscular structures and closing the wound. Being called in consultation, the writer advised that an attempt should be made to save the muscle. Keeping the arm warm by wrapping it in hot, moist, sterile towels, the patient was removed to his home nearby. About one hour after accident, assisted by Dr. Remer and Dr. Stewart, the boy being anæsthetized, an incision was made from a point just above the folds of the wrist up to the middle of the forearm to the elbow, and a ' careful dissection made down to the point of muscular laceration, which was plainly discernible owing to the ecchi-moses along the torn fibres. After the seat of injury was disclosed a grooved director was passed through the lower channel in the annular ligament, under the palmar fascia and out through the initial wound in the hand. A silk filet was attached to the proximal ends of the torn muscles and passed through the eye of a stylet which was guided into the proper channel by the grooved director already in situ. This procedure permitted me to draw the muscular tissue by gentle traction back into the forearm without doing any by gentle traction back into the forearm without doing and further injury to the palmar fascia and avoiding danger to the palmar arches. The hand was forcibly flexed on the wrist to relax the muscles, and the torn parts sutured into position on both sides with catgut. The superficial muscles and fascia being replaced, the lips of the integument were horself to extend the city of the control of brought together with silk sutures. The original wound in hand was left open for drainage. Antiseptic dressings with short anterior and long posterior splints were applied, the posterior splint having a wedge shaped cushion placed under the hand to partially flex it; this cushion was grad-ually decreased in thickness at subsequent dressings, thus applying a graded tension on the muscle while in process of healing, thereby reducing chances of contracture. The following day the patient's temperature rose to 100° F., decreasing in another twenty-four hours, and remaining normal during balance of disability. The wound in arm healed by first intention; there was a slight slough at the point where the spike entered. The patient, now a young man, has complete use of his hand and arm, but presents a small contracture at the base of the ring finger, where slough oc-curred. This prevents complete extension of finger but does not affect flexion, and as the inconvenience is so slight he refuses to submit to a subcutaneous section of this band.

Case IV.—John W., twenty-five years of age, butcher. While endeavoring to use a meat chopping machine he caught his right hand in its interior and chopped off the thumb just above the metacarpophalangeal articulation, leaving the digit handing by a narrow palmar flap. This case was treated in a manner similar to case I with excel-

lent results, a normal finger being preserved.

CASE V.—Mr. V., æt. fifty, engineer. When first seen by me the patient had been ailing for over a week and complained of pains in his right shoulder, and a general febrile condition. He had been doctoring himself for rheumatism. Examination of the arm showed that it was swollen from hand to shoulder with numerous red streaks, a tubular lymphangeitis. Search for a possible point of entrance of infection disclosed at the base of the thumb about middle of the thenar eminence the remnant of what the patient

stated had been a "blood blister," which he had opened with his penknife. The man's hands were grimy with oil and adherent dirt; and all about the thumb, palm, and dorsum of the hand there was a boggy, indurated sensation, but no pain at this point was complained of. In the forearm, between the ulnar and radius, distinct fluctuation was noticeable, the glands at the elbow and in the axilla were slightly swollen. The patient was pale; heart sounds weak; rapid, small pulse; albuminous urine, and a temperature ranging from 102° to 104° F., with frequent chills. Blood poisoning being in evidence, an attempt to relieve the pus accumulations as quickly as possible was decided upon. Incisions were made at the point of original injury and in the forearm, evacuating considerable pus. Despite constant drainage, antiseptic moist dressings, and tonic treatment, the patient grew worse. Other pus foci formed, and numerous incisions were made to further their relief. A consultant advised me to amputate the hand above the wrist, as probing showed that the cancellous carpal bones were involved and the hand in a general sloughing condition. Feeling that more could be done toward saving the hand, I made several incisions on the dorsum between the metacarpal bones and also on the outer side of the fifth metacarpal. Into this latter incision a drainage tube was passed under the palmar fascia and through it the palm was irrigated daily, as were the dorsal wounds, with a solution of tincture of iodide, 5ii to pint, followed with several injections of hydrogen peroxide, and packed with aristol strips. An anchylosis throughout the hand persisted for over a month after the wounds healed, but this yielded to constant manipulation and frequent hot baths, the patient now having full restoration of function.

CASE VI.-Otto S., æt. twenty-eight. While aiding in placing a heavy machine upon a truck the middle finger of his left hand was crushed. He was first attended at an emergency hospital, where he was advised to have the finger amputated. The writer saw him about three hours later. At that time the finger was badly swollen, and split open as with a cleaver, the bone being chopped through longitudinally and the nail cut in twain and curled in between the fragments. The articular surface of the first phalanx was cut through, the soft parts badly lacerated and filled with dirt. An attempt had been made to bring the severed parts together by inserting two horsehair sutures on the palmar surface of finger, one of which did not hold, as the tissues were too friable. These sutures were removed, as I feared they would interfere with the circulation, already feeble from the crushing. After repeated cleansing with hot sterile water and hydrogen peroxide and removal of the nail, the finger was lightly bound with strips of aristol gauze and well wrapped in cotton for warmth, and a splint applied. This dressing was changed every fourth day, the strips being gradually wound tighter and strapped with zinc oxide plaster over the gauze as improvement advanced. By this means circulation was not restricted, and the strapping brought the parts into proper contour, besides acting as a splint to the fractured bone. Passive motion was performed at each dressing, and the finger eventually resumed its normal condition with perfect motion.

Usually it takes a little longer for these traumatisms to heal by conservative methods than after amputation. The explanation is simple. After an injury the crushing, bruising, and ofttimes infection causes a temporary destruction of the parts, these have to be cast off and new healthy growth encouraged; whereas in amputating the surgeon can select healthy tissues to operate upon, and first intention obtained thereby.

Very frequently the ambition and often the necessity of a patient compels him to return to work early, therefore he will not tolerate or thinks he is unable to afford a period of invalidism. This condition of affairs often urges upon a surgeon the performance of a radical operation, when a little patience could have saved the part, the gain in time to the client being given as an excuse.

Conservatism is a fundamental rule of good surgery no matter what portion of the body is involved. When to operate and when to withhold operation should aiways be the proposition most carefully weighed. Where there is the slightest chance of saving a part of the human economy endeavor should be made in that direction. Utility of a member is important to the wage earner, but a portion of a digit is better than none at all.

The cases here recorded are of sufficient frequency to illustrate the fact that a badly injured finger or hand is not in itself ample proof that amputation is necessary—give Nature a chance, and with proper aid many hopeless looking cases will gratify the attendant by their complete recovery.

Case V was a most unpromising one, tedious and exacting in its care; constant interference by friends and family, and great petulance on the part of the patient who certainly suffered greatly at times. He often begged me to amputate, and his case took nearly eight weeks to heal-but he has a useful hand and arm, and to a mechanic this means much.

Case III was an unusual injury, and in it fortunately no wound infection occurred. The avoidance of further injury to the palm of hand prevented a deformity as also did the gradual stretching of

the muscles during the healing process.

A characteristic of many patients is their inability to decide what is the best for them to do in a surgical procedure, and they will be impatient under the restraint of a protracted period of treatment. This is especially true about hand injuries and often leads to sacrifices where there should be none. While the surgeon seldom gets credit for his efforts in saving these small parts, it should still be his endeavor to conscientiously strive for conservatism where and when possible.

123 WEST 126TH STREET.

A CASE OF SPLENIC ANÆMIA. SPLENECTOMY. **BLOOD CHANGES.***

By I. HARRIS LEVY, Ph. B., M. D., Syracuse, N. Y.,

Associate Professor of Clinical Medicine, College of Medicine, Syracuse University; Visiting Physician to the Hospital of the Good Shepherd.

At the 1905 meeting of this society I reported two cases of chronic splenic anæmia occurring in twin sisters. One had already died from the disease. The other at that time was a chronic invalid. She has since had her spleen removed, and it is my purpose to place the case on record.

History: Miss M., Canadian, aged thirty-four. Father died at sixty-two of some stomach trouble; mother is alive and well at sixty-seven years of age. Three brothers and three sisters are living and in good health. One sister died at thirty-eight of peritonitis. Her twin sister died at twenty-nine of splenic anæmia. One brother, aged thirtyeight, living in Canada, is also beginning to show symptoms of this disease. Patient had the usual diseases of child-hood. From her fourteenth to her seventeenth year she was troubled with lumps or swellings about the size of a quarter, which would break out on the hands and feet. They were elevated, reddened, and would burn. In July, 1898, she had an attack of pleurisy with effusion. In September of the same year she had a severe attack of diarrhoea which lasted about four weeks. There was at the same time a great deal of soreness in the left hypochondriac region. The pain persisted for about three months and then disappeared. She then entered the Hospital of the Good Shepherd Training School for Nurses.

*Read by title at the annual meeting of the New York State Medical Society, January 30, 1908.

the work agreed with her. She gained in weight. Her color was good, and she was generally known as the "rosy

In January, 1898, she left the hospital to nurse her sister. In August of that year she had a second attack of soreness in the left side. Dr. W. L. Wallace examined her, but could find no apparent cause for it. The attack lasted some

weeks and then disappeared.

For the next two years she was in indifferent health. At times she felt fairly well and strong; at other times she felt run down and weak, and was forced to keep to her bed. felt run down and weak, and was forced to keep to her bed. In June, 1902, she again entered the hospital training school. The work proved too much for her, and, after being on duty for two weeks, she was forced to turn patient, suffering from swelling of the left knee, left elbow, and right large toe. The diagnosis of inflammatory rheumatism was made. After two months' illness she was able to leave the hospital. Change of scene brought about a marked improvement in her condition. About the middle of September she again undertook to nurse her sister. This she did until the latter's death, December 28th. She endured considerable physical as well as mental strain. Durdured considerable physical as well as mental strain. During 1903 her condition was poor. She was anæmic, had pains in the extremities, also in the left hypochondriac region. She had occasional attacks of diarrhœa. At other times she was constipated and suffered from sharp attacks of colic. She also had several attacks of stomatitis. The gums would become red and swollen. She also had a mild fever during the attacks.

In November, 1903, while visiting in Toronto, Canada, she consulted Dr. Cotton. He examined her, but could not determines any splenic enlargement. He found some thickening in the region of the appendix and advised an operation. This she declined, and returned to Syracuse.

Her condition again improved.

In February, 1904, she had an attack of quinsy. The convalescence was very slow. The soreness in the side continued. A blood examination made by Dr. Wallace showed hæmoglobin seventy per cent.; red blood corpuscles, 3,680.000; white blood corpuscles, 3,600; differential count, polymorphonuclears, 17.5 per cent.; lymphocytes, 46 per cent.; large mononuclears, 32.5 per cent.; eosinophiles,

In July she again visited Canada, and again consulted Dr. Cotton, and now, for the first time, he discovered that the Spleen was enlarged, and advised splenectomy.

In October she returned to Syracuse and consulted Dr. Wallace, who kindly referred her to me.

Examination, October 4, 1904: Patient was thin but not very anæmic. On the face there were a number of irregular brownish spots. The mucous membranes were of fairly

lar brownish spots. The mucous memoranes were of fairly good color. Tongue coated.

Lungs normal; heart not enlarged, sounds accentuated, but no murmurs. Pulse of moderate volume; some arrhythmia. The stomach did not reach below the navel. The liver dulness began at the fourth rib. The lower border was just palpable at the free border of the ribs, but was not enlarged.

The spleen was freely movable and extended three fin-ers' breadth below the free border of the ribs. It was

firm, smooth, and notched on its anterior border.

The right kidney was freely movable. The left kidney was also movable but to a lesser degree. None of the glands were enlarged. There was some tenderness over the sternum; none over the bones.

The blood examination showed a mild anamia of the chlorotic type. Hæmoglobin, 80 per cent.; red blood corpuscles, 4,800,000; white blood cells, 1,600. The differential count showed polynuclear neutrophiles, 13 per cent.; count showed polynuclear neutrophiles, I3 per cent.; large mononuclears, 40 per cent.; large mononuclears, 40 per cent.; eosinophiles, I per cent. No polkilocytosis; no nucleated reds, but some inequality in the size of the erythrocytes. Examination of the urine was negative.

A blood count made October 15th resulted: Hæmoglobin, 70 per cent.; red blood corpuscles, 4,700,000; white blood cells, 600. There were so few white cells that it was difficult to make a differential count. It was, however, very evident that the mononuclear cells far outnumbered the

polymorphonuclears.

On account of the frequent attacks of diarrhoa I determined to make an analysis of the stomach contents. She was given the ordinary Ewald test breakfast, consisting of 300 c.c. of water and 50 c.c. of bread, and the contents aspirated one hour later. The obtained contents formed a thick, gelatinous mass, consisting of much mucus mixed

with food particles. The bread was not well digested. A chemical examination revealed that free hydrochloric acid chemical examination revealed that free hydrochloric acid was entirley absent, the total acidity was four. There was neither pepsin nor rennet present. Two days later I gave her a test meal consisting of soup, meat, bread, and vegetables. Four hours afterward the contents were aspirated. The thick, gelatinous mass passed through the tube with difficulty. Macroscopically the various ingredients of the meal could be distinguished. An analysis gave the same result as before. No free hydrochloric acid no pensame result as before. No free hydrochloric acid, no pepsin, no rennet, and a small amount of combined acids.

During 1904 I made repeated examinations of the stomach contents at various times of the day and under varying conditions. The result was always the same—a complete absence of the free hydrochloric acid and the

Repeated blood examinations were also made. The red blood corpuscles varied from 4.100,000 to 4.800,000; the white cells from 600 to 2,700. The differential counts likewise gave similar results. The polymorphonuclear neutrophiles were always in the minority. The highest polymuclear count was 30 per cent.; the lowest 11 per cent. There was always a relative increase of the large mononuclear leucocytes. At no time were there any myelocytes or nucleated reds founds, nor was there any marked poikilocytosis. There was, however, some inequality in the size of the red blood corpuscles.

During 1905 and 1906 the patient was for the most part in Schenectady. Occasionally she would visit Syracuse. Her health was variable. At times she was quite comfortable and able to be about. Again she would have a relapse and would be forced to take to her bed.

Blood examinations were made at intervals, but there was very little change in the number of the white cells or in the

distinctive count.

In the Spring of 1907 her general condition was much worse. The anæmia was more pronounced. She suffered considerable pain in the left side. She was extremely emaciated, weighing but seventy-two pounds. It was evident that she would soon die of exhaustion unless relieved by surgery. The question of splenectomy had long been considered. The patient consented to the operation and entered the Hospital of the Good Shepherd for that purpose on July 4th last.

Examination at time of entrance: Patient very anæmic and emaciated. Lungs negative. Heart not enlarged. Hæmic systolic murmur. The spleen on deep inspiration Hæmic systolic murmur. The spleen on deep inspiration reached three inches below the free border of the ribs. Its surface was smooth and hard. Liver palpable but not enlarged. There was no ascites, nor enlarged glands. Blood: Hæmoglobin, 40 per cent.; red blood corpuscles, 3,000,000; white cells, 1,700. Differential count, polymorphoruclears, 28 per cent.; lymphocytes, 49 per cent.; large menonuclears, 22 per cent.; eosinophiles, 1 per cent. On August 5th she was etherized and Dr. W. L. Wallace removed the spleen. I append his notes. "Incision through the left rectus. Spleen found enlarged to the median line of the body, and extending parallel with.

to the median line of the body, and extending parallel with, and two inches below the lower border of the ribs. Liver, gallbladder, both kidneys, stomach, pancreas, and intra-abdominal fat normal in size and appearance. The spleen was slightly adherent and dark in color. The splenic veins were strikingly large and thin, as if their outlet was

"The light adhesions of the spleen to the diaphragm were broken up and the spleen easily delivered through the incision. The splenectomy was then accomplished by ligating the vessels separately with fine catgut; first, the splenic artery, in one very large upper and one large lower branch; then the splenic vein, in one very large upper and one large lower branch. The pedicle was then clamped close to the spleen and cut between the clamp and the ligatures, and the spleen was removed. On taking off the clamp the spleen rapidly contracted, pouring out a large amount of blood."

For several days following the operation she was exceedwith send and her recording to not looked for. Heart tonics in large doses were necessary to sustain the heart action. She complained of a great deal of pain in the left side. At the end of a week there was a marked improvement. She was now fairly comfortable. But owing to the discovery of a case of smallpox in the hospital she was second inoculation was successful and she reacted strongly. weak. She vomited frequently, retaining but little nourish-Added to this there was a troublesome diarrheea. She would have from three to eight liquid stools daily. This condition persisted until September 10th, when she again began to improve, and on October 2d she left the hospital.

The temperature following the operation reached 99.4° F. on August 6th. On the 9th it went up to 101° F. It then dropped to 99.4° F. On the 17th it was 100.2° F., on the 19th, 101.5° F. It then dropped to the normal and remained so for a week. On the 28th it went up to 101° F. From September 2d to the 6th the afternoon temperature was 102° F. It then gradually dropped to the normal.

Numerous blood examinations were made during this time. Immediately following the operation there was a slight increase in the number of red blood corpuscles and in the amount of hæmoglobin. The most striking change was the marked increase of leucocytes. Previous to the operation the leucopenia was pronounced, one count showing only 600 white cells. On August 6th, the day following the operation, the count showed 14,250 leucocytes. On the 7th there were 15,500, and on the 9th 19,500. This was the highest white cells count noted. From then on their number decreased. On August 24th the count showed but 10,000, and they have remained fairly constant since.

Leucocytosis is the rule following splenectomy. Sometimes the increase is pronounced. reports a case in which the white cells increased from 147,000 to 360,000. Six months later they numbered but 26,000.

The change in the distinctive count was also striking. Previous to the operation the distinctive count always showed a marked diminution in the number of polymorphonuclear neutrophiles, and a relative increase of the mononuclears, especially the large mononuclears. Following the operation, August 6th, the polynuclears suddenly increased to 78 per cent., the lymphocytes fell to 12 per cent., and the large mononuclears to 10 per cent. The polymorphonuclear neutrophiles remained about normal until September 17th, when a count showed: Polymorphonuclears, 46 per cent.; lymphocytes, 37 per cent.; large mononuclears, 16 per cent.; eosinophiles, 0.5 per cent.; mast cells, 0.5 per cent.

Blood count, September 24th: Hæmoglobin, 50 per cent.; red blood corpuscles, 3,700,000; white cells, 11,000; differential count, polymorphonuclear neutrophiles, 34 per cent.; lymphocytes, 44 per cent.; large mononuclears, 20 per cent.; eosinophiles, I per cent.; mast cells, I per cent. The blood now, with the exception of the number of leucocytes, closely approximates the blood picture previous to

the operation.

Sooner or later in almost all of the cases of splenectomy Sooner or later in almost all of the cases of splenectomy for splenic anæmia or Banti's disease a lymphocytosis has been noted. This had been looked upon as compensatory. In many cases the lymphatic glands became enlarged. The high percentage of large mononuclears in my case was rather unusual, but had also been noted in other cases. I have as yet found but very few eosinophiles. In the majority of the cases an increase has been noted. In one of the cases reported by Harris they numbered 14.4 per cent.

Pathological report: The spleen was sent to Professor H. S. Steensland. He reported: "The hardened spleen weighed 365 grammes. Microscopically it showed the usual changes found in chronic splenitis. There was nothing distinctive in the pathological changes—endothelial cells filling the pulp spaces, as observed by Gaucher, Harting and others were not accept."

cells filling the pulp spaces, as observed by Gaucher, Harris, and others, were not present."

Examination January 21, 1908, five and one half months after the operation: The patient showed a marked improvement in her condition. Her color was better. The brown spots had entirely disappeared. She weighed TI. pounds—a gain of forty pounds. Her appetite was good. She could eat anything without being distressed. Previously she had to be exceedingly careful. Menstruation was now regular. Before she was very irregular and always lost much blood. She was, however, still anæmic, and tired easily. There was also a great deal of tenderness and tired easily. There was also a great deal of tenderness along the bones of the forearms. The lymphatic glands were not enlarged, nor was the thyreoid. There had been no change in the gastric secretions. The hydrochloric acid and the ferments were still absent. The leucocytes were about normal. The hæmoglobin was also slightly increased.

The marked improvement in the general condi-

| Date. | , mookooko Leert. | Red blood Per cent. | White bloo I corpuscies. | Polymorpho Pert. | at conducting Per cent. | Per cent. | Sosinophiles. | Year cent. |
|---------------------------|-------------------|---------------------------|--------------------------|------------------|-------------------------|-----------|---------------|------------|
| February 4, 1904 | 70 | 3,680,000 | 3,600 | 17.5 | 46 | 32.5 | 4 | |
| October 4, 1904 | 80 | 4,800,000 | 1,600 | 13 | 46 | 40 | i | |
| October 15, 1904 | 70 | 4,700,000 | 600 | 40 | | | | |
| November 20, 1900 | 40 | 3,040,000 | 1,200 | | | | | |
| January 29, 1907 | 30 | 2,300,000 | 1,250 | 3.4 | 5 1 | 1.5 | 1 | |
| February 23, 1907 | 35 | 2,700,000 | 1,855 | 16 | 51) | 2.3 | | |
| July 5, 1907 | 40 | 3,000,000 | 1,700 | 28 | 40 | - 3 | 1 | |
| August 4, 1907 | 45 | 3,390,000 | 1,700 | 20 | 4 - | 26 | | |
| August 5, 19eSplenectomy. | | | | | | | | |
| August 0, 1907 | 5.5 | 4,000,000 | 14,250 | 78 | 1.2 | 10 | | |
| August 7, 1907 | 5.5 | 4,000,000 | 15.50 | 7.5 | 14 | 1 (| 0.5 | 0.5 |
| August 9, 1907 | 5.5 | 4,001,000 | 19.500 | 76 | 11 | 1.2 | 0.5 | 0.5 |
| August 10, 1907 | 0.0 | 4,050,000 | 15,000 | 78 | :0 | 1.2 | | |
| August 11, 1907 | 6- 3 | 4,000,000 | 14,000 | 72 | 13 | 14 | | 1 |
| August 14 1907 | CHID | 4,000,000 | 11,500 | 60 | 1.) | 2.5 | 0.5 | 0.7 |
| August 17, 1907 | 5.5 | 4,010,000 | 16,000 | 70 | 0.2 | : 1 | | I |
| August 24, 1907 | 00 | 4.000,000 | 10,000 | 75 | 1.2 | : 2 | I | |
| August 27, 1907 | 0.0 | 4,030,000 | 11,000 | 60 | 17 | 20 | 0.5 | I.5 |
| August 31, 1907 | 60 | 4,000,000 | 10,000 | 60 | 20 | : 0 | | 1 |
| September 5, 1907 | ho- | 3,450,000 | 10,500 | 0.0 | 2) | 10 | 0.5 | 0.5 |
| September 10, 1917 | 60 | 4,060,000 | 8,000 | 66 | :9 | 1.2 | 0.5 | 0.5 |
| September 19, 1907 | 5.5 | 3,750,000 | 9.500 | 40 | 37 | 16 | 0.5 | 0.5 |
| September 24, 1907 | 5.5 | 3,700,000 | 11,000 | 34 | 44 | 20 | I | 1 |
| October 28, 1907 | 60 | 4,170,000 | 1.000 | 31 | 47 | 10 | | |
| December 11, 1907 | 50 | 3,340,000 | 10,000 | 3.5 | 45 | 10 | 0.5 | 0.5 |
| January 15, 1908 | 5.5 | 3,500,000 | 10,500 | 40 | 3.3 | 10 | 0.5 | 1.5 |
| January 21, 1908 | 00 | 3,700,000 | 9,500 | 46 | 35 | 18 | 0.5 | 0.5 |

tion and in the blood picture following splenectomy in this case argues strongly in favor of the spleen being responsible for many of the symptoms. Just how the spleen influences the anæmia is still a question. Normally one of the functions of the spleen is to destroy the red blood corpuscles. In splenic anæmia it is believed that there is an increased de-Whether this is brought about by an enzyme or another agent is undetermined. The leucopenia must also be credited to the spleen. The marked leucocytosis following its removal cannot be explained in any other way. But we do not know whether the white cells are destroyed in the spleen, or whether the spleen secretes a toxine which destroys them in the circulation, or whether it secretes a toxine that has an inhibitory action on the white cell production in the bone marrow and lymphatic glands. The sudden change from leucopenia to leucocytosis would best be explained by the latter assumption. Splenectomy in itself is not a serious operation. In constitutional diseases like leuchæmia and cirrhosis of the liver, in which the enlarged spleen is only a part of a general condition, its removal cannot effect a cure. In splenic anæmia and Banti's disease, the spleen seems to be, in a measure at least, responsible for the production of the symp-Here its removal occasionally cures and usually benefits. Armstrong, in 1906, collected from the literature thirty-two cases of splenic anæmia and Banti's disease subjected to operation. There were twenty-three recoveries and nine deaths. Since then Carr has reported a successful case, but without any blood findings, and Torrance another.

I append a table of blood counts. In classifying the white cells under lymphocytes both the large and small lymphocytes are included. The large mononuclears include the transitionals. The latter cells were very large and the nucleus deeply indented. Occasionally a cell with large amphophile granulations was seen.

A letter received from the patient, dated May 14th, states that she is better in every way since I last saw her. Her appetite remains good, her color is better, the cedema and soreness have entirely disappeared.

Dr. L. A. Gould, of Schenectady, who has her under

observation, in a letter dated May 19, 1908, says: "I have observation, in a letter dated may 19, 1908, says. I have seen Miss M. several times during the past ten days. She looks much better than I have ever seen her before. I made a blood count a week ago and found: Hæmoglobin, 68 per cent.; red blood corpuscles, 3,900; white cells, 9,300. Differential count: Large mononuclears, 13,5 per cent.; no proposed parts of the proposed small mononuclears, 53.5 per cent.; polymorphonuclears, 31.5 per cent.; eosinophiles, 1.5 per cent."

717 EAST GENESEE STREET.

Our Beaders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXVIII.—How do you treat acute coryza? (Closed

LXXVIII.—How do you treat sick headache? (Answers due not later than October 15, 1908.)

LXXX.—How do you treat asphyxia neonatorum? (Answers due not later than November 16, 1908.)

swers due not later than November 10, 1908.) Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred moveds. words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every to day one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberly to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION. The prise of \$25 for the best essay submitted in answer to question LXXVII has been awarded to Dr. Maxwell S. Simpson, of Titusville, N. I., whose article appeared on the prise of \$25 for the prise of \$25 for the prise payable to the prise price of the prise price of the price o

page 599.

PRIZE QUESTION LXXVII.

THE TREATMENT OF VARICOSE ULCER.

(Conc'uded from page 052.)

Dr. Austin Hogan, of Johnstoren, N. Y., says:

The proper and comprehensive treatment of varicose ulcer concerns itself not alone with measures and remedies directed to the cure of an ulcerated area, but (1) devises ways and means of combating and controlling the factors which enter into the causation of the condition; (2) takes into consideration the condition of the ulcer as regards (a) infection, (b) exuberant granulation and induration, (c) inflammatory reaction and bedema, (d) extent and involvement of underlying structures, as bones, joints, etc.; (3) endeavors to improve the blood supply by means of (a) rest, (b) elevation, (c) supportive measures, as intermittently applied elastic pressure, application of solidifying pastes to enveloping gauze bandages (Unna's method), compression, excision of venous trunks, and (d) cardiovascular medication; and (4) institutes prophylactic measures operating against a return of the ulcer as of prime importance in obtaining a permanent cure.

Important factors entering into the production of varicose ulcer are: (1) Hereditary influences; (2) age, sex (women past middle life); (3) local causes, injuries, femoral phlebitis, deficient innervation; (4) impediments to the venous flow, as constricting bands around the legs, faulty positions (crossing the legs), constipation, pelvic tumors, childbirth, and occupations requiring standing or straining.

Merest mention of some of these is all that is necessary to at once suggest simple and well known expedients for their correction and removal, while others (heredity, age, sex, childbirth, etc.) unchangeable in themselves are of value in directing the patient's mode of life so as to provide an efficient prophylaxis, and the local causes are subject to modifying influence if we exercise greater concern and care in this treatment, particularly in those afflicted with one or more predisposing factors.

It is not the purpose of the question, nor of this paper, to discuss the many well known ways advocated in the literature to meet the indications and subdue varicose ulcer, but the following conclusions have a bearing on any treatment promulgated: (1) The "pernicious activity" of frequent renewals is the most unfavorable criticism against the use of ointments, lotions, and pastes of various compositions. (2) In regard to operative measures, that while excision of venous trunks and nerve stretching are thought to do greater good than is attendant upon the rest enjoined by any operation; and (b) amputation is considered good surgery where there is extensive loss of substance associated with involvement of bone and ankylosis of the ankle joint, skin grafting is only necessary where there is very unusual loss of cutaneous and subcutaneous tissue. (3) That there is much merit in the imbrication of one inch adhesive straps over the ulcer, or the application of a rubber dam with superimposed compresses kept moist with boric acid solution, because they, in a measure, exemplify the principle underlying correct treatment.

The simplest treatment to meet indications and produce the desired result with least inconvenience to the patient is to be preferred, so in the morning before rising, when swelling and cedema are least, wash the leg with tincture of green soap, shave off the hair, rinse with sterile water, dry, and apply carbolic acid, full strength, to the ulcerated area; after it has turned white, neutralize with an excess of absolute alcohol, rinse again with sterile water,

apply a compress saturated with alcohol, and envelop the whole foot and leg in a sterile water com-

After twelve hours, curette any exuberant granulations, incise an indurated base or edge, taking care not to tap any varicosity, and apply wet compress moistened with nominal saline solution, boric acid solution, or corrosive mercuric chloride solution (1 in 5,000 or 10,000), or, if you prefer, cataplasm of kaolin; envelop all in oil of silk covering, keeping the patient in bed with the leg elevated.

After twelve to eighteen hours more have elapsed, remove all dressing, thoroughly dry with absorbent cotton or gauze sponges; apply thick coating of powdered calomel, and cover with a thin layer of absorbent cotton that has been shredded or teased to the consistency of finest cobweb; on top of this another thick coating of powdered calomel and again the thin layer of teased absorbent cotton; once more the calomel and again the cotton; and so on till we have five to ten layers of calomel immeshed in shredded absorbent cotton. Now place over all one or more liberal pads, one half to one inch thick, of absorbent cotton, and hold in place by a gauze bandage smoothly and snugly applied from the arch of the foot to the head of the tibia. This in turn is held firmly in place by a thin strip (one quarter inch wide) of adhesive plaster wound spirally from the foot, making several turns about the leg, not crossing the ulcer at any place, and attached above the bandage to the skin near the knee.

Every morning apply evenly and firmly, from foot to knee, a web elastic bandage, chosen because of the ability of a bandage to meet a reduction in volume and on account of its porosity, which allows transpiration and evaporation from the sound portions of the limb. This is to be removed on retiring each night.

After three days of enforced rest, with the leg elevated, if there has been no disturbance of the gauze bandage, etc., during the process of "taking" or "gluing," there is produced by the action of the serous exudation on the calomel and cotton meshes in conjunction with the intermittent elastic pressure of the 12 to 18 hour day bandage, an intimately adherent, relatively impervious dressing that promotes normal tissue tension and normal circulatory conditions as is evidenced by the cessation of all exudation and the abolition of any tendency to swelling and œdema, even under strain of the extremely liberal amount of standing or walking incident to ordinary occupations, so that the patient can pursue his vocation with no other attention to the leg than the simple adjustment of the web elastic day bandage.

After leaving in place for six weeks, remove the entire dressing, which, extremely adherent before, separates easily now, disclosing a somewhat moist, pearly or bluish white ephithelial surface, where previously existed the ulcer. Dry this well with absorbent cotton; expose to the air for several hours or more, and apply any drying powder; simple cornstarch answers every purpose; cover with thick cotton pad, over which place a piece of muslin somewhat larger, and hold all in place by two strips

of adhesive plaster, one passing above the level of the ulcer, the other below, and attached at the sides

to the skin of the leg.

Every morning apply the web elastic day bandage as before, to be removed on retiring each night, and six months or more of this simple after treatment will establish a sound cicatrix and wonderfully correct any tendency toward a reappearance of the lesion.

The administration thrice a day of strychnine (grain 1/30) in conjunction with Fowler's solution (m ii-v) or potassium iodide (grain ii-v) may be regarded as valuable auxiliary measure not to be overlooked.

Summary.

I. Take cognizance of the predisposing factors entering into its production, and institute prophylactic measures operating against its return as of prime importance in obtaining a permanent or true cure.

2. Avoid any treatment involving "pernicious activity," whereby the loss to repair is, obviously, greater than the gain.

greater than the gam.

3. Meet the indications as presented by the con-

dition of the ulcer.

4. The simplest treatment to meet these indications and produce the desired result with least inconvenience to the patient is to be preferred.

5. Intermittent, elastic pressure of twelve to eighteen hours' duration; to correct the arterial

ischæmia and venous hyperæmia.

6. Produce normal tissue tension and normal circulatory conditions by an adhering, protective, relatively impervious, slightly antiseptic dressing, preferably dry, supplemented by the intermittently applied elastic support to the venous flow.

7. Calomel immeshed in cotton—not cotton impregnated with calomel—subjected to the action of serous exudation and elastic pressure makes such a

dressing.

8. Calomel, shredded cotton, and web elastic day bandage, applied in the manner stated, will cure the

9. Corn starch, cotton pad, and web elastic day bandage, worn for six months or more, will keep it healed, and wonderfully correct any tendency toward a reappearance of it.

10. The administration of strychnine in conjunction with Fowler's solution or potassium iodide may be regarded as a valuable auxiliary measure not

to be overlooked.

Dr. Herman W. Coney, of Montreal, Can., writes:

General.—Insist on absolute rest in bed, with limb elevated to favor the return flow of blood. Give a liberal diet—plenty of good, plain food. Keep the bowels well opened. Iron and strychnine tonics if indicated. Calcium chloride in five grain doses, three times a day, for a few days appears to improve the condition of the blood and favor healing.

Local.—If there is much inflammatory reaction apply moist bichloride or boracic dressings for a few days till this subsides. The limb should then be thoroughly scrubbed with soap and water, shaved, and washed with some antiseptic lotion.

All dead skin and scabs should be cleaned away. If the base of the ulcer is indurated, or covered with unhealthy granulations, scarify with a sharp scalpel, or, better still perhaps, though this may require an anæsthetic, scrape thoroughly with the currette. An ointment composed of balsam of Peru, a drachm to the ounce of lanolin, should then be applied on pieces of lint cut to the exact size of the ulcer, covered with rubber tissue extending an inch or so beyond the edges of the lint, and the whole supported by a firm bandage reaching from the toes to the thigh. This dressing should be changed daily. Sometimes it seems well to vary the treatment, and for a day or so red wash may be used in the same manner, or aristol may be dusted on. In the case of very large ulcers skin grafting by Thiersch's method should be employed; the grafts being conveniently taken from a neighboring part of the leg, so the one dressing may do for both.

Prophylactic.—To prevent recurrence, or in some cases to aid in healing, an inch or so of the thickened and tortuous veins should be excised through small incisions at various points. Keep the patient in bed after this operation till healing is complete, to guard against embolism of vital organs; and rigid precautions must be taken against infection, as septic thrombosis might result. A French crèpe bandage should be worn by the patient after the ulcer heals, to support the circulation of the part. This bandage has the advantage that it may be taken off and cleansed as required, and it

affords firm, even pressure on the limb.

Dr. C. L. Sigler, of Pinckney, Mich., remarks:

The first essential in the treatment of varicose ulcers consists in the relief of the varicose veins causing the affliction. In mild cases a properly applied rubber or elastic woven bandage will so support the weakened veins that the ulcer will heal with little or no additional treatment. In more severe cases it may be necessary to institute more radical treatment, as the ligation or excision of the affected veins. At any rate, it is useless to try to heal the ulcer without first relieving the primary cause, and in many instances this may be done without putting the patient to bed, although rest will always facilitate the cure.

If the ulcer is recent, healthy, and has a tendency to heal little more is needed than to relieve the cause and perhaps apply some simple antiseptic powder, over which should be placed one or more thicknesses of sterile gauze. The bandage should then be put in place the first thing in the morning before the limb becomes at all swollen or congested, and should not be removed until the patient is

ready to retire at night.

If a pure rubber bandage is used the ulcer should be covered with the gauze, as otherwise the close contact with the secretions will aggravate the tendency to eczema, which almost invariably exists. The ulcer should be cleansed night and morning with warm water, to which has been added carbolic acid in the proportion of 1 to 40. If the ulcer is old and sluggish, the application of hydrogen peroxide will aid the cleansing and stimulate new granulations. Should the granulations be abundant

and watery the cleansing should be followed by the application of silver nitrate, or stick of copper sulphate. When the ulcer is deep, with a hard raised border, relief is often obtained by first paring or incising this border in several places, then drawing the edges in with several inch or half inch strips of adhesive plaster, care being taken that these are so placed that they will not interfere with the circulation.

If the healing does not take place in a satisfactory manner, skin grafts may be applied after the ulcer is in a healthy condition. These should be covered with a sterile dressing, moistened with a saline solution, over which is applied the usual bandage, and the patient kept in bed. In all cases the bandage should be begun at the toes and applied at least as far as the knee.

When the ulcer is quite or nearly healed a well fitting elastic stocking may be substituted for the bandage, but before this a bandage is to be preferred if the patient has ordinary skill in applying it.

Too much emphasis cannot be placed upon the fact that the prime factor in the cure of this class of ulcers is the relief of the varicose veins, and no benefit may be expected until these are relieved.

Dr. A. H. Powers, of Boston, observes:

A varicose ulcer can, like many another ill, be best treated before it appears. Where the veins of the leg are enlarged and tortuous, they should be so treated that the skin does not break and the ulcer commence. Occupation may need to be changed, for those who are continuously standing, like motormen, are the ones most subject to this trouble. Walking improves the circulation. Sitting and lying are the postures most favorable to normal veins.

Next to occupation and posture, I believe, that careful care of the skin is the best prophylactic. A leg carefully bathed every day has its circulation improved by the process, and in case by any accident the skin is broken there are fewer germs at hand to prevent the repair, especially if the leg is bathed with equal parts of alcohol and water. This bathing is very important. Lastly, some support of the leg is necessary. The most effective and satisfactory support is found in a well made and well fitting elastic stocking, but a light flannel bandage cut on the bias and carefully applied before getting out of bed will serve nearly as well, but is more troublesome, and on that account liable to be neg-

But if the bandage is of value before ulceration it is doubly so afterward. It then serves the double purpose of supporting the veins and holding the chosen dressing in position, and hence must extend from the toes to the knee or even higher if the veins are enlarged above that point.

If the ulcer is large and discharging profusely an elastic stocking is almost surely soiled and the dressing and discharges so damage the rubber that the elastic stocking has here a short period of usefulness, while a bandage may be washed and used many times. What the dressings shall be will depend on everal factors. The dressing must pro-

tect the tissues beneath and should be aseptic or antiseptic. If antiseptic it must be mildly so, for the cells of the ulcer are of so low a vitality that a strong antiseptic may be very injurious by killing the cells with which it comes in contact. The dressing should be capable of absorbing the discharges, else it may prove an injury by holding a septic discharge in contact with the ulcer. Plain sterile gauze, with a small amount of some sterile, oily substance just to prevent the sticking of the dressing when removed, is often the ideal one. A paste like the following will often serve a good purpose and especially on the skin about the ulcer:

B Salicylic acid, I to 3 per cent, Zinc oxide, Starch, ... ää 3iv; Petrolatum, ... 3j.

The starch in this paste renders it much more absorptive than the zinc oxide ointment, which is tried so frequently and often proves disappointing. The ulcer should be cleansed once or twice daily and not exposed to the air for a longer time than necessary, else a crust will form and irritate mechanically the tissues beneath.

Moist dressings may prove of much benefit for a time, but must not be continued for too long a time, as the ulcers will rarely heal completely under them, though marked improvement may be

If, in spite of careful support by bandage, painstaking cleansing of the ulcer, and a clean absorbing dressing, the ulcer does not improve, there remain other surgical means, only two of which I shall mention.

Curretting of the base of the ulcer, under an anæsthetic, especially if the leg is afterward elevated and the patient kept in bed, will cure or permit Nature to heal some of these ulcers; but if the ulcer is deep and has existed for considerable time skin grafting after Thiersch's method seems indicated, especially as the ulcer seems to be less liable to relapse. Along with this there may occasionally be the extirpation of some large tortuous veins of the leg and thigh with good results.

····· Correspondence.

LETTER FROM LONDON.

Doctors' Fees .- The African Sleeping Sickness .- Hot .1ir Treatment in the London Hospital.

LONDON, September 22, 1908.

The Daily Telegraph has lent its columns for the last few weeks to the discussion of the question of medical fees, and a large number of interesting letters have appeared from all classes of persons bearing on the question. The discussion was called forth by the report of an inquest held on the body of a man who cut his throat. The landlord of the house in which the man lived found him bleeding and hurried for a doctor, but was told by the medical man that he would not attend unless his fee of five shillings was first paid.

The landlord refused to be responsible for the payment, and the medical man did not go. The patient was removed by the police to the hospital, where he ultimately died. The coroner, Mr. Schröder, sensibly observed that "of course" medical men were not bound to attend without payment, and added that he had recently heard of a medical man who had attended twenty-three cases of supposed emergency without at first demanding his fee, with the result that he received payment only in two cases. In the particular case before the coroner the emergency did not appear to have been very great, for the man lived to be taken to a hospital and ultimately died there from delirium tremens. The remarks of the coroner on doctors and their fees brought forth a large number of letters. On the whole, these letters were favorable to medical men, and their rights in refusing to attend emergency cases unless their fee was paid were admitted. One of the writers drew a rather curious parallel between a medical man summoned to a case of attempted suicide and a miner summoned to assist at the rescue of comrades from a pit. The writer was unable to perceive that the miner went to the aid of his comrades because he was liable himself to be in similar straits at any time. On the whole, however, the correspondence bore striking testimony to the general benevolence and charity of the

members of our profession.

There is no doubt, however, that our charity and benevolence have been grossly abused by a large section of the public, and this state of affairs has been principally due to the medical men themselves. They have so accustomed the people to regard illness as an emergency in which the sufferers are morally entitled to aid from the first person at hand who is competent to render it that the question of remuneration has been suffered to remain in the background and only regarded as a secondary consideration. It must be admitted that it is an exceedingly difficult task for medical men to conduct their work upon absolutely business lines. There are no doubt circumstances in which the question of remuneration should not be considered, as in serious accidents involving many people and in which the first thing to be thought of would be the rescue of the sufferers or the treatment of the injuries they had sustained. At the same time there is doubtless truth in the observation that medical men as a body are not so businesslike in the keeping of accounts or in the exaction of payment as they might be. The Royal College of Physicians does not allow its members to sue for fees. Such a rule on the part of one of the most important of medical corporations lends countenance to the view that strict medical etiquette is incompatible with the demanding of fees. If such is the attitude of medical men themselves, it is no wonder that the public as a whole is disposed to regard the settlement of medical accounts as a matter which can be postponed to an indefinite period. It is only by the united action of medical men that this state of affairs can be remedied. An interesting example of the power of concerted action on the part of medical men is shown by the following incident which occurred recently. The Education Committee of Newcastle decided to advertise for a junior

medical officer at a salary of £200 a year. The British Medical Journal, however, refused to insert the advertisement at any price, on the ground that the salary offered was below the recognized rate of pay. The result was highly satisfactory, for not only did the committee readvertise the junior post at £250 a year, but they increased the existing officer's salary from £225 to £250 per annum. This gratifying result proves conclusively that concerted and firm action will suffice in many instances to bet-

ter the lot of the medical profession.

At the meeting of the British Association the subject of sleeping sickness was dealt with at a joint meeting of the Physiological and Zoological Sections. Mr. R. Newstead opened with a paper on the life history of tse-tse flies. The habitat of these flies was confined to certain definite belts of land, or fly tracts, which were mostly low lying, hot and humid. The flies did not travel very far from their habitat, perhaps about 300 yards, and never more than a mile. Dr. Nerenstein dealt with the action of atoxyl *in vivo* and *in vitro*, and confirmed Koch's and Ehrlich's experiments with regard to the resistance acquired by the trypanosomes to atoxyl. Dr. Moore dealt with the action of various drugs in trypanosomiasis, and stated that at the Liverpool School of Tropical Medicine they had obtained better results with mercury than with atoxyl. They also had obtained encouraging results by combinations of arsenic and antimony.

For some time negotiations have been in progress between the British and German governments as to an agreement to act together in combating sleeping sickness in their African possessions, and both governments have now agreed to the terms of a convention which will come into force on November 1st. The convention, which is for a period of three years, provides that British and German doctors and the officials in charge of the concentration camps shall keep in touch with one another to compare the results of their various researches. Segregation camps will be established on either side of the international boundary, while infected natives will be prevented from passing into uninfected districts, such persons being detained and segregated. The convention also provides for the notification to the officials of both governments of all infected areas and for taking effective measures for dealing with crocodiles or other animals which it may be found are the food of the fly which carries the disease.

The London Hospital is about to have a complete installation of hot air appliances similar to those in use at Carlsbad. This hospital is one of the best equipped in the country, and this installation will add yet another department of special treatment to the institution, which was the pioneer in the Finsen light treatment. The outfit is the gift of the Princess Hatzfeldt, and is being constructed at Wiesbaden. It is hoped that it will be ready for use in the London Hospital by October. Dr. Tvenauer, of Carlsbad, is the inventor of the apparatus, and he has promised to superintend its erection at the London Hospital. This treatment has been found very beneficial in painful rheumatic and gouty conditions, and particularly in old standing cases of rheumatoid arthritis and joint rheumatism.

Therapentical Aotes.

Treatment of an Acute Asthmatic Attack.— Mendel (Journal de médecine de Paris, September 5, 1908) remarks that the crisis may be checked by plunging the hands of the patient in very hot water, or the application of a mustard footbath. The fumes from a teaspoonful of the following powder ignited on a plate should be inhaled:

| 0 | | | |
|------------------|--------------------------|--|----|
| \mathbf{P}_{i} | | nitrate, | s; |
| M. | Pulverized Pulverized | stramonium leaves, belladonna leaves, | v. |

Pron's asthma remedy, a powder to be ignited and the fumes inhaled, differs from the foregoing. It reads as follows:

| 70 | D 1 1 1 | 1 11 1 | - 1 | | | | | | | | | | |
|-----|------------|-----------|-------|------|------|-----|----|---|-----|-----|-------|------|---|
| B | Pulverized | belladoni | 1a 16 | eav | es, | | | | | | | | |
| | Pulverized | stramoni | um | lea | ves, | | | | | | āā 3 | 1155 | ; |
| | Potassium | nitrate, | | | | | | | | | | 3ss | ÷ |
| | Pulverized | opium, | | | | | | | | | gr. | XV | |
| 3.5 | C Ome ton | coconful | to 1 | 00 1 | anii | had | in | 0 | 001 | 100 | r and | the | ρ |

fumes inhaled.

If the bronchial secretion is very profuse the fol-

| | ng pills | | | | | | | | | | | | |
|---------------------------------------|-----------|-----------------------|---------|------|------|------|--|------|---|---|----------|-----|--|
| $\mathbf{P}_{\!\scriptscriptstyle F}$ | Extract | | | | | | | | | | | | |
| | Extract | | | | | | | | | | | | |
| | Extract | | | | | | | | ٠ | ٠ | .gr. | 155 | |
| 3.5 | -t for mi | n | Jo sere | | | | | | | | | | |

Sig.: One pill three or four times daily.

When the attack is very severe recourse is had to pyridine, a colorless and very volatile fluid of a strongly nauseating odor. About ten drops are thrown on a handkerchief and the vapor inhaled, or better a teaspoonful of the fluid is poured into an open saucer placed in the middle of the room occupied by the patient.

Vaginal Injection in Uterine Cancer.—The following formula is credited to Delettrez in Bulletin général de thérapeutique for September 23, 1908:

| | Boiling water,Oii; | |
|----|---|--|
| | Oil of turpentine, | |
| | Calcined magnesia, | |
| M. | Allow to cool to about 86° F. before using. | |

[The oil of turpentine should be intimately incorporated with the magnesia before adding the boiling water.]

To relieve the pain of uterine cancer it is recommended by Lutaud (Bulletin général de thérapeutique, August 23, 1908) to administer the following mixture:

| B | Tincture | of thuja,3i | , |
|-------|-----------|---|---|
| | | of potassium arsenite, | |
| | | acacia, | |
| | | water, | |
| M. | et. Sig.: | One teaspoonful three times a day befor | e |
| monle | | | |

The Hypodermic Administration of Potassium Bromide.—It is frequently desired to administer potassium bromide hypodermically, owing to the inability of the patient to take a solution of the salt by the mouth, on account of its taste or by reason of its disturbing effect on the stomach. The objections to injecting solutions of the salt beneath the skin lay, heretofore, in the irritation set up by strong solutions and the comparative uselessness of weak edutions. Rebizzi, of Florence (La Semaine

médicale, September 23, 1908), has devised a formula which provides a solution that may be used hypodermically without any ill effect and which at the same time is strong enough to provide an ordinary dose of the salt (15 grains). The formula follows:

| 0440 | | | | | | | | | | | | | | | | |
|--|-----------|---|--|------|------|--|--|--|--|--|--------|----|---|-----|------|-----|
| $\mathbf{P}_{\!\scriptscriptstyle{k}}$ | Potassiu | | | | | | | | | | | | | | | |
| | Sodium | | | | | | | | | | | | | | | |
| | Carbolic | | | | | | | | | | | | | | | |
| | Distilled | | | | | | | | | | q. | S. | 1 | a c | l 3i | 11. |
| 7.4 | ft soluti | 0 | | | | | | | | | | | | | | |

Thirty minims of a solution prepared after the foregoing formula will contain fifteen grains of potassium bromide, and this amount is directed to be injected into the front part of the thigh. If it is desired to administer thirty grains at one dose an injection of thirty minims is made in each thigh, the needle being made to penetrate rather deeply. The proportion of bromide should be slightly reduced in the winter, as the cold weather may cause precipitation of some of the salt. This, however, can be overcome by heating the container.

In this solution the carbolic acid acts as a local anæsthetic and keeps it sterile, but its principal advantage lies in the prevention of the diapedesis which is generally observed to follow injections of potassium bromide. As for the sodium sulphate, its function is to facilitate absorption and favor the elimination of the carbolic acid. Rebizzi has never noticed any sharp pain follow the injection; in rare cases a slight local cedema has been produced, which is easily removed by the application of ichthyol ointment.

The Symptomatic Treatment of Cancer of the Stomach.—Rummo (Studium, March, 1908; Revue de thérapeutique, September 15, 1908) prescribes the following mixture as a stomachic tonic and digestive medicine for patients afflicted with cancer of the stomach:

| B | Fluid extract of cinchona, Fluid extract of kola, Fluid extract of coca, Fluid extract of condurango. | .āā 3iii |
|----|--|---------------------|
| | Tincture of nux vomica, | .āā 3iv |
| VI | Oleosaccharure of peppermint, { Oleosaccharure of vanilla, Syrup of orange peel,enough to m | .āā ǯiii nake Oi |

To the syrup of orange peel add the mixture of other ingredients; allow to macerate for twenty-four hours and filter. Dose: One liqueur glassful before the two principal meals.

To Control Vomiting in Consumptives.—Marfan, (cited in *Journal de médecine de Paris* for September 26, 1908), gives four to five drops of the following solution in a little water:

| 11 | Alcohol, | 1 |
|----|---|---|
| | Tincture of iodine, Carbolic acid, crystals, |) |
| M. | | |

For Gastroenteritis.—The following is recommended to be given in cachets twice daily with meals:

| P_i | | | |
|-------|-----------|------------|------------|
| М | Magnesium | hydroxide, | gr. viiss. |

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HUMAN AND BOVINE TUBERCULOUS DISEASE.

There are few if any physicians, we are convinced, who believe everything they see in the newspapers, but the general public, knowing nothing of the facts, is prone to accept press statements as to medical matters as correct. This credulity on the part of the community is particularly to be deplored in its relation to reports of the proceedings of the recent International Congress on Tuberculosis which, so far as papers and discussions were concerned, closed last week, because one of the chief functions of the congress was that of diffusing knowledge among the people, and without such knowledge the campaign against tuberculous disease would have to be carried on with little or no help from the public.

In the matter of the Washington congress, the newspaper reporter seems to have given free play to his imagination, and the papers have been almost unanimous in circulating false reports. They went so far as to put a striking statement into the mouth of an eminent physician who was not even present on the occasion when he was said to have proclaimed it. They have sedulously given their readers to understand that a rancorous controversy took place as to the reality of human tuberculous disease of bovine origin, and have pictured almost all the other participants in the congress as manifesting violent opposition to Koch's well known views on the subject. The actual proceedings did not justify such a picture. Koch was greeted with general enthusiasm and with the deference due to such a distinguished man of science. Those who dissented from some of his views on the relations between human and bovine tuberculous disease expressed themselves courteously and with no more warmth than the vast importance of the subject called for.

Koch does not seem to have receded essentially from the position which he took in London six years ago. He does not deny that the human and the bovine tubercle bacilli are of one species, though he still insists that they show certain recognizable differences. To array the view of those who do not agree to all that Koch infers as "the American view," as some of the newspapers have done, is grotesque, for Koch himself avows that it was the work of an American investigator, Theobald Smith, that led him to undertake his own researches concerning the differences between the one bacillus and the other, and the dissent from some of Koch's inferences has come quite as much from men of other nationalities as from Americans.

As we understand it, Koch admits the transmissibility of bovine tuberculous disease to the human subject, but insists that it has not yet been demonstrated that pulmonary manifestations of the disease occur when it is thus transmitted. Even on this point, however, Koch urges that further investigation be carried on, and he specifies the conditions which, in his opinion, ought to be observed in subsequent researches. Perhaps he is too rigid in his requirements and too sweeping in his deductions-and we think he is-but we cannot agree that the tenacity with which he clings to his fundamental proposition can justly be called obstinacy, as we have heard it termed. He has a right to demand that his position shall be refuted beyond a doubt before it is held to be utterly discredited. In the meantime, of course, the world must conduct the struggle against tuberculous disease on the assumption that he is mistaken; we must neglect no means to restrict the possibility of human infection from bovine sources.

THE ARMY CANTEEN.

At the sixteenth annual meeting of the Association of Military Surgeons of the United States Dr. Anita Newcomb McGee, formerly an acting assistant surgeon in the army, read a paper entitled Facts About the Army Canteen. The paper appears in the October number of the Military Surgeon. Dr. McGee tells us at the outset that her object in gathering the data which form the basis of her paper was to justify her in taking an active interest in the restoration of the canteen, but she has found that she is not warranted in taking such an interest. The chief feature of her conclusions, as it seems to us, is the inference that there has been such a slight difference between the amount of alcoholism re-

ported during the canteen years (1889 to 1898) and that reported since the abolition of the canteen as to show, in conjunction with other facts, that "the presence or absence of the canteen has a decidedly minor effect on drunkenness in comparison with other influences." Again, in closing the discussion, she declared that the official facts published by the War Department showed that the canteen was of insignificant importance in comparison with other causes affecting drunkenness and disease in the army. She is quite sure that, on the whole, the abolition of the canteen has not resulted in increasing the number of saloons in the vicinity of military posts.

The published discussion of the subject of Dr. McGee's paper shows a decided diversity of opinion among those who took part in it. Colonel Valery Havard expressed a sentiment which seems to us of far greater importance than the question of whether or not the abolition of the canteen has resulted in an increase of drunkenness among our soldiers. "My objection," he said, "to the present policy of excluding wine and beer from the canteen is that it renders the life of the soldier less pleasant, more irksome; it violates his personal liberty, that is, those rights to which all men are reasonably entitled. In regard to his eating and drinking, he ought to enjoy the usual privileges of any citizen, so long as he is not guilty of any excess which, in the opinion of his superiors, might be detrimental to his health or morals." Colonel Joseph K. Weaver, of the National Guard of Pennsylvania, presented data tending to show that beer drinking regiments were not so efficient as those that eschewed beer. Major Charles E. Woodruff pointed out that the sick reports did not show the amount of drunkenness. "We get very few cases in the hospitals," he said, "though since the abolition of the canteen they are more numerous and more violent," He added that the saloons around the post, which had not flourished during the days of the canteen, were "rich now if not more numerous." Major Woodruff thinks that the men enlisted during the last few years are of a class superior to those of twenty years ago, when, according to his observation, many old soldiers "got drunk as regularly as pay day came, and stayed drunk until their money was gone." He closed with this positive statement: "I know that the abolition of the canteen has increased drunkenness, and the drinking is done outside." Medical Director John C. Wise, of the navy, thought that the facts collected by Dr. McGee were convincing, and that the influence of the canteen in the Pennsylvania National Guard was not conducive to discipline or efficiency, also that the drinkers of wine and beer were "more susceptible to the unit rays and to digo tive di turbances.

HISTOPLASMOSIS

With the territorial expansion of the United States, opportunities for new research have been abundantly presented, although it is well recognized that our native veins have not yet ceased to yield important new "finds." Workers in the Philippines have brought together rich collections of rare and exotic diseases, and within very recent times the Panama Zone promises to show novelties of enduring interest. In the most recent issue of the Archives of Internal Medicine for September 15th, Dr. Samuel T. Darling, chief of the Board of Health Laboratory, Ancon, Canal Zone, Panama, describes a new parasitic protozoon Histoplasma capsulatum, which he has encountered three times during the past two years and a half in the Ancon Hospital.

The clinical phenomena induced by this parasite, as well as the tissue changes brought about, are suggestive of the Indian disease kala-azar, which has as a cause an interesting parasite, the Leishman-Donovan body, termed variously Leischmania Donovani and Piroplasma Donovani. This parasite (Histoplasma) is new and is the first recorded instance in the New World of a parasite of this type. It is to be regarded as a flagellated protozoon, and, so far as can be stated, it is an inhabitant of surface pellicles of tropical waters, probably derived from the intestinal tracts of insects.

Clinically, the disease is characterized by splenomegaly, emaciation, remittent temperature, and leucopenia. The individuals affected were two Martinique negroes and one Chinaman, all resident in the district for many years. In one a terminal bronchopneumonia brought about the fatal issue; in the others there were pseudogranulomata in the lungs. Thus in many respects the disease resembles kalaazar, though the pseudogranulomata of the lungs are not characteristic of the latter disease, and the parasite presents minute histological variations from the Piroplasma Donovani. The disease may be met with, Darling thinks, in unhygienic and insalubrious regions of tropical America, and sanitarians and tropical workers should be on the lookout for it.

THE BLOOD IN DIPHTHERIA.

It is generally held that myelocytes are more numerous in the peripheral blood in cases of diphtheria than in other infective diseases, and it has been stated that when the percentage of these cells reaches two or more a serious prognosis is warranted. Many authors, however, have dissented from these generally accepted statements about the hæmatology of diphtheria, which may be traced to a paper by Engel, which was published in 1897. In

a recent study of The Leucocytes in Diphtheria Before and After the Administration of Antitoxine. by Dr. Howard T. Karsner (University of Pennsylvania Medical Bulletin, September), no constant myelocytosis was discovered. The author concludes from an examination of thirteen cases of diphtheria, in which thirty-seven cell counts and differential leucocyte counts were made, that diphtheria is usually accompanied by a moderate leucocytosis. In extremely toxic cases and extremely mild cases this leucocytosis may be absent. The differential counts show nothing abnormal in the proportions of the various kinds of white corpuscles. Neither the degree of leucocytosis nor the proportion of the various types of cells indicates, except within very broad general lines, the severity of the infection or the probable outcome of the disease. The administration of antitoxine has no appreciable effect on the degree of the leucocytosis, on the proportion of the various forms of cells, or on the staining reactions of the celis.

CLINICAL OBSERVATION A LA SHERLOCK HOLMES.

In La Clinique for September 11th M. Léon Mac-Auliffe gives an entertaining sketch of the methods employed under the direction of M. A. Bertillon in the anthropometric measures for the identification of the criminals and vagabonds of Paris. It is not uncommon, he says, for a hundred arrested persons to be examined in the course of a forenoon. They are weighed and measured and photographed, as we all know, but the descriptive memoranda dictated by trained employees, or special agents, are of great importance in the data depended upon for subsequent recognition.

These special agents know nothing of medicine or of scientific anthropometry, but long experience has given them a wonderful ability in observing and describing such personal peculiarities as may serve the purpose of identification, so that they are veritable Sherlock Holmeses. With admirable precision they cry out the complexion, the general configuration of the face, the shape of its constituent features, the smallest scars, the appearance and size of birth marks, the signs of old bony injuries, etc. It is all done in the course of a few minutes, and M. Mac-Auliffe declares that it could not be better done by the most expert of clinical professors. He adds that no anatomist has ever exceeded the precision with which, in a few seconds, there are described the details of a person's ear, for example, the outlines of the helix, the antiragus, the lobule, and the folds of the anthelix. Thousands and thousands of such data have thus been recorded, says the author, but

there is as yet no distinctive criminal morphology, whatever Lombroso may have said to the contrary.

M. Mac-Auliffe argues that the acuteness and accuracy of observation displayed by these special agents might with great advantage be imparted to students of medicine and employed by them in detecting and recording the peculiar appearances presented by the sick. There can be no doubt, we think, that the lesson drawn by M. Mac-Auliffe is one that deserves to be impressed upon students and practitioners of medicine. The physicians of a generation or two ago were unquestionably more minute observers than we are to-day. We have learned to lean upon instruments of precision, almost to the exclusion of our ordinary powers of observation. Our regard for the results of the employment of such instruments is amply warranted, but it is foolish to disregard what we can see and hear and feel without them, for they are not always at our command. In no way can the young physician better train himself to become an expert diagnostician than by cultivating that attention to minutiæ which is the main characteristic of Sir Conan Doyle's famous detective. The deductive faculty will almost grow of itself.

THE ETHICS OF QUARANTINE.

It is stated in the Rassegna sanitaria di Roma for September 1st that Commendatore Santoliquido, director of the Italian Health Board, in the course of a recent interview granted by him to a representative of the Tribuna regarding the precautions taken to prevent an outbreak of cholera in Italy, digressed to relate the following incident:

Some time ago (no date mentioned) a steamer arrived at Naples with a party of American tourists on board. During the passage some deaths from smallpox had taken place. In order to avoid the discomforts of a prolonged quarantine for the rich passengers, the bodies were buried at sea and no report was made to the authorities when the ship docked. After disembarking at Naples, some of the party went to Rome and others to Florence, and the ship had orders to pick them up at Liverpool. In Rome some of the party fell ill with smallpox, and the sanitary authorities, on hearing of this, had them isolated immediately. As a precautionary measure, the authorities in Florence were put in possession of the facts, and without any fuss every person who had possibly come in contact with any of the party was vaccinated, including the hotel employees, the waiters of all the cafés in Rome, the street car conductors, and others. The disease disappeared and nobody was any the wiser. The ship was traced to Liverpool and the captain punished. "But," said the director, "he should have received a reward, because he showed to the whole of Europe how a disease might enter into Italy, but be isolated."

Evidently this particular commendatore is of a liberal and daring turn of mind; probably he would run a battleship through submarine mines without hesitation.

Rems Items.

Changes of Address.—Dr. W. C. Hollopeter, to 1411 Spruce Street, Philadelphia; Dr. C. A. Van Dervoort, to 1118 Pennsylvania Building, Philadelphia; Dr. Harris Weinstein, to 825 Lexington Avenue, New York; Dr. Edmund Russell, from Houtzdale, Pa., to Waterbury, Conn.

The Syracuse, N. Y., Academy of Medicine held a meeting on Tuesday evening, October 6th. Dr. Samuel Lloyd, of New York, read a paper entitled The Surgical Treatment of Post Pneumonic Abscesses of the Lung. Dr. Henry L. Elsner and Dr. G. M. Price opened the discussion.

Public Lecture at the New York Academy of Medicine.—Dr. Charles A. L. Reed, of Cincinnati, will deliver a public lecture at the New York Academy of Medicine on the evening of Thursday, October 29th. The subject will be The Character, Status, and Economic Value of a National Department of Public Health tional Department of Public Health.

The College of Physicians of Philadelphia.-At the stated meeting of the College of Physicians of Phila-delphia, held on Wednesday, October 7th, only the private business of the college was transacted. The librarian announced the addition of one hundred and fifty volumes to the library during the summer.

Alumni Association of Mount Sinai Hospital, Philadelphia.—At a recent meeting of the Resident and Ex-resident Alumni Association of the Mount Sinai Hospital, Philadelphia, the following officers were elected: Dr. Julius L. Werner, chairman; Dr. Benjamin H. Mauer, vice chairman; Dr. Michael Austin, secretary and treasurer; Dr. Jacob Levy, historian.

Contagious Diseases in Chicago.—During the week ending September 25, 1908, there were reported to the Department of Health 353 cases of contagious diseases, as follows: Diphtheria, 106 cases; scarlet fever, 74 cases; measles, 16 cases; chickenpox, 10 cases; typhoid fever, 70 cases; whooping cough, 18 cases; tuberculosis, 41 cases; diseases of minor importance, 8 cases.

American Chemical Society.—The New York Section of the American Chemical Society held the first regular meeting of the session on Friday evening, October 9th, at the Chemists' Club. Mr. Hudson Maxim delivered an address on the Warfare of the Future, in which he referred to the use of high explosives and torpedoes in wars, and exhibited some interesting explosive material.

Medical Society of the County of Ontario, N. Y.— The annual meeting of this society will be held in Canandaigua on Tuesday, October 13th, at 10:30 a. m. Dr. C. P. W. Merritt, of Clifton Springs, will deliver the annual address of the president. Dr. H. I. Davenport, of Canandaigua, will read a paper on Tests for Albumen. Dr. F. C. Busch, of Buffalo, will read a paper on Enzymes and Hor-The annual banquet will be served at the close of the meeting.

American Pharmaceutical Association.-The Philadelphia branch of this association announces that among the subjects which will be discussed at forthcoming meetings the subjects which will be discussed at forthcoming meetings of the association are the following: November 3d, Compounding and Dispensing, and the Sale of Liquors in Drug Stores; December 1st, The Use and Value of Pure Food and Drug Laws; February 16, 1909, The Transformation of Elements and the Modern Theories of Matter; April 6, 1909, The Drug Laboratory of the Bureau of Chemistry.

The Wesley M. Carpenter Lecture was delivered at the New York Academy of Medicine on the evening of Thursday October 3th by Dr. German Sims Woodhead

Thursday, October 3th, by Dr. German Sims Woodhead, professor of pathology in the University of Cambridge. The subject was Some Phases of the Evolution of Modern Preventive Medicine as Illustrated by the Present Cam-Preventive Medicine as Illustrated by the Present Campaign against Tuberculosis. It was originally announced that Dr. Andres Martinez-Vargas, of Barcelona, Spain, would deliver this lecture, but he was unable to be present.

The Obstetrical Society of Philadelphia.—A stated meeting of the society was held on Thursday evening, October 1977. The programme method of the following

by Dr. C. C. Norris: Buried Catgut, and a Subcuticular Stitch in Plastic Operations on the Perinaum, by Dr. Brooke M. Anspach: The Indications for Casarean Section as Determined by Antepartum Cephalometry, with a Brief Report of an Unusual Case with Positive Indications, by Dr. J. C. Applegate.

The Kentucky State Medical Association.-At the The Kentucky State Medical Association.—At the fifty-third annual meeting of this association, which was held in Winchester, Ky., recently, officers for the ensuing year were elected as follows: President, Dr. I. A. Shirley, of Winchester; first vice president, Dr. M. F. Coomes, of Louisville; second vice president, Dr. B. F. Parrish, of Midway; third vice president, Dr. J. C. Karrick, of Lexington; secretary, Dr. A. T. McCormack, of Bowling Green; treasurer, Dr. W. B. McClure, of Lexington. Louisville was chosen as the next place of meeting.

The Northwestern Medical Society.—A stated meet-

The Northwestern Medical Society.—A stated meeting of this society was held in Philadelphia on Monday evening, October 5th. The programme consistent of a "symposium" on diseases of the biliary passages, and papers on the subject were read as follows: Bacteriology of the Biliary Passages, with Special Reference to Typhoid Carriers, by Dr. R. C. Rosenberger; The Medical Aspect of Disease of the Biliary Passages, by Dr. J. C. Wilson; The Therapeutics of Diseases of the Biliary Passages, by Dr. E. Q. Thornton; The Surgery of the Biliary Passages, by Dr. J. Chalmers Da Costa.

The Campaign Against Tuberculosis in the United States is the title of a book of nearly five hundred pages recently published by the New York Charities Organization Prevention of Tuberculosis at the expense of the Russell Sage Foundation. The book contains a directory of institutions in which sufferers from tuberculosis are treated, and of organizations interested in the study, treatment, and prevention of the disease. The history of the growth of the movement for the prevention of tuberculosis is given, and abstracts from the legislation relating to this disease in force in the various States are included.

force in the various States are included.

The Health of Minneapolis.—During the month of August, 1908, there were reported to the Department of Health of the City of Minneapolis the following cases of transmissible diseases: Diphtheria, 72 cases, 8 deaths; scarlet fever, 10 cases, 0 deaths; smallpox, 3 cases, 0 deaths; typhoid fever, 8 cases, 3 deaths: tuberculosis, 33 cases, 24 deaths. The total number of deaths from all causes was 270, in an estimated population of 300,000, corresponding to an annual death rate of 9.60 in 1,000 of population. Of the total number of deaths 60 were of children under five years of age, and of these 35 were due to diarrhoal diseases. There were 18 still births.

Scientific Society Meetings in Philadelphia for the Week Ending October 171, 1908:

Monday, October 12th.—Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society.

Tussday, October 13th.—Philadelphia Pediatric Society;

Bothand Section Academy of Natural Sciences

Botanical Section, Academy of Natural Sciences.
Wednesday, October 14th.—Philadelphia County Medical

THURSDAY, October 15th.—Section in Gynæcology, College of Physicians; Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital; Section in Ophthalmology, College of Physicians.

FRIDAY, October 16th.—American Philosophical Society.

Frinay, October 16th.—American Philosophical Society.

The Windham County, Conn., Medical Association.—
The semiannual meeting of this association will be held at the Hooker House, Willmantic, Conn., on Wednesday, October 14th. The programme includes the following papers, in addition to the presidential address: Acute Specific Urethritis, by Dr. W. H. Judson, of Danielson; The Benefits of Saline Cathartics, by Dr. C. E. Simonds, of Willimantic; Psychotherapeutics, by Dr. Rienzi Robinson, of Danielson; The Diagnosis and Treatment of Certain Fractures, by Dr. Homer Gage, of Worcester, Mass. The officers of the association are: Dr. Robert C. Paine, of Thomson, president; Dr. John Weldon, of Willimantic. vice president; Dr. James L. Gardner, of Central Village, secretary.

The Buffalo Academy of Medicine.- The first regular meeting of the Section in Pathology was held on Tuesday evening, October 6th. Dr. Nathan Raw, of Liverpool, England, one of the delegates to the International Congress on Tuberculosis, read a paper on the Relation between Human and Bovine Tuberculosis

A stated meeting of the academy will be held under the auspices of the Section in Medicine on Tuesday evening, October 13th. Dr. Julius Ullman will present a report of the Committee on Contagious Diseases and Municipal Contagious Hospital. Dr. Robert J. Wilson, of New York, will read a paper on Contagious Disease Hospitals: Their Medical Contagious Disease Rospitals: Their Rospitals: Their Rospitals: Their Rospitals: Their Rospitals: Their Rospitals: Their Rospitals: T

New York and New England Association of Railway Surgeons.—The eighteenth annual meeting of this as-sociation will be held at the New York Academy of Medicine on November 17th and 18th, under the presidency of Dr. F. A. Stillings, of Concord, N. H. The first session will be devoted to a "symposium" on the following topic: What are the Causes Leading to Railway Accidents, and what Remedies can be Suggested? Eight papers will be read, and the general discussion will be participated in by a number of men who have given the subject careful consideration. Railway officials and members of the medica! profession are invited to attend the meeting. Dr. George Chaffee, 338 Forty-seventh Street, Brooklyn, is the secretary of the society.

Vital Statistics of New York.—During the week end-

ing September 26, 1908, there were reported to the Department of Health of the City of New York 1,271 deaths from all causes, of which 666 were in Manhattan, 103 in the Bronx, 402 in Brooklyn, 70 in Queens, and 30 in Richmond. The death rate for the week, in an estimated population of 4.442,685, was 14.09 in 1,000 of population, as against a death rate of 16.62 in the corresponding period in 1907. The death rates in the five boroughs for the week were as follows: Manhattan, 15.15; the Bronx, 16.40; Brooklyn, 14.05; Queens, 15.70; Richmond, 20.41. Of the total number of deaths 471 were of children under five years of age, and of these 193 were due to diarrhœal diseases. There were 136 still births. Seven hundred and forty-eight marriages and 2,302 births were reported during the week.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statement of new cases and deaths reported for the two weeks ending October 3, 1908

| | Sept. 26 | | Oct. 3 | |
|--------------------------|----------|---------|--------|--------|
| | Cases. | Deaths. | Cases. | Deaths |
| Tuberculosis pulmonalis | 530 | 172 | 481 | 153 |
| Diplitheria | 255 | 24 | 266 | 21 |
| Measles | 54 | | 96 | 2 |
| Scarlet fever | 143 | 7 | 102 | 4 |
| Smallpox | | I | | |
| Varicella | 17 | | | |
| Typhoid fever | 127 | 29 | 100 | 1.0 |
| Whooping cough | 25 | b | 21 | 2 |
| Cerebrospinal meningitis | 8 | 8 | 7 | 5 |
| | | | | |
| Totals | 1,159 | 247 | 1,073 | 200 |

The Mortality of Chicago.-During the week ending September 26, 1908, there were reported to the Department of Health of the City of Chicago 583 deaths from all causes, as compared with 525 for the previous week and 549 for the corresponding period in 1907. The annual death rate, in an estimated population of 2,166,055, was 14,04 in 1,000 of population. Of the total number of deaths 217 were of children under five years of age, and of these 166 were less than one year of age. The principal causes of death were: Apoplexy, 11 deaths; Bright's disease, 42 death were: Apoptexy, 11 deaths; Digits disease, deaths; bronchitis, 9 deaths; consumption, 49 deaths; cancer, 21 deaths; diphtheria. 0 deaths; heart diseases, 43 deaths; intestinal diseases, acute, 142 deaths; measles, 2 deaths; nervous diseases, 15 deaths; pneumonia, 35 deaths; scarlet fever, 7 deaths; suicide, 11 deaths; typhoid fever, 18

deaths; violence (other than suicide), 35 deaths; whooping cough, 2 deaths; all other causes, 132 deaths.

Medical Society of Virginia.—The thirty-ninth annual meeting of this society will be held in Richmond on Tuesday, Wednesday. Thursday, and Friday, October 20 to 23, 1908. The headquarters of the society will be at The 1908. The headquarters of the society will be Jefferson, where all meetings will be held. The first ses-Jefterson, where all meetings will be held. Ine first session will be held on Tuesday evening. The Hon. D. C. Richardson, Mayor of Richmond, will deliver the address of welcome, after which Dr. William Francis Drewry, of Petersburg, will deliver the annual presidential address. A splendid programme has been prepared, consisting of fifty-eight papers on subjects of interest to the general hifty-eight papers on subjects of interest to the general practitioner, including a symposium on anæsthetics. Clinics will be held daily, from 8:30 a. m. to 9:30 a. m., at the Memorial and Virginia Hospitals, and on Thursday evening the members of the society will attend a joint conference of the State, city, and county boards of health. The officers of the society are as follows: President, Dr. William Francis Drewry, of Petersburg; vice presidents, Dr. Floyd J. Gregory, of Keysville, Dr. J. B. Fisher, of Midlothian, and Dr. H. R. Dupuy, of Norfolk; secretary, Dr. Landon, B. Edwards of Richmond: corresponding secre-Landon B. Edwards, of Richmond; corresponding secretary, Dr. John F. Winn, of Richmond; treasurer, Dr. R. M. Slaughter, of the Theological Seminary.

Personal.—Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry of the United States Department of Agriculture, has been elected an honorary member of the Physico-chemical Academy of Italy, and has been awarded a medal of the first class by the same academy.

Dr. Paul G. Woolley, who has been director of the Government Serum Laboratory in Phrapatoom, Siam, for the past five years, has accepted the position of associate professor of clinical pathology in the University of Nebraska

College of Medicine.

One of Medicine.

Dr. Willis P. Jones has been elected attending surgeon to the Grady Hospital, Atlanta, Ga., to succeed Dr. William Perrin Nicholson, who resigned recently.

Dr. Anne H. Thomas, of Philadelphia, has been appointed assistant physician to Bryn Mawr College.

Medical Day in Founders' Week.—The physicians of Philadelphia celebrated the two hundred and twenty-fifth anniversary of the founding of their city on Thursday, Oc-At 10 a. m. a meeting was held in the Walnut Street Theatre, which was largely attended by members of the medical profession and other scientific bodies, and the public. Dr. George A. Piersol, of the University of Pennpublic. Dr. George A. Piersol, of the University of Pennsylvania, delivered an address on The Medical Colleges and Allied Institutions of Philadelphia. Dr. Solomon Solis-Cohen, of Jefferson Medical College, delivered an address on Some of the Great Medical Teachers of Philadelphia; and Dr. James M. Anders, of the Medicochirurgical College, concluded the formal addresses by speaking on The Development of Practical Medicine in Philadelphia. At 5 m. a mearing was held in the Philadelphia General Hosp. m. a meeting was held in the Philadelphia General Hospital, at which addresses were made by Dr. Joseph S. Neff, Dr. Charles K. Mills, Dr. Alfred Stengel, and Dr. George W. Guthrie, of Wilkes-Barre, Pa. Luncheon was served at the close of the meeting. In the evening a "smoker" was held at the Bellevue-Stratford.

Association of Military Surgeons of the United States.

The seventeenth annual meeting of this association will be field in Atlanta, Ga., on October 13th, 14th, 15th, and 16th, Delegates will be present from Great Britain, India, Mexico, Portugal, Ecuador, San Salvador, and Turkey, as well as from nearly every State in the Union. A splendid well as from nearly every State in the Union. A splendid programme has been prepared, and the prospects are good for a very successful meeting. The officers of the association are: President, Assistant Surgeon General George Tully Vaughan, Public Health and Marine Hospital Service, Washington, D. C.; first vice president, Rear Admiral Presley M. Rixey, United States Navy, Washington, D. C.; second vice president, Colonel Joseph K. Weaver, National Guard of Pennsylvania, Norristown, Pa; third vice president, Colonel William C. Gorgas, United States Army, Ancon, Canal Zone, Panama; secretary, Major James Evelyn Pilcher, United States Volunteers, Carlisle, Pa; treasurer, Major Herbert A. Arnold, National Guard of Pennsylvania, Ardmore, Pa; assistant secretary, Captain J. Carlisle De Vries, National Guard of New York, Watkins Glen, N. Y.

Society Meetings for the Coming Week:

Watkins Glen, N. Y.
Society Meetings for the Coming Week:

Monday, October 12th.—New York Academy of Medicine
(Section in Neurology and Psychiatry); Society of
Medical Jurisprudence; New York Ophthalmological
Society; Society of Alumni of St. Mary's Hospital,
Brooklyn; Corning, N. Y., Medical Association;
Waterbury, Conn., Medical Association.

TUESDAY, October 13th.—New York Academy of Medicine
(Section in Public Health); Medical Society of the
County of Schenectady, N. Y.; Practitioners' Club of
Iersey City, N. J.; Medical Society of the County of
Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

Wednesday, October 14th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumin Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Richmond County, N. Y., Medical Society.

Thursday, October 15th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

Erday, October 16th.—New York Academy of Medicine

Friday, October 10th.—New York Academy of Medicine (Sections in Orthopædic Surgery and Pædiatrics); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society; Brooklyn Medical Society.

Meetings of Sections of the New York Academy of Medicine.—A nuecting of the Section in Public Health will be held on Tuesday evening, October 13th. The paper of the evening will be read by William H. Allen, Ph. D., secretary of the Bureau of Municipal Research, on The Duty of the Laity and the Profession to Support the Health Department. A general discussion will follow. A joint meeting of the Sections in Pædiatrics and Orthopædic Surgery will be held on Friday evening, October 16th. The general topic for consideration will be paralysis in early life, and papers on the subject will be presented as follows: The Causative Factors, by Dr. Royal S. Haynes; Meetings of Sections of the New York Academy of

follows: The Causative Factors, by Dr. Royal S. Haynes; Differential Diagnosis, by Dr. E. G. Zabriskie; Electrical Treatment, by Dr. H. Romeiser; Mechanical Treatment, by Dr. W. R. Townsend; Operative Treatment, by Dr. R. H. Sayre, A general discussion will follow.

A general discussion will follow.

The Health of Philadelphia .- During the week ending September 26, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, I case, O deaths; typhoid fever, 95 cases, 13 deaths; scarlet fever, 49 cases, 3 deaths; chickenpox, 14 cases, o deaths; diphtheria, 53 cases, 5 deaths; cerebrospinal meningitis, I case, I death; measles, 13 cases, I death; whooping cough, 8 cases, 4 deaths; tuberculosis of the lungs, 98 cases, 57 deaths; pneumonia, 40 cases, 22 deaths; erysipelas, 3 cases, 0 deaths; puerperal fever, I case, I death; mumps, 2 cases, 0 deaths; cancer, 19 cases, 22 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tubercularistic for the larger of deaths. losis of the lungs, 7 deaths; diarrhoa and enteritis, under two years of age, 32 deaths. The total deaths numbered 399, in an estimated population of 1,532,738, corresponding to an annual death rate of 13.50 in 1,000 of population. The total infant mortality was 105; 81 under one year of age, 24 between one and two years of age. There were 29 still births; 16 males and 13 females. The total precipitation amounted to a trace only. The thermometer recorded a maximum of 83° on the 25th.

Charitable Bequests.—By the will of Marie Mayer,

who died recently in Philadelphia, St. Christopher's Hospital for Children, the Maternity Hospital, the German Protestant Home for the Aged, the Evangelical Home for the Aged, the Orphans' Home, and the Asylum for the

the Aged, the Orphans' Home, and the Asylum for the Aged become reversionary legates.

By the will of Mary A. Leighton, the sum of \$10,000 is bequeathed to the Malone, N. Y., Hospital Association, to be known as the Leighton Endowment Fund.

By the will of Winfield Tucker the Presbyterian Hospital, New York, receives \$22,500, to endow three beds in memory of Joseph, Isabella, and Adeline Tucker; the Fresh Air and Convalescent Home at Summit, N. J., receives \$3,000, to found a bed; the New York Postgraduate Hospital receives \$5,000; New York Throat, Nose, and Lung Hospital receives \$5,000; and the House of Rest for Consumptives, Inwood-on-the-Hudson, receives \$5,000.

Hospital receives \$5,000; and the House of Rest for Consumptives, Inwood-on-the-Hudson, receives \$5,000.

By the will of Mrs. Emma A. Tillotson, who died in New York on September 12th, St. Luke's Hospital receives \$5,000 to endow a bed for patients "who have been engaged in the profession of journalism." To each of the following institutions also the sum of \$5,000 was bequeathed: New York Society for the Relief of the Ruptured and Crippled, the New York Skin and Cancer Hospital, the Woman's Hospital, St. Mary's Free Hospital for Children, and the Home for Incurables.

By the will of James R. Savre, Jr., the Hospital for Women and Children, Newark, N. J., receives \$40,000, and the Newark Female Charitable Society receives \$20,000.

By the will of Henry Suydam Wilson, who died in New York on September 23d, the Presbyterian Hospital, New York, receives \$10,000.

York, receives \$10,000.

By the will of Mrs. Mary A. Shaw, the Flushing Hos-

pital receives \$1,000.
By the will of Juliette W. Murray, who died recently in Greenwich, Conn., the Methodist Episcopal Hospital, Brooklyn, N. Y., receives \$5,000, and the Greenwich General Hospital receives \$10,000.

B. the will of Christopher Benfield Carter, K. C. of Montreal, the Montreal General Hospital receives \$5,000, the Protestant Insane Asylum at Verdun receives \$1,000,

and St. George's Home receives \$500.

By the will of a German banker, named Sampson, the Prussian Academy of Sciences, of Berlin, receives

\$7,500,000. By the will of Daniel Martin, St. Vincent's Home for Orphan Children, of Philadelphia, receives \$14,000.

Bith of Current Titerature.

BOSTON MEDICAL AND SURGICAL JOURNAL. October I. 1908.

Acute Appendicitis in Children, By Beth Vincent.
Mechanical Treatment of Diseases of the Circulatory
System with Special Consideration of Zander's Meth-

ods, By C. Hermann Bushholz.
3. Final Report of a Case of Stocker-Adams Disease,

By HERMAN F. VICKERY. 1. Acute Appendicitis in Children.-Vincent reports one hundred cases of appendicular inflammation in children, the ages ranging from two to twelve years. Twenty of the cases occurred in children under five years, sixty from five to ten years, and twenty from ten to twelve years, the age limit of the hospital. Fifty-two of the cases occurred in boys and forty-eight in girls. From a surgical point of view, children over ten years of age resemble adults very closely, and appendicular inflammation between this age and puberty differs but little from the same disease in adolescence. Under ten years the influence of the child's lack of mental and physical development is apparent, and this gives rise to certain characteristics that are normal for a child, but which differ materially from an adult. The younger the child, the more marked are these characteristics or peculiarities. In the one hundred cases, perforation or gangrene was found in seventy-one per cent. The resulting peritonitis was of limited extent in twenty-five cases, but apparently spreading at the time of operation. In forty-two cases the peritonitis had become a localized process that varied from the palpable, firmly walled abscess to the case which had a small amount of pus limited by light but efficient adhesions. The disease was confined to the appendix in twenty-four of the cases. Nine could be called instances of diffuse or general peritonitis. All the adult forms of appendicitis are seen in children, the catarrhal, the gangrenous, the perforative, the suppurative, where the infection is either altogether within the appendix or where the peritonæum has become involved with the formation of a circumscribed abscess, a spreading, or a diffuse peritonitis. The advanced and severe forms, however, are more frequently met with in children, gangrene and perforation being especially common. The catarrhal form and the suppurative form, where the disease is confined to the appendix—empyema of the appendix-are, unfortunately, not so often found at operation as in adults. This peculiarity of children may be accounted for in two ways: first, because the difficulties of early diagnosis lead to a tardy recognition of the disease and to delayed operation; and, second, because the progress of this disease is unusually rapid in the child. The reason for this rapid progress some writers believe is due to the abundance of lymphoid tissue that exists in a child's appendix. A septic process flourishes in this tissue, as, for example, is seen in the child's throat, which is also rich in lymph follicles and where amygdalitis and adenitis so frequently end in suppuration. Light attacks of appendicular inflammation are readilv overlooked. The early stages of the more severe attacks seem to be of short duration. The process tends to extend quickly to the peritonæum, and the

appearance of pus is an early feature. This extension is usually followed by abscess formation, because the child's peritonæum, up to a certain point, is capable of prompt resistance; hence in children one finds a large number of cases of circumscribed peritonitis. If the average time of operation were as early in children as in adults, probably the per-centage of these localized cases would be even greater in children. The author concludes that acute appendicular inflammation is rare in infancy. but is more common in childhood than is supposed. An early diagnosis is difficult, and the first stages and lighter forms of the attack may be easily overlooked. The prognosis of the disease is more rapid in children than in adults; the involvement of the peritonæum and the appearance of pus are early features; diffuse peritonitis is probably more frequent, but there is still greater tendency to the formation of a localized abscess. A child is never so young and seldom so sick as to contraindicate surgical interference, but the extent of the operation must always be measured by the condition of each patient. Children stand short operations well, but may be needlessly lost through prolonged and ill advised efforts to do more than is absolutely essen-The prognosis is more uncertain in children than in adults. Age is a very important factor. In children over ten years of age the prognosis is at least as good as in adults; in children under five years it is worse, and in infants the prognosis is exceedingly grave.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION October 3, 1908.

The Development of Our Knowledge of Exophthalmic Goître, By George Dock.
Prolapse of the Rectum and Sigmoid Flexure follow-

ing Hysterectomy, By Louis J. Hirschman. Surgical Importance of Cervical Ribs to the General Practitioner, By John B. Roberts. Rachitic Erosions of the Permanent Teeth Associated

4. Rachitic Erosions of the Permanent Techn Association with Lamellar Cataract,
By I. A. Abt and Mortimer Frank.

5. The Adjustable Canvas Chair as an Aid to the Murphy Treatment of Diffuse Suppurative Peritonitis,
By D. Top Gilliam.

6. A New Position for the Treatment of Diseases of the Rectum and Sigmoid Flexure,
By Granville S. Hanes.

By GRANVILLE S. HANES. 7. The Submucous Resection of the Lateral Nasal Wall in Chronic Empyema of the Antrum, Ethmoid, and Sphenoid, By R. Bishop Canfield.

8. Comparative Experiments on the Complement Binding Substances in the Serum and Urine of Syphilities, By Upo J. Wile.

The Anæmia of Hepatic Cirrhosis Simulating the Per-nicious Type, By James E. Talley

2. Prolapse of the Rectum and Sigmoid Flexure following Hysterectomy.-Hirschman reports two such cases and observes that in patients requiring hysterectomy who give a history of chronic constipation, the possibility of postoperative prolapse of the rectum and sigmoid should be borne in mind, while in patients with a history of chronic constipation who require hysterectomy it must be remembered that the removal of the uterus deprives the rectum of an important anterior support, and the broad ligaments should be brought together whenever possible. In these cases, perineorrhaphy and posterior colporrhaphy should be performed when laceration or rectocele exists. When any tendency to prolapse of the rectum or sigmoid is observed mesosigmoidopexy should be done as a prophylactic

measure. Mesosigmoidopexy should be the operation of choice in every case of complete prolapse of the rectum and sigmoid, whether following hysterectomy or from other causes, as it holds the sigmoid in place by its natural support, its own mesentery, which being double its original thickness becomes twice as strong a support. By not causing a fixation of the bowel to the abdominal or pelvic wall, its natural mobility is not interfered with, and the normal peristaltic movements are not interfered

3. The Surgical Importance of Cervical Ribs to the General Practitioner.—Roberts reminds us that the usual cervical rib is attached to the transverse process and perhaps the body of the seventh cervical vertebra and may be found on both sides of the neck. When the condition is bilateral, one rib is frequently longer and better developed than the other. Occasionally both the sixth and seventh vertebræ are furnished with these irregularly shaped costal appendages. A cervical rib generally approaches in some degree the outline of a dorsal rib. Its attachment to the spinal column, if it is so attached, is also like that of dorsal ribs. It is, however, quite often a very distorted representation of a rib. Its anterior end may be attached to the sternum, may articulate with the upper surface of the first dorsal rib, or may lie in the soft tissues without any other osseous connection than that which it has with the spine. Sometimes the middle of the rib is a fibrous cord uniting a posterior or vertebral bony segment with an anterior bony segment, which may be fastened to either the sternum or the first dorsal rib. In other cases there may be a posterior and an anterior bony segment with no intervening fibrous or bony tissue to represent the shaft or body of the rib. The irregularity of the curves of and the knobs on the anomalous rib may be extreme. Many persons with cervical ribs suffer no discomfort from them, and their existence is unknown unless discovered by some chance clinical investigation. The symptoms are due to pressure on vessels and nerves. The determining cause of the advent of symptoms is obscure. It has been supposed that there is a tendency toward the third decade of life for cervical ribs to grow in length, or to increase in size by the development of exostoses. Those ribs which extend directly outward from the spine appear to cause less trouble than those which project downward and forward. The short, stumpy bones seem to produce symptoms more readily than the longer ribs. This is perhaps due to the fact that the more perfect the shape of the rib the more it and adjacent structures conform to physiological standards and needs. The treatment is excision of the anomalous cervical rib in all cases of severity. The operation, if done well, is practically free from danger, though it naturally varies in its surgical importance in each case. The entire rib should, as a rule, be removed. Subperiosteal resection is not wise, as a regenerated rib may exert pressure again. Injury to vessels, nerves, and pleura is to be deprecated and may usually be avoided by the common expedients available to operators. Pneumothorax, local and general palsy of the extremity, and troublesome bleeding have been caused in some operations. These mishaps are unusual. The palliative treatment in mild cases consists in

rest of the arm, suspension of the patient, local counterirritation, liniments, and massage. The constant electrical current (8 to 10 milliampères) may be employed, with the anode used as the active electrode. The combined faradic and galvanic current may be found useful.

6. A New Position for the Diagnosis and Treatment of Diseases of the Rectum and Sigmoid Flexure.—Hanes describes his method as follows: The author uses a surgical chair or table, such as is used for gynæcological examinations, although a special table is now constructed that can be more easily manipulated. The patient is placed on the table with the footrest dropped, and is allowed to hang over the end of the table on his thighs, with the shoulders resting on the edges of two plain chairs. Or a better position is obtained by allowing the patient to rest his head on a pillow, folding his arms and supporting his weight on each elbow. The author has often kept patients in this position for from ten to twenty minutes with comparatively no discomfort to them. As soon as the patient assumes this position the abdominal viscera gravitate toward the diaphragm, and the maximum tension on the sigmoid and rectum is obtained. The bowel thus approaches the direction of a straight line. This accomplished, the proctoscope is readily passed by the folds and flexures of the intestine, there being absolutely no injury to the mucosa if the distal end of the instrument is kept in view and guided around these natural obstructions. If there are abnormalities existing in the bowel, and it is impossible to pass the instrument by them, they can be observed, and, therefore, no injury done to the patient, which cannot always be assured when other positions are used. The chief advantage in this position is in the fact that the viscera descend most completely towards the diaphragm, and the atmospheric pressure is correspondingly increased. The bowel is ballooned a greater distance along its course, often extending, in normal conditions, along the entire rectum and greater part of the sigmoid flexure. Unless the bowel is ballooned beyond the distal extremity of the proctoscope, an examination with this instrument is of little value. With the patient in this position either the proctoscope or sigmoidoscope may be safely and readily introduced, and the bowel will be distended beyond the distal end, exposing the mucosa distinctly to view. All examinations with tubular instruments are unsatisfactory if the patient is straining; in this position this difficulty obtains less frequently than in any posture that can be employed.

MEDICAL RECORD

October 3, 1908

- The Serum Treatment and the Prognosis, under Various Forms of Therapy of Cerebrospinal Fever,
- By HENRY KOPLIK Some Mistakes Which May Prevent the Best Results of the Uric Acid Free Diet, By ALEXANDER HAIG. Pneumonia on the Isthmus of Panama.
- 3. By W. E. Deeks. Early Tuberculosis and Malaria; Their Distinction,
- By PAUL II RINGER,
- Acute Ontis Interna, with Report of a Cas By EDGAR R. STILLMAN.
- Gonorrhœal Exostoses of the Os Calcis; Report of a Case Complicated by Metatarsalgia,

- 1. The Serum Treatment and the Prognosis, under Various Forms of Therapy, of Cerebrospinal Fever.-Koplik has treated thirteen patients with Flexner's serum, in cerebrospinal fever. The ages of the patients varied from three and one half months to five and one half and eleven years; three were below one year of age, and three were two years of age or younger, two of whom are under observation, while two died; the remainder recovered with the exception of one, who was discharged improved. Dr. Koplik thinks it would be rather premature and unfair in every way to draw any conclusions as to the serum until we have seen a larger material and until we have tried it in an epidemic of the violent type, such as we passed through in 1904 and 1905. On the other hand, it may be said that the serum of Flexner not only makes a very favorable impression, but is certainly a factor which cannot be excluded from the therapy of cerebrospinal meningitis, no matter what our subsequent conclusions may be. It certainly does appear that with the serum as we perfect it we may have an improvement in the percentage of recov-
- Pneumonia on the Isthmus of Panama.-Deeks concludes that quinine in large doses in pneumonia is contraindicated on the isthmus of Panama. The drugs at present made use of in the treatment of pneumonia may be said to be at the onset (if much pain is present) 1/4 of a grain of morphine hypodermically; tincture of ferric chloride in 1/2 drachm doses three times daily. This is done because of the marked anæmia which has hitherto characterized the patients there, due in great part to intestinal parasitism and poor food. Strychnine and nitroglycerin hypodermically, as much as 1/30 grain of the former and 1/100 grain of the latter, may be given as frequently as every three or four hours, and whiskey ad libitum. It has been given when there was a great deal of toxemia up to 18 ounces in twenty-four hours. Much less (6 or 8 ounces daily) is generally given toward the end of the disease. In mild cases no medication at all is necessary, but in severe cases the pulse must be frequently watched, and the stimulants varied accordingly. As a rule, nothing is necessary the first three or four days; then stimulation is begun as the symptoms or condition of the patient indicate. During the course of the affection an occasional dose of magnesium sulphate is considered good treatment, particularly if constipation is present. In extreme cases saline enemata are of great value, apparently often tiding the patient over a crisis. These may be given in quantities of 6 or 8 ounces every three hours, particularly if the patient is not taking nourishment well. As a rule they are retained. If the case is a very toxic one, a gallon or more of warm physiological saline solution is used to lavage the bowels. In other words, the treatment practised on the isthmus of Panama is supportive and eliminative, and in the class of patients that the author has to treat, with their numerous complications, the results on the whole must be considered at least satisfactory
- 4. Early Tuberculosis and Malaria; Their Distinction. Ringer remarks that the diagnosis may be considered under three distinct headings: (1) Clinical symptoms, (2) laboratory findings, and (3)

therapeutic test. 1. Clinical symptoms.—In both diseases we may have actual chill, or chilly sensations, but a definite rigor speaks far more in favor of malaria than of tuberculosis. A common symptom of both diseases, usually higher in malaria than in early tuberculosis, and rising suddenly in malaria as compared with a gradual ascent in tuberculosis. A carefully kept two hourly temperature record is one of the best means of distinguishing the two diseases. In malaria the fever usually drops by crisis; in tuberculosis by lysis. However, in the æstivoautumnal type of malaria, fever may last more than twenty hours (this not occurring in early tuberculosis) and fall by lysis—the fever in this type of malaria may even be continuous, the picture then being suggestive of typhoid fever rather than tuberculosis. Sweating is far more profuse in malaria than in early tuberculosis, where real sweats are uncommon. Drenching sweats occur only in the more advanced cases of tuberculosis; in malaria they may occur after every paroxysm of fever. A most important point in his opinion is the fact that between paroxysms the malarial patient feels wellthe tuberculous patient feels sick. The malarial patient (unless he is the victim of an old chronic malarial poisoning) recovers swiftly from his paroxysm. The tuberculous individual is constantly a prey to the tuberculotoxines, and consequently feels weak and below par all the time. Bronchitis may be a symptom in both diseases— in malaria is usually diffuse and at the bases of the lungs posteriorlyin early tuberculosis often sharply localized and at an apex. Breath sounds are of paramount importance, particularly in the epical region. With an afternoon fever, whether preceded by a feeling of chilliness and followed by a sweat or not, if at one apex the breathing is roughened as compared with that of the opposite apex, whether expiration be prolonged or not, a diagnosis of incipient pulmonary tuberculosis is so probable as to be justifiable. Dullness and râles need not be awaited; they occur when the tubercles have coalesced and when bronchitis has set in. Rough breathing denotes discrete tubercles. Careful auscultation above the clavicles, and particularly in the first intercostal space close to the sternum, is a sine qua non for the earliest possible diagnosis of pulmonary tuberculosis. Splenic enlargement is usually present at some time in malaria -not found in tuberculosis. Herpes labialis is not seen in early tuberculosis. 2. Laboratory findings. -The blood and sputum should be carefully and (if negative) repeatedly examined in making this distinctive diagnosis; if all examinations are negative, if there is ever so slight a change in the breath sounds at one apex, if intermittent fever and general malaise persist, the case is one of tuberculosis and not of malaria. 3. Therapeutic test.—Osler has given us an axiom, "An intermittent fever that resists quinine is not malarial." Therefore, if needs be, let quinine be exhibited; if the patient recovers, malaria was present; if not, malaria can be excluded. Stress should be laid upon the fact, particularly in malarial districts, that tuberculosis may set in with fever typically intermittent in character, and daily chill with subsequent fever and sweat; but careful note of the points mentioned should clear up the ætiology of the febrile movement.

BRITISH MEDICAL JOURNAL

September 19, 1908.

Hernia through the Semilunar Line and Direct Inguinal Hernia, By H. B. ROBINSON.
Case of Acute Appendicitis, with Sloughing of Abdominal Muscle and Severe Toxemia. Double Vaccine Treatment. Recovery,

By H. HAWKINS and E. M. CORNER.

An Operation for Absence of the Rectum,
By W. S. McCune Perforated Gastric Ulcer. Operation Forty-four Hours after Perforation. Recovery, By A. C. ROPER. (Science Committee of the British Medical Associa-

tion, Report CVIII). Some Points on the Experimental Production and Con-

trol of the Vascular Atony of Surgical Shock,
By P. L. Mummery and W. L. Symes.
(Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Obstetrics and Gynacology.

Discussion on the Treatment of Uterine Displacements,

Introduced by G. E. HERMAN. The Influence of the Suprarenal Glands on the Bony

Skeleton in Relation to Osteomalacia and Rickets, By L. M. Bossi.

Displacement of the Ureter in Certain Cases of Pelvic Tumor, By C. Lockyer. Discussion on Cæsarean Section versus Other Methods of Delivery in Contracted Pelvis,

Introduced by R. JARDINE.

10. Scopolamine-Morphine Narcosis in Labor, By PROFESSOR KRÖNIG

The Use of Hyoscine-Morphine Anæsthesia in Natural Labor, By R. C. Buist.
 Scopolamine-Morphine and Chloroform Anæsthesia,

By H. McNaughton-Jones.

13. Dermoid Cyst of the Jejunal Mesentery,
By W. B. Bell and J. B. Yeoman.

14. A Case of Missed Labor, By A. DEMPSEY.

15. The Treatment of Eclampsia by Means of Veratrum Viride,

16. Uterine Cancer Committee,

Section of Psychological Medicine.

17. Discussion on the Treatment of the Habitual Drunk-

ard (Legislative and Otherwise), Introduced by T. C. SHAW. 18. Discussion on Hospital Treatment in Incipient Insan-

ity, Introduced by B. PIERCE.

19. Discussion on School Life from the Point of View of

Psychological Medicine, Introduced by F. WARNER. 20. Vera and Præsenilis Melancholia at the Female Climac-

By L. D. H. BAUGH. teric, By L. D. H. BAUGH.
21. Some Statistical Points in Connection with the Study

of the Inheritance of Insanity,
By W. P. Eld
22. The Psychology of Neurasthenia and Hysteria, P. ELDERTON

By A. T. 23. Asylum Dysentery and Ulcerative Colitis, T. Schofield.

By F. G. BUSHNELL

5. Surgical Shock.—Mummery and Symes have studied the prevention and control of the vascular atony of surgical shock, and summarize their conclusions as follows: In fully anæsthetized animals nondestructive manipulations of abdominal viscera are more productive of shock than are gross injuries. Such manipulations produce shock most rapidly when they implicate the parietal peritonæum, the peritoneal ligaments, or the mesenteries. Shock is more readily produced under chloroform than under ether. In severe shock hypodermic injections are but slowly, if at all, absorbed into the blood stream. In severe shock intravenous injections of adrenin, and of extract of the posterior lobe of the pituitary body, raise arterial pressure to a greater extent than in the normal state. A single injection of the latter influences arterial tone for upwards of an hour without producing abnormally high arterial pressure. This influence is sufficient to enable considerable recovery from shock, and does not interfere with subsequent injections of adrenin, if that is desirable.

7. Suprarenal Glands and Osteomalacia .--Bossi reports the case of a woman, seven months' pregnant and suffering from an extreme degree of osteomalacia. She suffered most severely from the usual symptoms-pain, difficulty in walking, anæmia, osteomalacic cachexia, and insomnia. As the pelvis contracted her torture became extreme. Because of the ischæmic effect of adrenalin, and because of the demonstrated relations between the ovaries and suprarenal glands, adrenalin was given in doses of 0.5 The pains immediately began to disappear, the pelvis dilated, and the patient was spontaneously delivered of a normal child at term. A second pregnancy was unaccompanied by any signs of osteomalacia. The writer thinks he has not only discovered a new method of treating osteomalacia, but also evidence that (I) insufficiency in the function of the suprarenal glands must be the cause, or a factor in the causation, of osteomalacia; (2) the suprarenal glands exercise an important influence on the ossification of the skeleton. If these results are confirmed the ossification of the skeleton in rickety children should be accelerated by the administration of adrenalin.

10. Scopolamine in Labor.—Krönig believes that scopolamine, given in conjunction with morphine, surpasses all other anæsthetics in labor, producing the so called "dawning sleep." A three hundred per cent. solution of scopolamine hydrobromide and a one per cent. solution of morphine are used. The first injection consists of 4.5 decimilligrammes of scopolamine and I centigramme of morphine. It is given when the patients have pains lasting at least thirty seconds, and which recur at regular intervals of four or five minutes. The first effects are generally manifest about half or three quarters of an hour later. The patients become sleepy and slumber between pains, but awake when the pains return. A second injection of from 1.5 to 3 decimilligrammes of scopolamine alone is given an hour after the first. Half an hour later the perceptive capacity of the patient is tested by asking her if she recognizes an object previously shown her half an hour before, or if she remembers how many injections she has had. If she fails to meet these tests, no further injection is needed. As a rule, all injections following the first contain scopolamine only. Patients may thus be kept semiunconscious for twenty-four hours. After a successful "dawning sleep" women awake post partum perfectly happy, and declare they have felt nothing. It frequently happens that they will not believe they have been delivered. Everything depends on the correct dosing of scopolamine, and the only available standard as to the correctness of the dose is the test of the patient's consciousness. Loud noises, strong lights, etc., are a considerable drawback in achieving good results. The author's conclusions are based on his esperience in 1,700. cases. The length of labor is only immaterially increased, and the method is certainly without danger to the mother, and probably without danger to the child. Of the 1,700 women only two died soon after confinement, and neither of the deaths could be

in any way attribued to the scopolamine. It can be used even in cases of organic heart disease.

22. Neurasthenia and Hysteria.—Schofield regards the psychological distinction between neurasthenia and hysteria as profound. In neurasthenia there is an exhaustion or poisoning of the higher cerebral or spinal nerve centres. In hysteria there is no question of exhaustion, but there is aberration and morbid action of that part of the unconscious mind (vis medicatrix naturæ) which presides over the functions and nutrition of the body, and which produces in hysteria, unconsciously and against the patient's will, morbid phenomena which the mind consciously is wholly unable to produce even if it wished -as, for instance, reversed peristalsis, high temperature, local tumors, etc. Hysteria is thus parallel to insanity, though quite distinct from it; the radical difference being that the sphere of the former is the unconscious and that of the latter the conscious mind.

LANCET.

September 19, 1908.

The Cerebral and Ocular Complications of Anæmia and the Probable Relationship of these to Throm bosis.

By C. O. HAWTHORNE.

The Medical Aspect of Gastroenterostomy Based on 128 Operations at the Manchester Royal Infirmary, By E. B. LEECH.

A Case of Traumatic Subdural Hæmatoma Trephined A Case of Traumatic Sundural Hamatoma Trepfined
Three Months After Injury, By G. H. Hume.
A Case of Sleeping Sickness Treated with Atoxyl: Apparent Recovery, By T. A. JOHNSTON.
An Unusual Type of Leuchæmia Complicated by Synovitis in a Youth the Subject of Ichthyosis,
By R. WATERHOUSE.

A Case of Severa Vertice and Timpitive Destruction

A Case of Severe Vertigo and Tinnitus; Destruction of the Labyrinth: Cure,
Two Cases of Pneumothorax,
By M. YEARSLEY.
By J. P. MILTON.

The Prevention of Deaths Under Anæsthetics, By F. W. Hewitt. A Case of Fracture of the Ribs, Rupture of the Lung, and Pneumohæmothorax, with Notes of the Post Mortem Examination, By M. C. DE PARIS.

10. The Pathogenesis of Tabes Dorsalis,
By T. A. WILLIAMS.

II. A Modification of the Romanowsky Stain,
By F. H. Joseph.

Anæmia and Thrombosis. - Hawthorne maintains that the interpretation of the cerebral and ocular complications that occasionally occur in cases of anæmia in women is to be found in the intravascular formation of blood clot. Among the special characters pertaining to the anæmic state there must be included an undue tendency to blood coagulation, at least as long as the blood is contained within the bloodvessels. When withdrawn from the vessels, however, the opposite condition obtains, coagulation being both delayed and incomplete. An important and determining factor in the thrombosis of anæmia is a delayed or sluggish rate of blood flow. Not only certain acute and serious complications, but also a number of comparatively minor disturbances in anæmic women owe their origin to intravascular blood clotting. Such disturbances are more frequent than is generally supposed, and are warnings or danger signals of the possibility or even the probability of clot formation, on a large scale or in dangerous situations. They thus claim the special therapeutic measures by which disastrous results may be averted. The most frequent and obvious exhibition of thrombosis in anæmia is met with in the large veins

of the lower limbs. The symptoms include pain, tenderness, and cedema, with or without fever. The thrombosis may extend from the femoral to the iliac veins, and even to the inferior vena cava. It is rare for the veins of the upper limbs or of the neck or chest to be involved, but they are not exempt. Apart from embolism, the prognosis in these cases is far from gloomy, and the circulation in the veins may be completely restored. So that an obstructing clot formed in a vein in association with anæmia may, presumably by absorption or organization, be completely removed. Similar anæmic thrombosis sometimes occurs in the intracranial veins and sinuses. The symptoms are severe headache, vomiting, pain in the neck, retraction of the head, stupor, delirium, various paralyses, and sometimes double optic neuritis. A diagnosis of intracranial tumor or meningitis may be made, but most of the cases are examples of venous thrombosis within the This diagnosis is sometimes supported by the development of thromboses in other situations. Another consequence may be a limited paralysis of one or other of the ocular muscles. Neither a difficulty in providing a manifest explanation of the mechanism by which sinus thrombosis may produce optic neuritis; nor the statement that the frequent. absence of general cerebral disturbance with such neuritis opposes the diagnosis of intracranial thrombosis: nor the observation that in arterial thrombosis optic neuritis does not occur; nor the comment that the neuritis disappears under treatment with iron—is found, on examination, to present any insuperable objection to the proposition that optic neuritis occurring in anæmia has, in all probability, its explanation in the formation of blood clot in the veins or sinuses of the brain. Retinal embolism is an event of occasional occurrence in anæmia and also demands thrombosis as its interpretation. Retrobulbar neuritis also occasionally occurs as a complication in anæmia, and is possibly due to thrombosis. In its typical form this is characterized by sudden loss of central vision in one eye without evident ophthalmoscopic change. These facts demand a lesion in the trunk of the optic nerve posterior to the eyeball, and the suddenness of the lesion often suggests that it is vascular in nature. In the practical sphere, the suggestion that optic neuritis, ocular paralyses, hemianopsia, or other abnormalities of the visual field, retinal embolism, or retrobulbar neuritis, occurring in anæmic patients, are probably due to thrombosis, is significant, because on such interpretation any one or more of these events appearing in an individual case must be accepted as the sign of a tendency to thrombosis in an unusually marked degree, and must therefore claim the application of the therapeutic measures which such a conclusion demands.

8. Anæsthetics.-Hewitt states that there are three main principles which must collectively be observed in order to secure safe anæsthetization. These are: (1) The selection of appropriate anæsthetics according to the exigencies of particular cases; (2) the adjustment of the vapor percentage of the anæsthetic to meet the varying requirements of each case; and (3) the avoidance of the slightest obstruction to the free entry and exit of air throughout the administration. The third principle is the most important, as some obstruction above the trachea is usually a powerful factor in the great majority of deaths under anæsthetics.

LA PRESSE MEDICALE

August 26, 1908.

I. Stercobilin. Fæcal Urobilin,

By A. GILBERT and M. HERSCHER. 2. On Which Side do Patients with Pulmonary Tuberculosis Sleep, Relatively to the Seat of Their Lesions?

Stercobilin.—Gilbert and Herscher studied first the methods of extraction of stercobilin, of its chromogen and of the biliary pigments from the fæces, then the biliary pigments stercobilin and stercobilinogen in the physiological fæces of adults and of infants, then the same pigments in pathological fæces, the method of formation of stercobilin and stercobilinogen, the physiology and pathology of the biliary excretion, and the semiological value of stercobilin. They assert that neither urobilinuria nor the presence of stercobilin indicates any hepatic insufficiency, but that, on the contrary, its suppression or diminution, or the addition to it of stercoral bilirubin, shows a defect in the biliary secretion or excretion.

August 29, 1908.

The Lipoids.

Vegetable Dietetics. Fruits and their Alimentary
Value. The Banana,
Acute Proliferation of the Connective Tissue of the
Intrahepatic Capsule of Glisson. Experimental By EMILE GERAUDEL.

I. The Lipoids.-Iscovesco in this article discusses the importance of the dipoids from the medical point of view, cholesterin and the malignant and pernicious toxic anæmias.

2. The Banana. — Labbe, after a thorough analysis of this fruit, comes to the conclusion that its hygienic and nourishing qualities are such as to merit its use as a regular article of diet for patients. In comparison with various legumes and fruits he says it is one of those which offer a large degree of energy for a low price.

September 2, 1908.

1. The Measurement of the Systolic Pressure in Man, By G. Weiss.

2. Mental Alienation and the Reaction of Wassermann, By G. RAVIART, M. BRETON, G. PETIT, GAYET, and CANNAC.

3. Favorable Emaciation in Lean Dyspeptics, By G. LEVEN.

The Measurement of the Systolic Pressure. -Weiss describes the various methods devised for this purpose by Bloch, Basch-Potain, Riva, Rocci, Vaquez, and Gaertner, with some discussion of each.

LA SEMAINE MEDICALE

September 2, 1008

Contribution to the Study of Grave Pseudoparalytic By G. MARINESCO. Myasthenia. Simplification of the Technique of the Serodiagnosis of Syphilis.

By J. BAUER.

Myasthenia.-Marinesco says that myasthenia is characterized clinically by fatigue and exhaustion of the voluntary muscles, chemically by an insufficiency of oxygenation, shown especially in the voluntary movements, and consequently the appearance of intermediary products, the destruction of the chemical composition of the muscle, and the augmentation of the total azote in the urine; pathologically by changes in the striated muscles and in many of the glands with internal secretion, such as the parathyreoid glands, the liver, the suprarenal capsules, and the hypophysis. The latter and perhaps the parathyreoid glands present microscopically the picture of glands in hyperfunction. As regards the primum movens of the disease, this seems to reside in a perturbation of the formation of the antibody of fatigue, or of the oxydases.

BERLINER KLINISCHE WOCHENSCHRIFT. .lugust 17, 1908.

- Concerning the Relations between the Bacilli of Human Tuberculosis and the Tuberculosis of Cattle, By KARL STEFFENHAGEN.
- Some Further Results of My Investigations Concerning the History and Treatment of Tuberculosis
- By EDWIN KLEBS. Resection of the Elbow Joint with Preservation of Its By V. SCHMIEDEN
- 4 Casuistics of Paralysis of the Abducens after Lumbar Anæsthesia with Tropacocaine, By G. GONTERMANN. Concerning Paraffin Protheses, By V. SAXTORPH STEIN.
- Toxine and Anaphylactic Substance of Eel Serum,
 By R. Dörr and H. RAUBITSCHEK. The Action of Superoxide upon the Digestive Organs,
- Ætiology and Treatment of Singers' Nodules,
- By ERNST BARTH. Outline of the Modern Care for Cripples By BIESALSKI.
- 2. History and Treatment of Tuberculosis .-Klebs concludes that immunizing, or, better, cell protecting, substances, sozines, such as the tubercle sozine, should be used when the onset of fever indicates the setting free of tubercle bacilli from the foci in the organs, also when their presence in the lungs can be demonstrated by quantitative determination of tubercle bacilli in the sputa. It may be that in such cases serological experiments should be made, because the serum or the fluid of the exudate forms a deposit with the culture fluid of tubercle bacilli in acute extension of the tubercle bacilli. When the use of the tubercle sozine is ineffective, an injection with Möller's blind worm tuberculosis should be made. Usually this causes no fever and no suppuration, but in very infectious cases it produces a characteristic formation of papules of slightly reddish hue with exfoliation of the skin during recovery. The course of the papule seems to be of particular prognostic value. formation of tubercles and swelling of the neighboring lymphatic glands are never produced by the pure preparations. Another very important use of the blind worm tuberculosis is in incipient tuberculosis, or scrofulosis, especially in children when the swellings of the lymphatic glands first appear. This is to be recommended, particularly in tuberculous families. It is advised to make the injection either in the back, at the inner end of the spine, or the scapula, when lung affections are present, as is usually the case, or higher in the cervical muscles, or in the sternocleidomastoid, according to the position of the swollen glands. The injections should be made into the tissue of the muscles, the needle being introduced vertically through the skin.
- 5. Paraffin Protheses.-Stein asserts that paraffin melted with petrolatum should not be used for subcutaneous protheses, because the melting point of such a mixture cannot be ascertained with sufficient accuracy. Cold paraffin with a melting point

under 50° C. should be employed; it remains to be determined how far below 50° C. the melting point

6. Toxine and Anaphylactic Substance of Eel Serum.-Dörr and Raubitschek state, I, that poisonous sera, particularly eel serum, contains two kinds of antigen, toxine and anaphylactic bodies. If the former is destroyed by heat or acids, even the death of the anaphylactic animal may be brought about by the changed nonpoisonous product; 2, the immune bodies, antitoxine and anaphylactic reaction bodies arise in the serum independently of one another; 3, if they are all present together such an immune serum forms a preventive protection against fatal quantities of the poisonous albumin, on the other hand becomes anaphylactic toward larger doses of the same kind of albumin artificially robbed of its toxicity.

8. Singers' Nodules .- Barth declares that the nodules formed on the vocal cords of singers are due to a faulty technique of singing and that treatment is without value until the technique is cor-

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 18, 1908.

- Sterilization and Use of Rubber Gloves,
 By Fiessler, Iwase, and Döderlein.
 Contribution to the Clinical Observation and Bacteriol-
- By BINGEL. ogy of Paratyphus, Technique of the Wassermann Neisser-Bruck Serum By Täge. Diagnosis of Syphilis,
- Narcosis and Lecithin, By NERKING.
- Concerning Demonstrations of the Motility of the Stomach with the Aid of the X Rays, By KÄSTLE.

 A Modification of the Method of Displacement in Kocher's Operation for Hernia,

 By TAKATA.
- The Operation for Inguinal and Femoral Hernia under Local Anæsthesia, By Nast-Kolb.
 By Fränkel.
- Plaster Dressings for Ambulant Cases, Slight Improvements of Schultze's Method of Artificial Respiration, By ZIEGENSPECK.
- 10. The Boric Acid Treatment of Suppuration of the Mid-By DÖLGER.
- Another Case of Eye Disease from an Artificial Fer-By HESSBERG. tilizer, 12. Cyst Formation in the Remains of the Vermiform Ap-
- By LEAN Treatment of Cicatricial Contractures in the Hand, By Vogel.
- 2. Paratyphus.—Bingel reports twelve cases of paratyphus. The Bacterium paratyphi was cultivated from the stools of almost every patient. From many stools a stock was cultivated and a careful bacteriological analysis instituted, experiments were made on animals and agglutination tests made. Clinically paratyphus presents the picture of a mild or moderately severe gastroenteritis without organic changes. Characteristic are the suddenness of the onset of the symptoms, the marked influence upon the general condition of the gastrointestinal symptoms, and the nevertheless mild and favorable course
- Technique of the Wassermann-Neisser-Bruck Serum Diagnosis of Syphilis.—Tage gives the technique of this investigation very fully, but not in a manner readily to be abstracted. It is worthy of note, however, that at the end, in the final determination whether a certain serum is that of a syphilitic or not, difficulties are to be met with. If the fluid in the test tube is clear red the serum is normal, if it is colorless it is that of a syphilitic,

but when the coloring is between these two extremes doubt arises and only an experienced eye can decide to which it belongs. He also states that in the process there is a number of sources of error which can scarcely be avoided by the most extreme care.

7. Operations for Hernia under Local Anæsthesia .- Nast-Kolb states that during the last seventeen months he has operated under local anæsthesia on sixty-three free inguinal hernias, nine free femoral hernias, two incarcerated inguinal, seven incarcerated femoral hernias, two of the latter with resection of the gangrenous intestine, and, in addition, four umbilical and seven epigastric hernias. He used a one per cent. solution of novocain and considers the method to be decidedly advantageous.

10. Boric Acid Treatment of Suppuration of the Middle Ear .- Dölger finds that different preparations of boric acid differ extraordinarily in their solubility in water, corresponding probably to the differences in price of the various qualities of the drug, and that more attention should be paid to the purity and solubility of the boric acid for thera-

peutic use.

11. Another Case of Eye Disease from an Artificial Fertilizer.—Hessberg reports a case met with in a man sixty-three years of age, in whom an extremely virulent inflammation of the eye, resembling panophthalmitis, was induced by a little artificial fertilizer being blown into it while the man was spreading it over the ground. The eye was burned only a little by the superphosphate, but two days later the inflammation was very severe, involving all the tissues of the anterior section of the eve, and resulted in the total loss of the eve.

12. Cyst Formation in the Remains of the Vermiform Appendix.—Lean reports a case of this nature met with in a woman twenty years old, who had recovered from an attack of appendicular

inflammation eight years before.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES September, 1908.

The Relations of the Female Reproductive Organs to By F. MÜLLER.

The Specific Treatment of Typhoid Fever,
By V. C. VAUGHAN

Observations on the Hypodermic Use of Quinine and Urea Hydrochloride in the Diagnosis and Treatment of Acute and Chronic Malarial Infections and on the of Acute and Chronic Malarial Infections and on the Resemblance to the Sexual Cycle of the Hæmamæba Manifested in the Periods of Freedom from Paroxysms that Ordinarily Follow a Single Injection of about One Gramme of this Salt, By S. S. COHEN.

The Resistance of Diabetics to Bacterial Infection. A Study of the Opsonophagocytic Properties of the Blood in Seventy-four Cases of Diabetes Mellitus and Related Conditions.

and Related Conditions,
By J. C. DA COSTA and E. J. C. BEARDSLEY. The Blood Pressure in Arteriosclerosis

By R. D. RUDOLF Symptoms Attributed to the Myocardium in Reality often of Peripheral Origin, By L. F. Bishop,

Persistent Patency of the Ductus Arteriosus By H. G. WELLS. By W. P. ELMER. Leucanæmia,

The Pathological Anatomy of Bronchial Asthma By A. G. Ellis. 10. Henry Gray, Anatomist. An Appreciation.

By F. K BOLAND 1. The Relations of the Female Reproductive Organs to Internal Diseases.-Müller thinks a consideration of this question should mention (1) the internal diseases which have been observed in connection with the physiological processes of the female generative organs, including puberty, pregnancy, and the menopause; (2) the significance of the pathological processes in those organs which give rise to medical conditions; (3) the relation of certain internal diseases to disorders of the female reproductive apparatus. Puberty signifies much more disturbance in the female than in the male. Suggestive conditions are chlorosis, thyreoid enlargement, and psychic changes. Pregnancy, though physiological, often brings many undesirable conditions, including vomiting, neuritis, and various cardiac disturbances. The climacture may bring many disturbances. Of the second group one notes the association with disturbed bowel function, heart lesions, goitre, and various nervous diseases. In the third group diseases of the kidneys and urinary tract are very prominent. Pregnancy often has a very unfavorable influence upon those organs. Ovulation fever, disease of the gallbladder and bile passages, and appendicitis must also be considered in this connection. Of the constitutional diseases diabetes and tuberculosis have an influence on the genital organs which is most marked especially during pregnancy and the puerperium.

2. The Specific Treatment of Typhoid Fever. -Vaughan announces as the result of his investigations that it is improbable that an antitoxine comparable to that which is used in the treatment of diphtheria should be found for typhoid fever. Diphtheria being so essentially distinguished from typhoid fever in the nature of the infection it would be impossible to draw conclusions from one and apply them to the other. There is no satisfactory evidence that the typhoid bacillus produces a soluble poison. The mechanism of immunity is not the same in all infections and intoxications. forms of immunity are possible (1) Antitoxine im munity, in the production of which neither phagocytic activity nor proteid cleavage has any concern. (2) Phagocytic immunity, which shows that with virulent or slightly virulent strains phagocytic activity may be increased, while with highly virulent strains such is not the case. (3) Lytic immunity. which may also be termed bactericidal or bacteriolytic immunity. There is no antitoxine for the typhoid poison. Phagocytic action is not a marked factor in the natural recovery from typhoid fever. and the author proposes to see what can be made out of lytic action in the study of the nature, progress, and recession of typhoid fever.

3. Observations on the Hypodermic Use of Quinine and Urea Hydrochloride in the Diagnosis and Treatment of Acute and Chronic Malarial Infections.-Cohen states that the hypodermic use of this double hydrochloride has been useful in two ways: 1. There are certain cases of acute infection resembling malarial fevers, but in which malarial organisms are not found in the blood. There are other cases in which a malarial origin or complication is suspected, but in which malariai hæmamæbæ have not been discovered. In most of these cases the presence or absence of malarial ininjection of the urea and quinine salt. A prolonged period of freedom from symptoms would indicate

that the previous symptoms were due to undiscovered, perhaps deep dwelling, parasites, while the absence of such a period would mean the absence of malarial infection. 2. In cases of doubtful diagnosis the injection of a quantity of the drug insufficient to secure a definite period of freedom from symptoms may cause the appearance in the peripheral blood of normal or atypical forms of the hæmamoba of malaria. The absence of this fact after half a dozen injections, at intervals of three days to a week, and in doses increasing from 0.3 gramme to 1 gramme will virtually exclude malarial infection.

4. The Resistance of Diabetics to Bacterial Infection.-Da Costa and Beardsley find the following deductions warranted: I. In diabetics the resisting powers of the blood against bacterial infection are subnormal compared with the healthy individual. Measured by the opsonic index the average diabetic's resistance is one third below normal. 2. The higher grades of diabetic glycosuria are attended by a feebler opsonophagocytic action than the lower grades, and the reverse is also true. 3. Diabetic acidosis particularly lowers the blood resistance to the bacillus of tuberculosis, but a less degree of vulnerability exits with regard to the streptococcus and staphylococcus. 4. Diabetic furunculosis does not materially depress the patient's opsonophagocytic powers to the ordinary pyogenic cocci below the figures usually incident to this disease. 5. Diabetics with pulmonary tuberculosis have virtually the same resisting powers as do subjects of uncomplicated diabetes. 6. In nonsaccharin diabetes the opsonic values to the staphylococcus range within normal limits, and this statement also applies to nondiabetic glycosuria.

5. The Blood Pressure in Arteriosclerosis .-Rudolf observes that with thickened arteries the blood pressure is likely to be increased, and in recent years many instruments have been devised for accurately measuring this pressure. The diastolic pressure is that which is of most importance, and the author thinks there is great need of an instrument to meet this want. He arrives at the following conclusions: I. In many cases of even well marked arteriosclerosis the blood pressure is not raised. This may be due to localization of the disease to a part of the arterial tree, or to the fact that the heart may be giving up the struggle, the once high pressure having fallen. 2. In many cases of arteriosclerosis the blood pressure is above normal. 3. In a given case in which the pressure is raised it cannot be assumed that it is high because of the disease of the vessel walls, nor that the sclerosis is due to the increased pressure. The arterial stiffening may be due to syphilis and the hyperpyesis to some intercurrent condition of nervous or toxic nature which may be removable by suitable treatment.

8. Leucanæmia. — Elmer states that certain authors contend that this is only an atypical form of pseudoleuchæmia or leuchæmia, others claiming that it is a clinical entity, a true combination of leuchæmia and pernicious anæmia. A case is narrated, with autopsy, in which the general symptoms resembled pernicious anæmia while the physical signs were the exit plenic or splen involvageneous leuchæmia. The blood picture recombled pernicious anæmia and

myelogenous leuchæmia, the number of young forms being much greater than is present in either leuchæmia or pernicious anæmia. Myelogenous leuchæmia is associated with considerable anæmia and the blood findings usually show normoblasts and some megaloblasts. It is concluded that while leuchanæmia has a definite clinical and hæmatological picture, it is not a separate disease, but the result of some unknown infection which in some individuals would cause anæmia, in others leuchæmia, and in others a combination of the two.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Heid in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 669.)

SECTION I.

Variations of the Virulence of the Tubercle Bacillus.—Dr. S. Arloing, of Lyons, said that for twenty-two years he had been testing the varying degrees of virulence of the Bacillus tuberculosis by inoculation and by cultural methods. He found that the guinea pig was easier to infect than the rabbit. He classified the lesions according to the degree of infectiousness. In surgical diseases the virulence of the organisms, according to his experience, was less than in pulmonary infections. In certain cases of true tuberculosis, however, the bacilli were as virulent as any bacilli isolated from pulmonary lesions. There was great variability in the degree of virulence of organisms from the same anatomical source, from a virulence which produced lesions easily cured to the most fatal form of infection. The varying results were ascribed to the variations of the virulence of the organism and not to differences in race, such as bovine and human. Similar experiments in the human and bovine bacilli gave similar results. He concluded that all tubercle bacilli belonged to one

The Routes of Infection in Tuberculosis.—Dr. JULIUS BARTEL, of Vienna, said that in man, as in animals, a lymphoid stage of tuberculosis existed, in which there was a lymphocytic hyperplasia of the lymph nodes, or in which the lymph nodes remained apparently unchanged. Attempts at immunization in the lymphoid stage, followed by attempts at reinfection, showed, first, signs of increased tendency toward infection, then signs of increased resistance to infection, and finally complete immunity; second, processes of complete cure in organs affected, with manifest tuberculous changes; third, mainly manifest tuberculosis of the lungs with the bronchial lymph nodes, and pulmonary cavities; fourth, isolated manifest tuberculous disease of the lungs, the portals of entrance remaining perfectly intact, with all opportunity of direct lung infection having been excluded. So it was seen that under certain conditions tuberculosis was a cryptogenic infection. Similar conditions must have prevailed in human pathology, so that if we only looked for the signs of maniiest tuberculosis during an autopsy we had insufficient evidence to determine the portals of entry. The signs of lymphoid tuberculosis must be considered. Infection from the pharynx, the stomach, and the intestines was far more frequent, particularly during early life, than had generally been supposed.

The Relation of Air to Tuberculosis; Sterilization of the Air.—Dr. Samuel Bernheim, of Paris, said that there was a close relation between the microorganisms of the air and tuberculosis. The greater the number of bacteria in the air the greater would be the number of cases of tuberculosis in the community. In overcrowded districts, in places where meetings were held, in hospitals, in prisons, in schools, in barracks, in great shops, in factories, and in other workrooms the high bacterial contents of the air and the high proportion of tuberculous individuals would be found. In order to get rid of tuberculosis in a given population, the hygiene of houses and the sanitary condition of the towns must be supervised. Goupil's tub and Silbermann's double current chimney were spoken of as assisting in the destruction of air bacteria in all kinds of apartments, particularly in hospital wards, amphitheatres, and other assembly halls.

The Predisposition of the Apices of the Lungs to Tuberculosis.—Dr. CARL HART, of Berlin, said that in the youthful subjects of tuberculosis an individual predisposition might exist, due to anatomical and functional disturbances of the normal relations at the superior opening of the thorax. This disturbance might be congenital, hereditary, or acquired. The predisposition which at first diminished the actual size and the function of the apices favored the deposition of tubercle bacilli and also diminished the natural resistance of the tissues. In this way the localization of the first tuberculous focus in the apex was accounted for, and this local predisposition was equally important whether the infection was brought to the apex with the air, the lymph, or the blood. The final outcome of the struggle between the Bacillus tuberculosis and the tissues depended upon the condition of the resisting power of the latter. Therefore the measures to be employed in combating tuberculosis should be directed, more than had been done in the past, toward the prevention of any anatomical or physiological interference with the apices of the lungs.

Heredity in Consumption.—Surgeon General SIMON VON UNTERBERGER, of St. Petersburg, said that the difference between the infectionists and the hereditarians concerning the origin of consumption was relative rather than actual. For the genesis of pulmonary tuberculosis a soil (the body) and an exciting cause (Bacillus tuberculosis) were necessary. He then referred to the chromosomes formed in the segmenting impregnated ovum, and reminded his audience that one half of them were inherited from the father, and that the other half were inherited from the mother of the individual. He thought that the tendency to consumption was inherited in this way. He referred to the frequency of the demonstration of healed tuberculous lesions in autopsy subjects over thirty years of age, and said that that fact showed how easily the organism could overcome the tubercle bacillus. Therefore the indication for treatment was to strengthen the organism by hygienic and dietic methods. Of course we must

seek to destroy the tubercle bacillus, but it was utopian to expect to destroy all the tubercle bacilli in the world. The chief endeavor, therefore, must be to strengthen the body.

JOINT SESSION OF SECTION I AND SECTION II.

The Opsonic Index in Certain Tuberculous Infections.—Dr. Thomas Wood Hastings, of New York, said he had studied the question of the opsonic index in tuberculosis from the point of view of estimating an opsonic index; from the point of view of the variations of the opsonic index in normal sera and in the sera of tuberculous individuals; from the point of view of the variations in the opsonic index in individuals not under tuberculin treatment; and from the variations in the opsonic index in cases under tuberculin treatment. He found that a low opsonic index was not constant in cases of tuberculosis. The opsonic index, he found, did not correspond to the clinical condition of the patient, and it could not be used as a guide to inoculation. He found that wide variations occurred in the opsonic index over long periods of time, so that to establish the pathological variation the index should be determined at least two or three times a week for two weeks.

The Opsonic Index in the Diagnosis of Pulmonary Tuberculosis .- Dr. GEORGE P. SANBORN, of Boston, exhibited a chart showing the curve of the opsonic index in a case of pulmonary tuberculosis. The patient was observed under conditions of complete rest, during moderate activity, during hard work, and after inoculation with a tubercle bacillus emulsion. The opsonic index was determined twice or three times a day, under these varying conditions, for two months. As a result of these observations it was found that a normal opsonic index was obtained both when the patient was at rest and when he was doing light work. With hard work, however, the opsonic index was increased, showing autoinoculation. The injection of tuberculin (bacillus emulsion) also raised the opsonic index. He thought that if the opsonic index was raised after exercise, in a case of suspected pulmonary tuberculosis, the diagnosis of pulmonary tuberculosis would be warranted.

The Accuracy of the Tuberculoopsonic Test and its Value as a Control to Tuberculin Treatment in Pulmonary Tuberculosis.—Dr. H. M. RINGHORN, Dr. D. C. TWITCHELL, Dr. N. M. CARTER, and Mr. F. W. O. WERRY, of Saranac Lake, N. Y., had made control opsonic tests at various intervals in twenty-three series of a normal serumin all, one hundred opsonic determinations. The tests were made by three different observers, with the result that the mean error of a single observation was found to be plus or minus fourteen, so that that much margin must be allowed in making single opsonin observations in specific instances. In patients who were being treated with tuberculin by the progressive method inaugurated by Trudeau, at three or four day intervals, they found that the opsonic index was raised by the tuberculin injections. In a majority of the tests definite negative phases were followed by definite positive phases. When an injection of tuberculin was given during a negative phase, as often happened when it was administered at such short intervals, the opsonic index was still

further depressed; but a positive phase at once set in. In nincteen per cent. of cases the positive phase had not ceased before the next injection was given, when the four day interval was followed. Although it was impracticable to make an opsonic index every day on every patient, they found that the index was of definite value in spacing the doses; but they doubted its value for the control of tuberculin injections in phthisical patients. The aim of tuberculin therapy should be to produce immunity, not to keep the opsonic index at a high level.

The Tuberculoopsonic Index in the Diagnosis and Treatment of Tuberculosis.—Dr. MARY C. LINCOLN, of Chicago, said that the opsonic index was not a satisfactory guide to the therapeutic employment of tuberculin in the treatment of tuberculosis. Her studies had extended over a period of two years and had included about 200 cases.

The Application of the Cutaneous and Conjunctival Tuberculin Reactions in the Diagnosis of Tuberculous Infections.—Dr. A. CALMETTE, of Lille, said that 92.05 per cent. of patients who were clinically tuberculous gave a positive reaction when the conjunctival test was applied. Fifty-seven per cent. of suspicious cases gave a positive reaction. Sixteen and eight tenths per cent. of apparently healthy persons gave a positive reaction. Of fiftyfive children and adults who had given positive conjunctival reactions, and who were not suspected to be tuberculous, who came to autopsy, macroscopic tuberculous lesions were found in forty-nine, usually in the bronchial lymph nodes. Of the 6,303 patients from whom these figures were compiled, three had phlyctenular keratitis, twenty had conjunctivitis, and seventy-two had a reaction which lasted bevond three weeks. In no case was more serious disturbance or permanent ocular lesion found. In general, early reactions were most trequently observed with suspected tuberculosis, and late and slight reactions with developed tuberculosis. Cachectic patients, patients with acute miliary tuberculosis, tuberculous peritonitis, and hypertoxic tuberculous infections reacted very feebly, late, or not at all. Repeated instillations of tuberculin in healthy subjects never gave a reaction when the intervals between successive instillations did not exceed five days; local excess of susceptibility disappeared in about twenty-five days. As a rule no ocular reaction occurred in patients who were treated with subcutaneous injections of tuberculin until over a month after the interruption of the treatment. In children under one year of age the conjunctival test was preferable to the cutaneous test, and it was also preferable in adults. In hospitals the simultaneous employment of both tests was recommended. A positive result by this double test furnished almost conclusive evidence of the existence of active tuberculous disease.

Experiences in the Cutaneous Tuberculin Reaction in Two Hundred Children, with Autopsy Results in All.—Dr. C. von Pirquet, of Vienna, said that 200 of the 1,600 children in the two Vienna children's hospitals, who had been subjected to the cutaneous tuberculin reaction, died and were carefully dissected. Sixty-eight of these children had ican a positive reaction, and sixty six of them I careful is created in created and person of them.

the two patients that failed to show macroscopic tubercles had pleuropericardial adhesions. He concluded that a positive cutaneous reaction indicated infection with tubercle bacilli. Negative reactions were found in 109 of the remaining cases that came to the autopsy table. A negative reaction was also found in several cases of fatal tuberculosis, particularly in older children, when the test was made a few days before death, and in some cases of tuberculosis in which the test was made during an attack of measles.

The Early Diagnosis of Tuberculosis.-Dr. WOLFF-EISNER, of Berlin, said that percussion was the most valuable clinical method in the early diagnosis of tuberculosis. A high percentage of lymphocytes in an exudate pointed to a tuberculous lesion, and lymphocytes in the sputum were an important early symptom of tuberculosis, as they appeared betore tubercle bacilli. The clinical value of the subcutaneous injection of tuberculin was relatively slight, because it showed latent as well as active tuberculosis. The same objection applied to the cutaneous reaction; but it was devoid of danger, and a negative result was of considerable diagnostic value. The conjunctival reaction gave positive results in the presence of active tuberculosis only. Positive results were obtained in eighty-five per cent. of all cases of active tuberculosis in the initial stage, and only twenty-five per cent. of apparently healthy individuals reacted positively. In a number of apparently healthy persons who gave a negative conjunctival reaction the existence of active tuberculosis was subsequently demonstrated. He said that the conjunctival reaction was absolutely without danger if the contraindications were observed. Secondary instillations should be avoided; the test should not be made when there was actual or suspected ocular tuberculosis. The reaction failed as the tuberculous process advanced. Failure of the cutaneous and conjunctival reactions was an unfavorable prognostic sign when manifest active tuberculosis was present with tubercle bacilli, but not under any other circumstances. He distinguished (1) a normal reaction, which ran its course in four days; (2) a rapid reaction which was complete in twenty-four hours, and indicated an unfavorable prognosis; and (3) a permanent reaction, which persisted for from six to twenty days, and was a favorable prognostic sign. The permanent reaction was observed chiefly in cases of healed

Conclusions from 1,087 Conjunctival Tuberculin Tests.—Dr. E. R. BALDWIN, of Saranac Lake, N. Y., said that he had sent a supply of tuberculin to forty clinicians and sanatorium physicians, with directions for a uniform method of testing and recording the results. Two solutions of 0.33 per cent. and 0.5 per cent. respectively of dried and purified old tuberculin were issued, accompanied by an eye dropper graduated to 0.25 cc. Eye disease of any kind was considered a contraindication to the employment of the test, and repetition in the opposite eye was advised with the stronger solution, in case the weaker solution failed to cause reaction. The test was tried on 887 persons. In 190 a second instillation was made in the opposite eye, and in ten a second instillation was made in the same eye. Seventy per cent. of the known tuberculous

cases gave a positive reaction; 35.9 per cent. of the suspected cases gave a positive reaction; 14.1 per cent. of patients suffering from some other disease gave a positive reaction; and 18.3 per cent. of supposed healthy individuals reacted. There were twenty-four severe reactions, ten of which persisted beyond five days. In one instance keratitis followed in a scrofulous patient. Eighteen per cent. of the second instillations in the opposite eye produced reactions, and all of those in the same eye. The cutaneous test was subsequently applied in fifty-two, and the subcutaneous in eighty-nine cases, which resulted in a considerable increase in percentage of the positive reactions among the suspected cases. He concluded that the conjunctival tuberculin test, performed with weak solutions, by a single instillation, had some value in confirming the presence of tuberculosis in the early stages. It had little value if tuberculosis was merely suspected. The value in distinguishing "active latent" tuberculosis from healed tuberculosis in apparently healthy persons was not determined. Repetition of the test in the same eye had no advantage over the cutaneous and the subcutaneous tests in the percentage of reactions produced, and it might be misleading and dangerous. Repetition in the other eye could not be recommended. The reaction was unreliable for prognosis. If the test was used with proper precautions the danger to the eye was slight and did not exclude the test when fever was present. It should, however, be used in adults, as the cutaneous test was found equally valuable for children and it (the cutaneous test) was harmless. The cutaneous test by the simultaneous use of dilute and strong tuberculin offered a method of detecting and excluding tuberculous infection, with no danger or inconvenience. Experience was needed, however, to show the value of the method. The subcutaneous test should be restricted to cases in which a focal reaction was desired, and in which the other tests had given negative results.

(To be continued.)

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Traité de l'alimentation et de la nutrition à l'état normal et pathologique. Par le Dr. E. MAUREL, médecin principal de Reserve de la Marme, professeur à la Faculte de médecine de Toulouse. Deuxieme volume. Les rations à l'état normal. Ration moyenne d'entretien de l'adulte. Ration de croissance et après l'age adulte. Paris: O. Doin, 1908. Pp. xx-666.

The author holds that scientifically we can indicate what are the quantities of each of the substances which compose our organism that we excrete day by day, and consequently what should be contained in our food to repair the loss, or, as Chittenden has it, to maintain the physiological economy of nutrition. The present volume is devoted to a brief survey of the ration in general, and a ration is defined as the total of organic and mineral (food) substances which, under given conditions, correspond to the totality of our needs.

There is broad consideration of the mean ration to maintain the adult man from the standpoints of its organic and its mineral constituents, also of the ration for the adult woman, and the practical application of the data obtained is described.

In a section on the ration during development, the author treats of the food for infants during the first two years, and of that needed from the third

year to adult life.

A final section is devoted to the ration needed after adult age, or after fifty; and this is divided into the periods between fifty and seventy and after seevnty.

The author has aimed to make this work thorough, and it gives a useful and comprehensive survey of diet for the healthy.

Die ärstliche Begutachtung in Invaliden- und Krankenversicherungssachen. Zum praktischen Gebrauch für Aerzte, Krankenkassen und Verwaltungsbehörden. Von Assessor Seelmann, Mitglied und stellv. Vorsitzenden des Vorstandes der Landesversicherungsanstalt Oldenburg. Leipzig: F. C. W. Vogel, 1908. Pp. 64

Mr. Seelmann, vice-president of the State Insurance of Oldenburg, a jurist by profession, has collected his papers on medical opinions in regard to labor insurance, which have appeared in quite a number of medical, dental, social, legal, and other professional journals during the past year. Some of these essays he has enlarged, and now publishes a pamphlet of great interest for the physician, lawyer, expert, and judge in state insurance questions. The booklet is of special value for Germany, as it refers to German labor insurance laws, but insurance men and sociologists of America may also read it with interest.

The Sanitation of Recreation Camps and Parks. By Dr. Harvey B. Bashore, Medical Inspector for the Pennsylvania Department of Health. First Edition: First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, 1908. Pp. xi-109.

The fortunately increasing tendency to spend vacation in camps makes it very desirable for the intending camper to have a practical guide to camp sanitation. In this book advice is given in regard to the situation and construction, the water supply, the disposal of waste, the surroundings of the camp, and the sanitary care of parks. The book is not technical, and should prove a useful companion to all who take up this desirable phase of outdoor life.

Diets in Tuberculosis. Principles and Economics. By Noel Dean Bardswell, M. D., M. R. C. P., F. R. S. (Edin.), Medical Superintendent, King Edward VII Sanatorium, and John Ellis Chapman, M. R. C. S., L. R. C. P., Medical Superintendent, Coppin's Green Sanatorium. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1908. Pp. 184. (Price, \$2.50.)

Pathological research and clinical observation have completely revolutionized our ideas about consumption during the past twenty-five years. The treatment and the results attained in 1907 should be compared with those of 1880. Our therapeutics is no longer confined to such drugs as antimony, digitalis, creosote, or such accessories as blisters, leeches, bloodletting, and plasters; we rely on rest, fresh air, and diet; that is, a carefully regulated life, with freedom from fatigue and worry. The last named

of the three agents, diet, is the theme of the book before us. It contains nothing new, but it offers to the practitioner a very valuable adjuvant, such as is not to be found in any textbook, and the matter is brought forward in the form of a compendium. As a report to the English Royal Society it takes, naturally, only British conditions into consideration, such as the diet of the poorer class, the wage earning capacity of consumptives, the cost of diet at

sanatoria for working classes, etc.

The book is divided into eight chapters, of which Chapter I serves as an introduction and Chapter VIII as the conclusion. Chapters II and III treat of the general principles of construction of diet for consumptives. The comparative economy of various food stuffs is considered in Chapters IV and V, while Chapters VI and VII speak of the forms of special diets. An appendix contains tables which show the forms of diet adapted in other than English sanatoria, reports from English sanatoria,

and an index.

Electrical Treatment. By WILFRED HARRIS, M. D., F. R. C. P., Physician to Out Patients, Physician to the Department for Nervous Diseases, and Lecturer on Neurology, St. Mary's Hospital, etc. Illustrated. Chicago: W. T. Keener & Co., 1908. Pp. x-383.

It has been the author's purpose to present a broad view of the various forms of electrical treatment as practised to-day, giving particular attention to what may be done in medical practice with a good faradic and galvanic battery. He describes the apparatus and methods, the faradic current and its use in treatment, the galvanic current and galvanism, electric baths, the sinusoidal current and its medical applications, x rays, static electricity, and the high frequency current. As far as possible the theory of the various forms of current is explained, and the text is well illustrated. The book is one of the best handbooks on this subject that have been

Scientific Nutrition Simplified. A Condensed Statement and Explanation for Everybody of the Discoveries of Chittenden, Fletcher, and Others. By Goodwin Brown, A. M. New York: Frederick A. Stokes Company, 1908.

The author has sought to present in condensed form and untechnical language the principles of nutrition advanced by Mr. Horace Fletcher, Professor R. H. Chittenden, and Professor Irving Fisher. Personal experience prompted him to study the writings of these well known authors, and the application of their methods resulted in such physical betterment that he has summarized their work in this little volume, which he hopes will benefit those men and women who, while in the prime of life, are the victims of their own dietary indiscretions. He has accomplished his purpose of presenting his facts in a readable form for laymen, and the book should prove to be quite useful to many persons.

BOOKS, PAMPHLETS, ETC., RECEIVED.

D. . . . of the layer By S. Stephen Mayon, F. R. C. S., Late Hunterian Professor, Assistant Surgeon and Patholo-tic Council London Ophilading Heipard, etc. With the Council Hunterian and Color Plate London Heins, Frowde and Hodder & Stoughton (Oxford University Layer, Pp. vi. co.

The Cone of Rupture by Par ffm Importion B. Charle

C. Miller, M. D. Comprising a description of a method of treatment destined to occupy an important place as a cure for rupture owing to the extreme simplicity of the technique and its advantages from an economic standpoint. Chicago:

for rupture owing to the extreme simplicity of the technique and its advantages from an economic standpoint. Chicago: Oak Printing Company, 1908. Pp. 82.

Selections from the Writings, Medical and Neurological, of Sir William Broadbent, Bart., K. C. V. O., Commander of the Legion of Honor, M. D., F. R. C. P., F. R. S., D. Sc. (Leeds), Lt. D. (Edinburgh, St. Andrews, and Toronto). Edited by Walter Broadbent, M. D., M. R. C. P. London: Henry Frowde and Hodder & Stoughton (Oxford University Press), 1908. Pp. 444. (Price, 9s.). A Manual of Bacteriology. By Herbert U. Williams, M. D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Revised by B. Meade Bolton, M. D., Washington, D. C., One Time Associate in Bacteriology, Johns Hopkins University, Chief of the Bureau of Health Laboratory, Philadelphia, etc. With 113. Illustrations. Fifth Edition, Revised and Enlarged. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xiii-466. A Common Sense View of the Mind Cure. By Laura M. Westall. New York and London: Funk & Wagnalls Company, 1908. Pp. 124.

Einfache Hülfsmittel zur Ausführung bakteriologischer Untersuchungen, Von Dr. R. Abel, Geheimer Medizinalrat in Berlin, und Dr. M. Ficker, Professor in Berlin. 2. Auflage. Würzburg: A. Stuber, 1909. Pp. 57. (Price, \$1.20.) Aerztliche Beredsamkeit. Von Dr. med. Henry Hughes, An Alabama Student and Other Biographical Essavs. By

Arzt in Bad Soden a. 1. William S. 2. Arztin Bad Soden a. 1. William S. 2. Arztin Bad Student and Other Biographical Essays. By William Osler, M. D., F. R. S., Regius Professor of Medicine, Oxford, etc. London: Henry Frowde; New York: Oxford University Press, American Branch, 1908. Pp. 335. Surgery of the Ureter. An Historical Review (1585-1905). By Benjamin Merrill Ricketts, Ph. B., M. D., LL. D., Member of the American Medical Association, etc. Cincinnati: Published by the author, 1908. Pp. 244.

Miscellany.

The Antituberculosis Crusade at the County Fairs.—"Every thirty-six minutes there is a death from consumption in the State of New York," so read several charts of the tuberculosis exhibitions of the State Charities Aid Association, which are to be shown at thirty-six of the county fairs of this State during the coming fall. To many this is a bit of news, at once surprising and startling. The great majority of people have no conception of the awful ravages of this disease, of the sorrow, suffering, misery, destitution and squalor that are left in the trail of the "great white plague"; more profound still is the ignorance of the nature of the disease. Believing and regarding it as hereditary and incurable, humanity has from time immemorial suffered tuberculosis to rage unchecked, but now however. thanks to science, it has been known for some twenty years that this plague is not only not hereditary, but that it is curable in the early stages, and most important of all, that it is preventable perhaps more so than any other germ disease. To disseminate our present day knowledge of the means and methods for checking and securing a control over this scourge, an educational campaign was carried on in nine cities of New York State, during the past year. But the people living in the country should get the message also; to them should be imparted our information about the disease, for though it is not generally known that in the small towns and rural districts of this State tuberculosis is almost as prevalent in proportion to the population as it is in the large cities. still such is the case, however, as has been deter

mined from an examination of the vital statistics of all the towns and villages of the State. The county fairs offer a splendid opportunity of reaching the people of the rural districts, and of bringing home to them the essential facts about this disease, its nature, its extent, how it spreads, how it may be cured and prevented. Over 400,000 people, it is expected, will hear the gospel of the antituberculosis crusade. Each exhibit will be made up of maps. charts, diagrams, models of well lighted and ventilated factories, together with models of sweat shop workrooms, and dark, poorly ventilated bedrooms where the consumption germ finds an excellent breeding place. Pictures of dispensaries, hospitals, and sanatoria where consumptives are treated, radiographs and photographs of healthy and diseased lungs will be shown. Scores of short, terse, pointed texts will be displayed about the exhibits. Nothing gruesome or objectionable has been allowed to creep into the exhibits, so no one need stay away on that account. The tone throughout is optimistic, for it has been felt that in a great tremendous campaign like this, the greatest perhaps that ever has or ever will be carried on by preventive medicine, optimism is a prime requisite.—Bulletin of the State Charities Aid Association.

Fourth of July Deaths.—The Journal of the American Medical Association gives the following table for the Fourth of July

| table for the Fourth of | t July | 7: | | | | |
|-------------------------|--------|-------|-------|-------|---------|------|
| States. | 1903. | 1004. | 1975. | igob. | 10) 7. | 1908 |
| Alabama | | | I | | | |
| Arizona | | | | | I | |
| California | 2 | 1 | 4 | 3 | I | |
| Colorado | 4 | | I | | | |
| Connecticut | .3 | | .3 | | 4 | I |
| Delaware | | | I | I | I | |
| District of Columbia | I | | | | | |
| Florida | | | | | | |
| Georgia | | | | | I | |
| Idaho | I | | | | | |
| Illinois | 49 | 1.5 | 20 | 16 | 1.2 | 12 |
| Indiana | II | 6 | .3 | 8 | 2 | |
| Iowa | 14 | 2 | 3 | 4 | 4 | I |
| Kansas | | Ŧ | | | 2 | I |
| Kentucky | 4 | 2 | | Ţ | | I |
| Louisiana | | | | | | |
| Maine | 2 | 4 | 1 | I | | I |
| Maryland | | | Į | I | | |
| Massachusetts | | 5 | 7 | 3 | 2 | 5 |
| Michigan | 29 | 5 7 | 9 | 4 | 4 | 2 |
| Minnesota | 15 | 2 | 2 | 2 | 2 | |
| Missouri | 29 | I | 3 | .3 | I | 5 |
| Montana | 2 | I | T | | I | |
| Nebraska | 4 | 3 | ,3 | I | | I |
| New Hampshire | | | | I | | |
| New Jersey | 8 | () | 3 | 10 | 8 | 10 |
| New York | | 9 | 6 | 8 | 4 | 0 |
| North Dakota | | | | | | |
| Ohio | | 9 | 5 | 7 | - 6 | 7 |
| Oklahoma | I | | I | Ţ | | I |
| Oregon | 2 | | | I | Ŧ | Ţ |
| Pennsylvania | 82 | 17 | 12 | 5 | 7 | 7 |
| Rhode Island | 3 | | | I | | |
| South Carolina | | | | | | |
| South Dakota | | | | | | Ţ |
| Tennessee | | | | | | |
| Texas | | | | | 2 | |
| Utah | | I | Ţ | | | |
| Vermont | | 2 | | 2 | 2 | |
| Washington | . 2 | T | | | 2 | 4 |
| West Virginia | | | | 2 | | 1 |
| Wisconsin | | 4 | 1,3 | 5 | .3 | 5 |
| Wyoming | | | | T | | |
| T-4-1 | | | | | | |
| Total | 415 | 105 | 104 | 80 | 73 | 76 |
| No. States having cases | 30 | 21 | .23 | 25 | 23 | 20 |

Official Hems.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital service, during the week ending October 2, 1908:

| Smallpox-United | States. | | |
|--|----------------|---------|-----------|
| Places. | (| ases | . Deaths. |
| California-San Francisco Sept. | 5-12 | 4 | 1 |
| Inchana-Indianapolis Sopt. | | I | |
| Indiana -Lafayette Sept. | 16-21 | 1 | |
| Kansas-TopekaSept. | 13-19 | I | |
| Massachusetts-LawrenceSept. | | I | |
| Ohio Cincini ati Sept. | 19-25 | 1 | |
| Tennessee-Nashville Sept. | 6-13 | 1 | |
| Utah-General | 1-31 | 9 | |
| Washington-Stokane | 0-12 | 1 | |
| Wiscensin-Mile ankee, | | 4 | |
| Smallpox For | eign. | | |
| Algeria Aleren | 1-31 | | 3 |
| Care Colony-East London Apt. | 1-15 | 5 | |
| Egyot-CairoAug. | | 2 | |
| Grenada, Island of Sept. Italy—General Aug. | on Sept 6 | 34 | |
| Italy—GeneralAug. | 29°3cpt. 0 | 34 I | |
| Italy-Piscinola, vicinity of Naples, Sept. | D. 1.2 | - 7 | |
| Norway—Christiania | 22-20 | 1.3 | 4 |
| Peru—CallaoAug. | 31 | - 5 | Present. |
| RussiaMoscow | 22 20 | 10 | 3 |
| Straits Settlements-Penang Aug. | 18 | 1 | |
| Yellow Fever-F | | | |
| Mexico-MeridaSept. | | 2 | |
| St. Vincent Island | 5 12 | - 2 | 2 |
| Cholera—Fore | | | |
| Austria—TarnopolSert. | | y 1 | Imported. |
| China—HongkongAug. | 1.75 | 4 | 5 |
| Russia—Generalept. | 14 | | 1.026 |
| Russia—St. Petersburg Sept. | тл-28 | 508 | 203 |
| Straits Settlements—SingaporeAug. | 1-8 | _ | 2 |
| Plague—Forc | | | |
| China Hangkong | *6 /*. T-15 | 14 | 10 |
| China—Hongkong | S-15 | 160 | 925 |
| Mauritius-Port LewisMay | 1-31 | I | I |
| Peru_GeneralAug. | 8-24 | 30 | 13 |
| Dome College Aug. | 8-24 | 2 | 2 |
| Peru-Lima | 8-24 | 4 | 1 |
| Venezuela—CaracasSept. | | - 3 | 1 |
| In | hospital | 11 | |
| | | | |

Public Health and Marine Hospital Service:

List of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 30, 1908:

BOYD, FRANK, Acting Assistant Surgeon. Granted four days' leave of absence from September 22, 1908.

EBERT, H. G., Passed Assistant Surgeon. Relieved from duty at San Francisco and directed to proceed to Manila, P. I.

FOSTER, J. P. C., Acting Assistant Surgeon. Granted ten days' leave of absence from September 23, 1908.

GASSAWAY, J. M., Surgeon. Granted one day's leave of absence.

absence.
GCLDSSOROUGH, B. W., Acting Assistant Surgeon. Granted two days' leave of absence from September 29, 1908.
GRAHAM, K. H., Pharmacist. Directed to proceed to Baltimore, Md., for temporary duty.
LYALL, R., Acting Assistant Surgeon. Granted an extension of seven days' leave of absence from September

28, 1908, without pay.
MATHEWSON, H. S., Passed Assistant Surgeon. Granted

one day's leave of absence.

MEAD, F. W., Surgeon. Leave for one month, granted August 7, 1908, amended to read twenty-seven days from August 26, 1908.

MULLAN, E. H., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Mon-

treal, Canada.

SALMON, T. W., Passed Assistant Surgeon. Directed to proceed to Stapleton, N. Y., upon temporary duty.

SAFFORD, M. V., Acting Assistant Surgeon. Granted four days' leave of absence from September 24, 1908, under paragraph 210, Service Regulations. SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Di-

rected to proceed to the Bureau upon special temporary duty.

STEARNS, H. H., Acting Assistant Surgeon. Granted four days' extension of leave of absence from September 14, 1908, on account of sickness.

STERNS, C. O., Pharmacist. Assigned to station, Hygienic Laboratory, Washington, D. C. Troxler, R. F., Pharmacist. Assigned to station at Evans-

TROXLER, R. F., Pharmacist. Granted seven days' leave of absence from September 28, 1908.

Appointment.

Dr., S. A. Ransom appointed an acting assistant surgeon for duty at Shanghai, China.

Board Convened.

A board of medical officers convened to meet at Seattle, Wash, for the purpose of examination of two Chinamen from Steamship Kuncric. Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon F. R. Underwood, recorder.

Navy Intelligence:

Official list of changes in the medical corps of the United States Navy for the week ending October 3, 1200

ALLEN, D. G., Assistant Surgeon. Detached from duty at the Naval Medical School, Washington, D. C., and or-dered to a course of instruction at that school on October 1, 1908.

BOLAND, M., Assistant Surgeon. Detached from the naval recruiting station, Detroit, Mich., and ordered to the

Castine, when commissioned.

Brown, E. W., Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and granted three months' sick leave.

HARLAN, T., Acting Assistant Surgeon. Ordered to a course of instruction at the Naval Medical School,

Washington, D. C., October I, 1908.

Johnson, L. W., Assistant Surgeon. Ordered to a course of instruction at the Naval Medical School, Washing-

of instruction at the Naval Medical School, Washington, D. C., October I, 1908.

Porter, F. E., Passed Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the naval recruiting station, Detroit, Mich.

Schmidt, L. M., Assistant Surgeon. Detached from duty at the Naval Hospital, Annapolis, Md., and ordered to a course of instruction at the Naval Medical School, Washington, D. C. October I, 1008.

Washington, D. C., October 1, 1908.
Shippen, L. P., Assistant Surgeon. Ordered to a course of instruction at the Naval Medical School, Washing-

ton, D. C., on October 1, 1998.

Stanley, A. C., Assistant Surgeon. Detached from duty at the Naval Medical School Hospital, Washington. D. C., and ordered to a course of instruction at the

TURNER, H. W. B., Assistant Surgeon. Detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to a course of instruction at the school.

Army Intelligence:

Official list of changes in the stations and duties of officers in the medical corps of the United States Army for the week ending October 3, 1908:

CARTER, W. F., Major, Medical Corps. Retired from active service upon his own application, to take effect July 8, 1000, when he shall have completed thirty years

COBURN, H. C., First Lieutenant, Medical Reserve Corps. Placed on active duty; will proceed to Washington, D. C., and report on October I, 1908, for a course of instruction at the Army Medical School.

EBER, A. H., First Lieutenant, Medical Reserve Corps. Ordered from Fort De Soto, Fla., to Key West Barracks,

Fla., for temperary duty.

JOHNSON, C. W., First Lieutenant, Medical Reserve Corps.

Ordered with troops from Fort Des Moines, Ia., to
tournament at Louisville, Ky.

KEARNY, R. A., First Lieutenant, Medical Reserve Corps.
Placed on active duty; will proceed to Washington,
D. C., and report October 1, 1908, for a course of instruction at the Army Medical School.

KNOX, H. A., First Lieutenant, Medical Reserve Corps.
Assigned to active duty; ordered to Fort Michie,
N. Y. for duty.

N. Y., for duty. lieved from duty with Company C. Hospital Corps, at the Army General Hospital, Washington, D. C., and PHILLIPS, H. F., First Lieutenant, Medical Reserve Corps. Placed on active duty; will proceed to Washington, D. C., and report on October 1, 1908, for a course of instruction at the Army Medical School.

SLATER, E. F., First Lieutenant, Medical Reserve Corps. Ordered from Madison Barracks, N. Y., to Plattsburg Barracks, N. Y., for temporary duty.

STARK, A. N., Major, Medical Corps. Granted leave of absence for one mouth to take effect about December.

absence for one month, to take effect about December 15th, with permission to apply for an extension of fif-

teen days.

Tyler, G. T., First Lieutenant, Medical Reserve Corps.

Ordered from Fort Porter, N. Y., to Fort Jay, N. Y.,

Wells, F. M., First Lieutenant, Medical Reserve Corps. Ordered from Fort Robinson, Neb., to St. Joseph, Mo., for duty with the United States troops.
WOLFE, E. P., Captain, Medical Corps. Granted leave of

Births, Marriages, and Beaths.

Born.

Hansell.—In Fort Snelling, Minnesota, on Saturday, September 26th, to Captain Heywood S. Hansell, Medical Corps of the United States Army, and Mrs. Hansell, a

RUSSELL.—In Waterbury, Connecticut, on Saturday, August 8th, to Dr. Edmund Russell and Mrs. Russell, a

EDMANS—CASEY.—In Troy, New York, on Wednesday, September 23d, Dr. Raymond Goulden Edmans and Mrs.

Amelia Veronica Casey.

FUNKE—McCaulley.—In Philadelphia, on Wednesday,
September 23d, Dr. Alfred H. Funke and Miss Elizabeth M. McCaulley.

JENNINGS-JUDSON.—In New York, on Wednesday, September 30th, Dr. Walter D. Jennings and Miss Mabel

ROSENBAUM—BELBER.—In Philadelphia, on Tuesday, September 22d, Dr. George Rosenbaum and Miss Rebecca

SUTTON—CUMMINGS.—In River Forest, Illinois, on Friday, September 18th, Dr. Howard Anderson Sutton, of Philadelphia, and Miss Julia Stewart Cummings.

WFED—HOWELL.—In Plattsburg, New York, on Saturday, September 19th, Dr. Frank W. Weed, United States Army, and Miss Abigail S. Howell.

BARTSCHER.-In St. Louis, Missouri, on Monday, Septem-BARTSCHER—III 5t. LOUIS, MISSOURI, OH MORREY, SEP-ber 28th, Dr. Hugo W. Bartscher, aged forty-nine years. CLARK.—In Portland, Maine, on Thursday, September 24th, Dr. Walter T. Clark, of Worcester, Massachusetts. FISHER.—In Providence, Rhode Island, on Wednesday,

September 30th, Dr. George Russell Fisher, aged fifty-five

years.
Grosser.—In Wilkesbarre, Pennsylvania, on Thursday,
September 24th, Dr. Claude R. Grosser.
KINNEAR.—In Clifton Springs, New York, on Tuesday,
September 29th, Dr. Beverley Ö. Kinnear, aged sixty years.
Phillips.—In Cape May, New Jersey, on Sunday, September 20th, Dr. Edward H. Phillips, aged seventy-eight

SENNER.—In New York, on Monday, September 28th, Dr. Joseph H. Senner, aged sixty-two years.
SHILAND.—In Watervliet, New York, on Thursday, September 24th, Dr. John Cramer Shiland, aged fifty-three

Sewell.—In Cave Springs, Georgia, on Sunday, September 27th, Dr. Isaac Sewell, aged thirty-three years. Summers.—In Atlantic City, New Jersey, on Thursday, October 1st, Brigadier General J. E. Summers, Medical Corps of the United States Army, retired. TAYLOR.—In Defiance, Ohio, on Saturday, September 19th, Dr. Dwight B. Taylor.

Winters. In Jesington, Rentacky, on Tuesday, September 29th, Dr. John W. Whitney, aged seventy-nine

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Original Communications.

ORATION ON SURGERY.

Some of the Achievements of Modern Surgery.*

By Frank LeMoyne Hupp, A. M., M. D., Wheeling, W. Va.,

Attending Surgeon to the City Hospital.

It is altogether fitting and proper that we should gather together here in the capital city of Harrison County to pay the homage of our profound gratitude and admiration to the fathers of American surgery, and to discuss and interchange ideas with regard to the laboratory and clinical research work, which has been accomplished with such signal success within the past few years.

Many years ago it was the writer's inestimable

privilege to receive his first lesson in surgery at the operating table in the old building of the North Wheeling Hospital. The man holding the knife was that pioneer teacher and fearless operator, Dr. Washington L. Atlee, of Philadelphia. physicians who witnessed the work of that April morning in 1877 were Dr. John Frissell, Dr. E. A. Hildreth, 1st, Dr. Robert W. Hazlett, Dr. C. A. Wingerter, Dr. M. F. Hullihen, Dr. S. L. Jepson, Dr. Archibald S. Todd, and Dr. John C. Hupp, all of Wheeling, and Dr. John Todd, of Bridgeport, Ohio. There were two cases prepared to receive whatever benefit could be derived from one of the greatest craftsmen in American surgery. The operative procedures were, one for the removal of a multilocular ovarian cyst, and the second was for the evacuation of a collection of pus in the right lower quadrant of the abdomen, probably appendical or tubal in origin. Aside from a very ordinary washing of the hands, and the wearing of protecting aprons of unsterile muslin and rubber, no other preparation was made, and no pretense at antiseptic methods attempted. The second of those two patients is alive and in health to-day, with a perfectly firm abdominal

wealth.

That great teacher, and those associated with him on that memorable day, with two exceptions, have gone to their reward.

cicatrix, living beneath the shadow of our City Hos-

pital. These were among the first abdominal sec-

tions performed within the borders of our common-

The scholarly contributions from the pen of Dr. Atlee, teeming with seductive argument, eloquent appeal, and powerful rhetoric, coming as they did from the frontier line, and his courageous work in

*Read at the annual meeting of the West Virginia State Medic. Association, Clarksharg, May 12, 1908.

the face of the most trenchant criticism, while little spoken of in the history of surgery, not only developed the character of coming generations of medical men, but acted as a safe and sane guide to the estimation of the scientific spirit, which inspired their practice. It required the valor and resolution of a knight to declare one's convictions, and an equal amount of courage to execute an innovation in those formative days. For there were occasions in Atlee's earlier work, true also in the history of that pioneer Kentuckian, Ephraim McDowell, when the exploitation of any new and radical idea was met and retarded by the fiercest public opposition.

It is reported (1) that the classical ovariotomy performed by McDowell, in 1800, created so much bitter criticism, both professional and public, that a mob collected around the house in which it was performed, prepared to attack the surgeon if he failed. While much later Atlee's life was more than once threatened because of a fatality following an abdominal section. Before the time when Atlee visited Wheeling and subsequently, some of us were privileged to witness the work of that leader of the vanguard in affairs surgical, here in our mountain State, Dr. John Frissell, whose masterly work in all branches of surgery, stood as a beacon light, encouraging others of the present generation on to better and more difficult achievements, and search lighting the pathway into broader fields. His was a large heart, a steady hand, and a well poised mind.

How alluring it would be to turn the yellow pages of the forgotten past back through the developmental era of American surgery, where stand forth in bold type the names of John Jones, Warren, Bige-low, Atlee, Gross, Agnew, Willard Parker, Marion Sims, Sands, and Markoe, and a host of others; to review a history of that formative era of our own Western Virginia, where the patience, zeal, and skill of a Hullihen or a Frissell are set forth. How interesting and profitable a record of their methods and end results would be to the members of this West Virginia Society. While it is altogether fitting and proper that we should give a full measure of devotion to the spirit of the men of vesterday, it is rather for us to honor and encourage that scholarly body of present day workers, who in the laboratories of experimental research, through merciful vivisection, are making possible the most interesting clinical advances, and who have made and are making medicine the link that unites science with philanthrophy.

The world shows too little appreciation for that spirit of devotion to a high purpose along medical and scientific lines, a devotion which sinks the selfish in the common weal. Witness the lives of a Lazear

or a Walter Reed, and a host of others of our craft. Men who lived and died for a cause, fired by a love of knowledge; men who sacrificed their very life's blood on the altar of science and humanity; men who laid up few treasures beyond a meagre blessing of their brother men, and no investments save that which adds to the sum of human knowledge and experience.

To review and do full justice to a subject so progressive and changeful as the practice of surgery, as we see it to-day, to involve ourselves in the discussion of the achievements of the world's operators, the living men, would require a great deal of time, and very many volumes. Only a few, therefore, of the more important advancements will be

touched upon.

ANÆSTHESIA.—Somewhere in the Genesis of the Holy Writ we find: "And the Lord God caused a deep sleep to fall upon Adam and he slept; and He took one of his ribs and closed up the flesh instead thereof." This is probably the very first record of painless surgery. There is no theme in the whole realm of medical thought, no chapter in the history of surgery so interesting; from the God given sleep for the first man; the carotid pressure of the Assyrians; the administering of the paralyzing hemp, antimony, and curare of the Chinese; the mandrake of the Greeks and Romans: down over the blazed trail of our forefathers, leading to the advent of ether and chloroform.

How many persons, who by necessity have subjected themselves to the surgeon's knife, have paused to reflect over the poignancy of their agony had no anæsthetic been used? If a surgical operation is a matter of serious dread now, how much greater must it have been when the patient, strapped to the table, was alive to every stroke of the cold

The overwhelming desire on the part of the profession to annihilate pain during surgical procedure brought the names of three men, with their discoveries, into everlasting remembrance, within three short years. Horace Wells with his nitrous oxide gas, in 1844; Morton with ether in 1846; and Simpson bringing chloroform in 1847.

These discoveries, together with the creative genius of Lord Lister, a few years later on, "swept away the long established metes and bounds of the field of operative surgery, and made it as limitless as are the diseases and injuries of the human body and man's desire and efforts to relieve them." (Stephen

At the City Hospital, in Wheeling we use ether almost exclusively when a general anæsthetic is required. The continuous drop method is employed, and it is preceded one half hour by the hypodermic administration of morphine and atropine. Our experience, covering twenty years, justifies the hearty endorsement of Murphy's words (2) that "chloroform is rarely justifiable; that the use of scopolamine from present statistics is quasicriminal. anæsthesia has a permanent place in selected cases. Nitrous oxide has its position for short anæsthesias; its use before ether is unnecesary and complicating. Ethyl chloride is a fairly safe anæsthetic in appropriate cases.

Accidents Due to Anæsthesia.—Dr. Mitchell (3)

thinks that if all instances of death directly due to the anæsthetic were known the rate would be much higher than that ordinarily given, that is: I in 1,000 for chloroform, I in 10,000 for ether, and I in 100,-

ooo for nitrous oxide gas.

Dr. Bevan (4) after extolling the merits of nitrous oxide, places the mortality at I in 2,000 for chloroform, I in 5,000 for ether, and I in 50,000 for nitrous oxide gas. Henle (5) reports 1,787 abdominal operations followed by 143 cases of pneumonia, with a mortality of sixty-five per cent.; Czerney, 1,302, with fifty-two cases of lung complications; Kümmell, of Hamburg, 1,754 laparotomies, with forty-three cases; Kausch (Mickulicz's clinic), 1,881, with forty-five cases of lung complications.

La Pointe (6) collects thirty-three cases from the literature, not including two of his own, of death due to enlarged thymus gland, following soon after

the beginning of the anæsthesia.

Local Anæsthesia.—With Halsted and Corning (1884-5) its early exponents, and later with Reclus and Schleich overcoming the prejudices brought about by the indiscriminate infiltration of large doses of cocaine, this method of annihilating pain

has undoubtedly come to stay.

The last year or two have witnessed marked improvements in the technique of local anæsthesia; important among these are the injection of nerve trunks and the addition of adrenalin to the solutions used. Dr. Mitchell uses a one per cent. solution of cocaine for the nerve blocking, as suggested by Crile, and one tenth of one per cent. solution for ordinary infiltration. During a period of the first three months of 1907, Mitchell executed over forty per cent. of all his operations under local anæsthesia, including amputation of the limbs, wiring of fractures, resection of glands of the neck, inguinal hernia, rib excision, trephining, thyreoidectomy, breast excision, and many abdominal operations.

BIER'S TREATMENT .- With his gift, the Stanungs (obstructive) Hyperamia, to the profession, published first in 1892, August Bier (7), late professor of surgery in the University of Bonn and recently elevated to the chair of surgery in the University of Berlin, has certainly bound up the broken reeds and cheered the struggling hearts of many who suffer. His discovery, with its manifold benefits to humanity, placing as it does within the reach of the surgeon a weapon of no mean power, creates beyond dispute a distinct epoch in the field of surgical endeavor.

Verily, from the light of new discoveries blazing about us, we are well nigh blinded by their near and sudden glory. Some distant objects that we once saw distinctly, and which seemed permanent in their usefulness, have altogether faded or have grown so dim and shadowy that in "the strife of aching vision" we scarcely know what they are, or where

they are.

Hear then, how the ingenuity of the Berlin savant has revolutionized our ideas.

1. Bier's treatment (8) increases, artificially, redness, swelling, and heat; three of the cardinal symptoms of inflammation, the very factors we have always sought to avert.

2. He asserts through the use of the ice bag and

of a phlegmon or a lymphangeitis, that the defending power of the leucocyte is compromised, and the bacteria assisted in their work of destruction. Thus two time trusted measures are pushed aside.

3. Increased temperature, or hyperæmia, Bier

considers a part of the healing process.

4. He maintains that the tuberculous joint must be movable after the disease is healed; that a stiff joint following the repair of a tuberculous arthritis should not be considered a good result. That the immobilization in these joints is contraindicated. That the resection of a tuberculous joint may rid the patient of the focus of mischief, but should be considered to-day a mutilation.

5. That tubing and wicks which were used yesterday to drain the abscess cavities are to-day considered by Professor Bier as relics of barbarism, unnecessary and even harmful. The cupping glass in conjunction with the *Stauungsbinde* is sufficient to empty the cavity and promote the healing.

"I believe," writes Professor Bier (9), "that the practical use of hyperæmia represents the most general and comprehensive mode of treatment in medicine; for I do not know of another remedy that could be successfully employed in so many directions. I have described such a variety of different troubles that were subjected to hyperæmia that many may think I have gone too far. But, on the contrary, I am convinced that this remedy, used by Nature in such a profuse measure to combat all sorts of lesions, is destined to be far more extensively used than has hitherto been attempted." John B. Murphy writes editorially (10) that a very extensive use of the Bier's treatment has convinced him that its efficacy is underestimated; that it is indifferently applied; that it is even of greater service in the acute than in the chronic infective processes; that it is curative in rodent ulcers of the face; that it is palliative in inoperable carcinoma to which it can be applied. Surgeons in general report, that better results are being obtained, and a wider field of usefulness developed, as they become more familiar with the method and more skilled in its use. It is not a "cure all" or a fad for the specialist, but a rational treatment based upon sound principles, and can be used by every practitioner in his daily work.

It is interesting to note that the idea of making use of an increased volume of blood in and around the diseased focus (Willy Meyer, II) was conceived by Bier during his studies of the observation of the late Professor von Rokitansky, who found that patients who had suffered from stasis in the pulmonary circulation, due to heart disease, never exhibited an active lung affection on post mortem

examination.

Action Explained.—Hollister (12) alleges that the treatment avails, not so much because of the hyperleucocytosis, as because of the hyperopsonization, and the necessity of combining passive hyperæmia with surgery depends on the fact that the local opsonic power is increased. He advises raising the general opsonic index by means of appropriate vaccines if necessary.

Another writer (13) explains the action of this treatment as due to the transudation of serum that occurs into the diseased area, physically diluting the toxines and thereby reducing the intensity of their

action. This dilution also serves to facilitate the gradual absorption and consequent excretion of these noxious materials. The antibodies also take a hand in diminishing the virulence of the toxines. The migration of leucocytes invariably favors phagocytosis. In addition, the leucocytes, it is stated, form a membrane, thus walling off the disease area, limiting its spread by continuity, and depriving the bacteria of new culture media.

Technique.—1. The bandage used is the broad Esmarch, one layer to overlap the other. (Willy

Meyer.)

2. The pulsation of the artery must always be felt while the bandage is in position.

3. A red warm hyperæmia, not a blue or cyanotic one, is desirable. (Schmieden.)

4. Pain is always to be relieved not increased by the treatment.

DIRECT TRANSFUSION OF BLOOD.—A recent writer has this to say of the direct transfusion of blood (14): "Rarely, if ever, will there be enough advantage in the use of blood transfusion, to overbalance its greater dangers and difficulties, and the greater delay in administering it." The experimental research of Crile (15, 16, 17) developing the technique of this line of endeavor, controverts emphatically the foregoing. Crile's paper before the section in anatomy and surgery, at the last meeting of the American Medical Association, detailed the most brilliant work along this line. In his clinical transfusions he utilized the radial artery of the donor, and the proximal end of any superficial vein of the arm of the recipient. Thus the vascular systems of two individuals may be united so that intima comes in contact with intima; that blood may be transferred without clotting; that the operation may be done painlessly; that the blood lost by the donor is regained in from four to five days. The technique insures a perfect control of the amount transferred, an important point, as overcharging the pulmonary circulation is dangerous.

The anastomosis is a temporary one and is effected by means of a metallic tube over which a cuff of the artery is turned back, exposing intima. The vein being drawn over this and sutured into place.

(Mitchell.

The enthusiasm exhibited by those who had listened with bewilderment to the restoration of Crile's exsanguinated patient will not be soon forgotten. The man had practically bled to death, and bore the stamp of the hippocratic countenance—cold, unconscious, and livid. Two brothers had come to the rescue and emptied their life's blood through the tiny metallic cannula into their all but dead kinsman. The scene, a most dramatic one, was described: The pulsating radials returned stronger and stronger; the pallid lips became a normal red; the warmth of a brother's blood relieved the death like chill, the eyes opened wide, and the patient expressed his gratitude feelingly to those about him.

The occurrence of spontaneous cessation of hæmorrhage in two of Crile's cases.—each of which was pathological,—suggests strongly this method of treatment for cholæmic, hæmophilic, and other forms of pathological hæmorrhage. Since the healthy blood of one individual is apparently physiologically interchangeable with that of another, if the

blood lost by one is replaced by an equal quantity from another, hæmorrhage may by direct transfu-

sion be eliminated. (Murphy, 1907.)

Here we have the twentieth century technique of a master stroke, practised in the middle ages, mentioned by Savonarola, forgotten by the nineteenth century, and revived by Cleveland's wizard surgeon, a priceless boon to man.

APPENDICITIS.—A helpful recent contribution to appendical surgery is from the pen of Dr. Stanton, of Schenectady. His observations are based upon the operative findings in 1,019 cases, and studied with reference to the pathological course in this disease. He ascribes the uniformity of pathological findings in those cases not immediately operated on, to the fact, that every effort was made to limit the further spread of the infection through peristalsis, by the Ochsnerian treatment of rest and starvation. In 191 acute cases subjected to this treatment, there were but three deaths or 1.57 per cent.

Stanton believes that there can be no doubt of the advisability of early operative interference prior to the advent of the overwhelming peritoneal infection; before the exudate becomes seropurulent in

character.

We cannot help recognizing the wisdom of Dr. Ochsner's teaching, as voiced by Dr. Stanton, in certain acute cases of appendicitis, who in the country districts are so far removed from the surgeon. And we believe and here wish to emphasize, that the country practitioner who is not doing major surgery, should be familiar with every detail of the treatment which has been given to the profession by Dr. Ochsner.

Yet, those of us who live in the more populous districts and who see many of these patients know how utterly impossible it is to establish a line of demarcation between the pathological changes oc-

curring within the peritoneal cavity.

Who can determine when the serous exudate becomes purulent, or when the engorged mucosa becomes gangrenous? Often the earlier symptoms give no clue to the real extent of the damage which the appendix has sustained, or of the imminence of diffused and general peritoneal infection (Pilcher). Because of this uncertainty, and because 5,500 cases of appendicitis perish annually in this fair land of ours, we wish to emphasize that in every case of incipient inflammatory trouble resident in the subdiaphragmatic region, the physician and surgeon should act conjointly. There seems to be no reason why cases of appendicitis diagnosticated, and referred to a competent surgeon within twenty-four to forty-eight hours, should not present a mortality of less than two per cent. (Coffee).

John B. Murphy says the man who is having more than three or four deaths in one hundred operations for appendicitis, is either receiving his patronage from incompetent or procrastinating medical men, or he is doing too much manipulating in the peritoneal cavity, under unfavorable condi-

Let this society then, express itself as favoring, with reference to appendicitis: Early recognition, no therapeutics, early and clean surgery, and a perfected technique

Stouther Surgion. It is not within the scope of

this paper to discuss the surgery of the subdiaphragmatic region; two subjects only will be touched upon, gastric ulcer and carcinoma.

Ulcer of the Stomach.—The surgeon and internist agree that operative interference should be resorted to when persistent and thorough internal treatment of gastric ulcer have effected only temporary improvement, and the patient's life has been rendered burdensome through pain, vomiting, and dyspepsia (Stedman, 18). Early diagnosis and prompt surgical relief of acute ulceration should be imperative, when we reflect that perforation, hæmorrhage, and obstruction due to resulting cica-

trices, all contribute to a high mortality.

Ulcers appearing in the young and generally anæmic women, we are told by Foote (19) yield to rational medical treatment in about eighty per cent. of the cases. The remaining twenty per cent. of medical failures are turned over to the surgeon, as a last resort, and he is able to cure about fifty per cent. of them. If the patient shows no improvement in thirty days under medical treatment he never will show it. It is in these patients that surgery has its most brilliant results, in the operation of gastroenterostomy, establishing as it does better drainage of the stomach, and at a point where the food and acidity will not have to pass over the lesion.

The unanswered questions, according to Murphy, concerning the treatment of gastric ulcer are many: "Whether it shall be excision in the greater percentage of cases, gastroenterostomy, or pyloroplasty, with or without pyloric occlusion, is a matter awaiting the final results, in the large number of cases now being treated by these various methods."

Franz Toreck (20) states that sixty per cent. of the cases of cancer of the stomach arise from a concinual acid irrigation of a one time benign ulcer.

A Tribute to the Mayos.—The writer wishes to emphasize the value of the contributions from the pen of W. J. Mayo, to both stomach and intestinal surgery during the past few years. Dr. Mayo's Mütter lecture (34) setting forth the principles underlying the surgery of the stomach; his scholarly essay relating to the recognition of the mesocolic band in gastroenterostomy (35) and the publication of his operating room results, in order to a better understanding of gastric and duodenal ulcer (36), are all classics of the highest order, and should be thoughtfully studied by every internist as well as by him who contemplates the practice of this branch of surgery

That a populous community is not indispensable for the development of the best and the highest, the little town of Rochester, Minnesota, has most

brilliantly demonstrated (Richardson).

Gastric Cancer.—This disease is of much more frequent occurrence than one would suppose. Dowd (21) discloses the startling fact that the census report for 1900 indicates that there were nine thousand deaths from cancer of the stomach in that year.

Professor W. Gilman Thompson, of the Cornell raculty of medicine, in a paper (22) read before the Cleveland Academy of Medicine in February, 1907, makes an eloquent appeal for the earlier recognition of this disease. He summarizes as follows the conditions which combine to make operation, not only justifiable but desirable:

"I. The patient's age should be within the average cancer developing period, for gastric cases, i. e.,

between forty and sixty-five years.

"2. There should be a rapid and decided loss of weight and strength, without other assignable cause, such as chronic gastric catarrh, neurasthenia, mental strain or worry, or chronic general disease, such as diabetes, etc.

"3. There should be evidence of some degree of

stagnation of food contents in the stomach.

"4. There should be failure to improve in marked degree under treatment, after a few weeks' trial. With these four conditions fulfilled, exploration should be seriously considered, despite the absence of gastric pain or other marked gastric symptoms. In addition there may be:

"5. A leucocytosis of 12,000 to 16,000 with polynucleosis and a moderate secondary anæmia, with

low color index.

"6. Decided dilatation of the stomach. With these two additional factors, operation is distinctly indicated. Still further there may be:

"7. Occasional attacks of vomiting, often without

definite relation to food ingestion.

"8. Occult or visible blood in the vomitus or

stools.

"9. Epigastric or right hypogastric rigidity and tenderness on deep pressure. With these symptoms added, the diagnosis can admit of practically no question. In this order of relative importance of symptoms I have purposely left until the last, as being often unreliable, (10) the demonstration of hyperacidity or anacidity, and (11) the so called carcinomatous cachexia, which, while plain enough toward the fatal ending, is often wanting as an early definite appearance."

Mayo has so perfected the technique of this branch of surgery that his recent statistics for partial gastrectomy shows that in eighty-one operations the mortality was fourteen per cent., but in the last twenty-five cases it was only four per cent., and one fourth of the patients were still living three years

subsequent to the operation (Murphy)

Vassalo (23) reports the successful removal of the entire stomach for cancer, the operation lasting only thirty-eight minutes. Four months later the patient was examined and found to be in excellent health and experienced no pain or difficulty in digestion. This brilliant South American operator has performed seventeen pylorectomies with only one death.

In regard to carcinomatous affections of the subdiaphragmatic organs it is interesting to note that Lecene has according to Hartman (24) collected forty cases of primary cancer of the appendix. Recovery seemed complete following operation, four,

three, and two years later.

Trypsin and Amylopsin.—If the trophoblastic theory of Beard and Saleeby, of Edinburgh, and its logical sequence, the trypsin and amylopsin treatment of cancer of the stomach, leads to even a partial conquest of this hitherto incurable malady, the profession will not only be obliged to take these much abused investigators seriously, but the scalpel and needle may be consigned to the corrupting influence of the moth and the rust.

Intestinal Obstruction .- W. J. Mayo (33) points

out that the frequent necessity of resection for the relief of intestinal obstruction is a somber commentary on the diagnostic ability of the profession. In the very large majority of the cases delay is responsible rather than the primary cause of the ileus. The favorable cases are those in which there is interruption of the fæcal current without vascular strangulation.

VACCINE THERAPY AND THE OPSONINS.—Homer B. Smith, of Boston, tells us how the method of defense of an organism against an invading microorganism, was explained by one of Pasteur's successors, Metchnikoff, whose fundamental conception was, that the existence or cultivation of immunity depends upon the digestive action of certain cells of

the body, the phagocytes.

Opsonins are substances normally present in the blood serum, and whose production is stimulated by the injection of sterile emulsions of the dead bacteria whose effect are to be antagonized. The vaccines or bacterins so act on these microscopic enemies of life and health, as to make them more readily the prey of the phagocytic sentinels of the

body.

When Pasteur conceived his preventive treatment for hydrophobia, and our recent distinguished visitor Robert Koch established the practice of injections of bacteria products for curative purposes, and Petruschky and Richardson attempted to hasten the reactions that lead to the healing of the ulcerated Peyer's patch, they foreshadowed the genius of Wright, to whom the world owes an everlasting debt for the placing of this wonderful treatment upon a more definite basis. While some writers are prepared to say that with the use of the vaccines or dead bacteria injections, properly carried out, there can be obtained, not only a marked degree of immunity, but an improvement, both constitutional and local in many subacute and chronic infections, entirely beyond anything previously possible in medicine. On the other hand, Dr. William H. Welch, of Baltimore, has said (25) that "there is no instance of substantial protection from disease, by the injection of killed organisms. It is only by the injection of living cultures that we could expect to get the best results in protective vaccination. The vaccination against smallpox, anthrax, rinderpest, and tuberculosis in cattle is all done by living organisms."

Certainly with undaunted courage, Wright has pushed to the foreground the results of his investigations, so that to-day almost every large hospital, recognizing the importance of the opsonic index in vaccine theraphy as applied to the treatment of various infections, is equipped with the apparatus, material and charts for its practical application.

SURGERY OF BLOODVESSELS.—If there is one department of surgery more than another which has been marked by striking progress, it is the chapter dealing, experimentally and clinically, with bloodvessel suture. That a tube of the delicately thin structure of a vein or an artery can be successfully anastomosed by thread and needle, that a technique has been discovered which makes possible an end to end approximation of these fine spun carriers of the vital fluid, and in so doing, accomplishes that great surgical desideratum, the restoration of tissues as near-

ly as possible to their original position, (Sweet, 26); a technique which consigns to oblivion, compression, cauterization, and the ligature of Ambrose

Paré, seems wonderful to contemplate.

The application of this discovery is broad indeed, comprehending the repair of wounds of vessels, both traumatic and those made by the scalpel; the reestablishment of circulation by suture after complete division of a vein or artery; the surgical obliteration of the aneurysmal sac; the direct transfusion of blood (Crile), and the transplantation of

The infinite possibilities and wide range of usefulness inaugurated through the perfected technique seems little short of miraculous. From the wealth of literature on this subject we have selected one paper which it was our pleasure to hear Dr. J. F. Mitchell, of Washington, D. C., read in February last before the Pittsburg College of Physicians. This paper has not yet appeared in print, but in a personal communication Dr. Mitchell has been good enough to furnish the writer with a copy. He tells us that a complete segment of a vein can be transplanted to take the place of a section of an artery. That complete reversal of the circulation of a limb has been attained by dividing the femoral vein and artery and anastomosing artery to vein and vein to artery. The valves in the veins resist for a time but soon give away. These remarkable possibilities are opened up by the experiments of Carvel and Guthrie at the University of Chicago (27).

The whole thigh has been amputated and replaced; the bone, muscles, vessels and nerves united, and the circulation reestablished after an interruption of one and one fourth hours. Healing of the severed tissues appeared to be as complete as after

an ordinary surgical wound.

The most interesting part of the work, writes Dr. Mitchell, is the transplantation of organs, which may be autoplastic, homoplastic, or heteroplastic. The thyreoid gland, the ovary, testicle, kidney, intestines, heart, and lungs, have all been transplanted together with various other organs. The kidney has been extirpated, washed with salt solution and replaced. Both kidneys of one dog have been removed and the kidneys of another put in their place.

The heart of a small dog was transplanted into the neck of a large one, and its vessels sutured to the vessels of the neck. The circulation was reestablished through the transplanted heart about an hour and fifteen minutes after the cessation of the beat. Strong fibrillar contraction soon occurred. Afterwards contractions of the auricles appeared and, about an hour after the operation, effective contraction of the ventricles began. The transplanted heart beat at the rate of 88 per minute, while the rate of the normal heart beat was 100 per

Scream or, and there . A through and through bullet wound of the heart involving the walls of the left ventricle has been successfully closed by Wilms (28). His incision was made between the fourth and fifth ribs. The pericardium was closed without drainage. This is the same approach as was used by Mikulicz in his intrathoracic work.

In Lenormant's (29) balance sheet of the results

in heart suture, 128 cases are reported with fortyseven recoveries, or 36.7 per cent.

Rehu (30) arrests bleeding from a cardiac wound by compression of the inferior vena cava. He always closes the heart wounds with fine silk, and has collected 124 cases with twenty-four recoveries.

Direct Massage of the Heart in Chloroform Collapse.—Lésas (31) has worked patiently in this field for thirty years. Three routes are described: 1, Osteomuscular flap, called the thoracic; 2, transdiaphragmatic, which entails a careful incision of

the diaphragm; 3, subdiaphragmatic.

This latter route is very simple. After a supraumbilical median laparotomy the heart is subjected to conjoined manipulation, with one hand over the chest and the other in the abdominal cavity, and the heart subjected to rhythmical compression and manipulation. Following the exhibition of this method, six successful cases are reported; two returns of the heart beats for a short time, and two failures.

There seems to be little doubt that we have here a heroic and entirely new method which is able to save life when death is inevitable, and other restora-

tive measures have failed.

SURGERY OF THE LUNGS.—Professor Sauerbruch, of Marburg, Germany, formerly assistant to the lamented Mikulicz, certainly deserves the highest praise for his wonderful achievements in the surgery of the thoracic cavity. His tireless experimental research, seeking to prevent pneumothorax in intrathoracic operative measures, by the use of his ingenious pneumatic cabinet, has opened up a new field for the surgeon, and has demonstrated the ease and safety with which every part of the chest can be entered, through large flaps involving many ribs.

Operations which were hitherto looked upon as impossible can now be performed with every assur-

ance of a successful outcome.

Samuel Robinson, of Boston, (32) has also developed the fact that the thorax may be opened and large portions of the lungs removed under the influence of air pressure, without causing immediate death. His experimental research, included pleurotomias, and pneumectomies (partial or complete), on dogs. Thirty cases in all received operation with nine deaths and twenty-one recoveries. Inflation was effected by means of a positive pressure apparatus of Robinson's creation, and the death rate in this experimental intrathoracic surgical procedure, is much lower than has hitherto been reported,

THE GREAT BLACK PLAGUE.—While every other medical subject has been overshadowed, volumes have been written and millions of money spent in behalf of the preventive treatment of the great white plague. What can be said of the infected sixty per cent. of those 770,000 male Americans, who annually attain maturity, apparently well developed and physically endowed, to propagate a healthful race

of men and women?

Let the present day records of the operating room make answer: Seventy-five to eighty per cent. of the women subjected to abdominal surgery may be directly traced to the ravages of the Neisserian

Let the piteous wail from the parched throats of eighty per cent. of the infantile blind give testimony.

Answer me, are not the five to eighteen per cent. of the entire male population, who act as unwilling hosts to the Spirochæta pallida responsible for the excessive infantile mortality and race suicide, with its baneful consequences?

Thank God, the layman, through the great and good work of a Prince Morrow, a McCormack, and a hundred fearless writers, is gradually but surely being emancipated from the thraldom with which

tradition has fettered him.

The American fathers and mothers with marriageable daughters are now undergoing a schooling at the hands of the medical profession which will result in an adequate realization of the fact that theirs is no divided responsibility in this conflict.

In conclusion we desire to recognize with gratitude and admiration the achievements of a few of our American surgeons along some special lines of endeavor, and to express the profound regret, that the scope of this oration will not permit a full discussion of their work.

Dr. Harvey Cushing, of Baltimore, has focused his studies in the direction of surgical neurology, and as a result of his long and painstaking experimental work, has placed the surgery of the brain and nerves on a high and well balanced level.

Dr. Hugh H. Young, of Johns Hopkins, through his untiring investigation in urological surgery, has stimulated the keenest interest of the profession. His writings, daring operative work, and anatomical demonstrations, especially on the prostate, have

been an inspiration.

Dr. Chevalier Jackson, of Pittsburg, in his devotion to the study of tracheobronchoscopy, œsophagoscopy, and gastroscopy has developed an operative technique along the line of instrumentation, a boldness and dexterity almost startling, that will entitle him to the gratitude and praise of generations unborn. Along the lines of experimental research, the obligation of the entire profession to Dr. Simon Flexner and his faithful collaborators is constantly

increasing. The writer is aware that it is rather presumptuous for one absorbed in the cares and duties of a responsible profession, who has added little to the common storehouse of indigenous science, to have occupied so much of your time. Yet he has been profoundly impressed with the importance of the task, and has endeavored to obey the command which has been laid upon him by this association. He will shelter himself, as Dr. Bigelow would say, under the belief that it may sometimes be permitted even to the drone in the hive, to cause the air to vibrate, in honor and in recognition of the labors of his more efficient colleagues.

He has not attempted to cover the entire field of surgical progress, where there have been made such tremendous forward strides; but has endeavored to lead you to the borderland of a boundless arena, and to point out a few of the more important advances, trusting it may stimulate a profitable discussion.

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61 FOURTEENTH STREET.

MIDDLE EAR SUPPURATION.*

By W. Sohier Bryant, A. M., M. D., New York.

Much has been written upon this subject, vet there still seems to be the need for emphazing the necessity of proper and timely treatment, and for stating certain technical points by which serious complications can be avoided, the hearing preserved, and a permanent cure effected. Even if local and systemic extension of the infection of the middle ear has taken place, there are still measures by which fatal consequences may be averted.

The diagnosis of middle ear suppuration is made by inspection of the ear and the discovery of pus coming from the tympanum or from somewhere in the tympanum. Acute cases are sometimes seen before rupture of the drum membrane, consequently no pus is to be found on inspection. In these cases the presence of pus is inferred from a yellowish tinge of the membrane tympani, or by high fever in

Stephen Smith's Into duction to American Practice of Surgery, p. 61.

^{*}Read at the latth Pan American Medical Congress, August, 1408

connection with the acute inflammation of the middle ear. There are a few cases with intact membranes and with no active local manifestation of inflammation where the presence of pus somewhere in the middle ear is suspected from the clinical signs of infection which cannot be accounted for in any other way. There may be pain and tenderness of the mastoid region in these cases, which some time previously have had an active inflammation in the ear. In a few cases with perforation or loss of the tympanic membrane, although pus is not readily found in or about the tympanum, its presence is indicated by local pain and febrile reaction. Careful exploration of the tympanic cavity will usually reveal a small crust, which indicates the seat of infection.

The ætiology of middle ear suppuration comprises a varied bacterial flora which includes all the pyogenic organisms. Streptococci and pneumococci are the usual and the most dangerous varieties. Tuberculous infection is suspected with indolent progressive necrosis. We find that the infecting organism has usually entered the middle ear via the Eustachian tube. In a few cases the infection passes in through an injury of the drum membrane, or by infection of the canal or mastoid region; rarely if ever through the blood current. The cause of the tubal entrance of infections is nearly always some nasopharyngeal disturbance which interferes with the normal tympanic drainage function of the Eustachian tube. The obstruction to drainage also renders the mucosa more liable to invasions through interference with the function of the ciliated epithelium, and by congestion and faulty mucous secretion locally reduces the superficial resistance of the membrane. Interference with the functions of the tuba auditiva is as important an ætiological factor of middle ear suppuration in the exanthematous as in persons otherwise healthy. It is also the chief predisposing factor toward serious extratympanic complications of middle ear suppuration.

Prophylaxis is chiefly directed to putting the nasopharynx in a normal condition and keeping it normal and in preserving the functions of the Eustachian tubes or in restoring these functions if they have been lost. Over ninety-five per cent. of all middle ear suppurations are due primarily to the tubal entrance of bacteria and secondarily to abnormal conditions in the nasopharynx which interfere with the expulsion of bacteria. The nasal douche should be avoided, since it is a common cause of middle ear suppuration. General and local hygiene should be looked to in order that the mucosa may retain its normal bacterial resistance. Resistance to bacteria depends chiefly on the secretion of normal thin mucus. If infection of the tympanum has already occurred, an early section of the membrane is the surest method of preventing later suppuration. For prophylaxis, partial or complete nasopharyngeal obstructions must be removed, the mucous membrane hardened, and normal secretion of thin mucus encouraged.

Complications are usually present in middle ear suppuration. The commonest ones are intratympanic; cholesteatoma; bone caries; granulomata; partial or total loss of the drum membrane and os-

sicular chain. Perforations of the membrane vary in size, position, and number. The position of the perforation indicates the location of the focus of the infection to be attic, Eustachian tube, mastoid antrum, or adjacent tympanic walls. The size of the perforation is indicative of the destructiveness of the process. A multiple perforation is pathognomic of tuberculous infection. Injury to the sound transmitting mechanism is often brought about by adhesions as well as by the loss of structures, and especially by chronic interstitial tympanitis.

The extratympanic complications of middle ear suppuration are very numerous, and are most important from the point of view of fatalities. I. Extensive cholesteatoma eroding the temporal bone and invading the cranial cavity. 2. Extensive caries of the temporal bone with formation of large sequestræ, often including the osseous labyrinth. 3. Mastoiditis or inflammation of the mastoid antrum and cells. 4. Osteomyelitis, or inflammation of the bone and red marrow, usually commencing in the bone of the mastoid process, extending through the temporal bone, and invading the adjacent parietal and occipital bones. 5. Perimastoid cellulitis, inflammation of the tissues covering the mastoid region by direct extension from within. 6. Subperiosteal abscesses occur on the face of the mastoid, and are caused by the pus from within the bone desecting up the periosteum. 7. Mastoid fistulæ, usually multiple, caused by spontaneous drainage of deep lying bone suppuration. 8. Deep cervical cellulitis, caused by escape of pus from the base or inner surface of the mastoid region, and descending down the neck within the deep fossæ. The pus may penetrate into the mediastinum and pleural cavities, thus causing a very serious complication. 9. The tympanic inflammation may attack the labyrinth by invasion of the external semicircular canal, or by penetrating through the fenestræ and causing suppurative labyrinthitis. This is a most dangerous complication, since, besides destroying the auditory and equilibrative functions of the ear, it is very apt to cause leptomeningitis and death. 10. Pachymeningitis is a very common complication of extensive mastoiditis and osteomyelitis. It is not in itself dangerous, but it leads the way for the infection to enter the most vital structures, the pia mater and the sigmoid sinus. 11. Epidural abscess is the result of pachymeningitis; it is a dangerous complication, because of the proximity of the abscess to the arachnoid and sinus. 12. Perisinuous abscess is a complication of an epidural abscess which involves the region of the sinus. This is dangerous because of the threatened extension into the sinus. 13. Sinus phlebitis, one of the most dangerous complications, is due to the extension of the infection into the wall of the lateral sinus, sigmoid sinus, or bulb of the jugular vein. First a parietal thrombus forms over the infected area. This thrombus may increase till it occludes the vessel, and may extend in both directions. It may later break down and be-Sometimes the infection of the come purulent. sinus wall and jugular vein wall extend far beyond an occluding thrombus. In these cases the infected vein or sinus is lined by a mural thrombus. When the virulence of the infection is great and the

resistance of the individual slight, the local toxic effect of the infection may be sufficient to cause necrosis of the meninges at the focus of infection on the dura mater, resulting in gangrene of the meninges and adjacent structures, including the dura mater, sinus, and brain tissue. This condition is usually fatal. 15. Cerebral abscess is an important extratympanic complication of middle ear sup-It may arise from direct extension of the infection through the tegmen and dura, or it may follow the course of the veins and lymphatics and macroscopically have the appearance of a metastatic abscess. The cerebral abscess or abscesses are in the temporal lobe and lie near the tegmen tympani. 16. Cerebellar abscesses usually originate in one of two ways; either by direct extension through the dura mater, in the neighborhood of the sigmoid sinus, or by extension from an infected labyrinth. In the latter case, the infection penetrates through the internal auditory meatus and instead of causing purulent leptomeningitis of the cerebellar fossa, causes an abscess of the adjacent cerebellar lobe. 17. Serous meningitis is an inflammation of the meninges which has not developed into suppuration. Its dangers are compression of the cranial contents and final suppuration. In either case death may result. 18. Purulent leptomeningitis may be due to direct extension from the middle ear, or to a secondary extension from the temporal bone and dura mater. In the middle cranial fossa it usually commences at the tegmen tympani. In the cerebellar fossa it usually commences by extension through the internal auditory meatus or by extension from the neighborhood of the sigmoid sinus. 19. Encephalitis is a diffused infection of the brain tissue; its origin is the same as that of brain abscess, but its course is more acute. 20. Cerebrospinal meningitis is a complication caused by the extension of leptomeningitis or by the extension of the infection into the lateral ventricles and spinal cord. 21. Middle ear suppuration and its complications, especially sinus thrombosis, may give rise to metastatic suppuration in the large joints and pleural cavities and other lymph spaces, also abscess formations in distant cellular tissue and organs. Sinus thrombosis occasionally gives rise to septicpulmonary emboli, which cause pulmonary infection and necrosis. 22. The bacterial poisons absorbed from the infected ear or its complications may be sufficient to cause a fatal septic fever. 23. Bacteriæmia, if the bacteria gain entrance to the blood, may follow suppurative otitis and its complications. Bacteriæmia indicates very low obsonic resistance. and is usually fatal.

Middle ear suppuration and its complications respond to treatment and cicatrize, or occasionally they heal spontaneously. The results in either case are very similar. The natural results are closely akin to operative results, but their course is very slow and fraught with the greatest danger to function and life. Various defects are found after the suppuration is healed. I. Scars of the tympanic membrane, closing perforations made by ulcerative processes. 2. Cicatricial adhesions of the tympanic membrane and ossicles to each other or to the promontorial wall. 3. Perforations and losses of the

tissues of the tympanic membrane which have no tendency to close up. 4. The postaural surface, instead of having the normal convex contour, may be depressed owing to the loss of bone. 5. Permanent postaural fistulæ leading into the tympanum may remain after the process of healing is complete. 6. The ulcerative process in the external meatus may cicatrize and result in a narrow stricture or even total occlusion of the meatus in its osseous portion. 7. Cholesteatomata often form after the cessation of suppuration of the middle ear. These cholesteatomata are a frequent cause of recurrent suppuration and of recurrent mastoiditis. 8. Ulceration may cause the loss of any part or of the whole of the tympanic structures, of the drum membrane, of all the ossicles, as well as of the bony walls. The bony walls usually lost are the annulus tympanicus and posterosuperior canal wall, leaving the mastoid antrum and attic open into the meatus. The canal will then have an enlargement in the inner end. 9. Chronic interstitial otitis, otosclerosis, and rarefying osteitis of the labyrinth capsule are often found after the cessation of suppuration of the middle ear. They are excited by the suppurative inflammation, and the final results are brought about by the diminished blood supply following cicatricial fibrous contraction. Functional defects resulting from middle ear suppuration are deafness, tinnitus, and unstable equilibrium. Deafness and tinnitus are due to pathological changes of the middle ear and cochlea. Disturbed equilibrium is due to injury to the vestibule and semicircular canals, and tension anomalies of the tympanum. The results following convalescence from the extratympanic complications of middle ear suppuration vary with the part affected and the amount of destruction of tissue substances.

Treatment of acute cases requires drainage via the tuba auditiva and through the meatus externus. The first is accomplished by appropriate nasal treatment. The latter is assured by free incision of the tympanic membrane, making a U shaped cut three fourths of the way around the membrane from its upper posterior attachment. After the tympanic drainage is established a cleansing treatment should be employed. If there is much swelling, hot douching every hour with a mild antiseptic solution, such as a saturated solution of boric acid, lessens the swelling and helps the drainage. If there is no swelling, dry cleansing treatment is the best. This consists in wiping out the meatus four times daily and insufflating powdered boric acid. The interval of treatment is gradually increased as the suppuration decreases.

As in acute suppuration, so also in chronic middle ear suppuration drainage is the first point to be looked after. The nasopharynx must be made to allow the tuba auditiva to drain the middle ear. Meatal drainage must also be provided by extensive section of the drum membrane and cicatrices. Next in importance after drainage is the cleansing treatment for the removal of the products of inflammation, pus, epithelium, crusts, etc. Dry wiping is the best means of accomplishing this end, but often the wiping has to be supplemented by intratympanic syringing. Third and last in importance for suc-

cessful treatment are the antiseptic procedures. The best antiseptic is boric acid. Sometimes this has to be assisted for a time by other reagents. Alcohol, hydrogen peroxide, iodoform, pyoctanin, bichloride of mercury, chromic acid, silver nitrate, picric acid, carbolic acid, etc., all have a place in occasional cases. Dry wiping is always preferable to meatal syringing, and should be employed except when there is swelling or extremely abundant discharge. It should be followed by wiping. Perseverance and thoroughness in treatment are sure to be crowned with success. However, it must always be borne in mind that too long persistence in treatment will prolong the discharge when cessation of treatment will arrest the discharge. Allow the ear to heal if it can. Sometimes an acute process is grafted upon a chronic. This combination forms a most dangerous condition, and requires to be carefully guarded against serious complications. The treatment under these circumstances is a judicious combination of the treatment for the acute and chronic middle ear suppuration.

Treatment of intratympanic complications of middle ear suppuration has to deal with: I. Cholesteatoma of the tympanum. A large opening in . the tympanic membrane should be provided, and the cholesteatoma removed by forceps, by wiping, or by intratympanic syringing. After this treatment instillation of alcohol should be continued until serous discharge and desquamations of epithelium have ceased. These patients should be made to report for occasional inspection, because the cholesteatoma is very likely to recur, and if neglected will give rise to extremely serious complications. 2. Intratympanic caries is rarely extensive enough to require more than cleansing treatment for it to heal. If ossicles are dislocated they should be removed. 3. Polypi often recur in the course of middle ear suppuration. They are of little moment except that their size and position may block drainage. If the polypi are very large they can be snared off or morcelled with forceps. If the polypi are small it is wise to leave them in position and treat them by instillation of absolute alcohol till they shrivel up and harden. 4. After the cessation of suppuration, the repair of the sound transmitting mechanism of the middle ear is of great importance for the improvement of hearing and cessation of tinnitus due to middle ear lesions. Closure of the perforations in the drum membrane is a safeguard against future tympanic infection from the meatus. Paper dressings are the best means of stimulating cicatrization of perforations in the drum membrane. Very large perforations may be stimulated to close by touching their edges with trichlor acetic acid or other irritants. When there is a defect in the ossicular chain the loss may be partly compensated for by applying cotton tacks in the neighborhood of the promontory

Treatment of the extratympanic complications of middle ear suppuration for the most part demands capital operations. Space will allow us only to name the treatment of these complications. Extensive cholesteatoma and extensive bone caries and sequestre require some form of mastoid operation for their removal. Mastoiditis, if it has gone past the

congestive stage, requires a complete mastoid operation, which includes the evacuation of every cell and ablation of the mastoid process. Osteomyelitis requires a complete mastoid operation, and, in addition, the removal of all diseased bone wherever it can be found. Perimastoid cellulitis, if the cause is from within, is treated by incision followed by a complete mastoid operation. Subperiosteal abscess requires free incision for evacuation of the pus and a complete mastoid operation. purating sinuses require a complete mastoid operation and removal of the suppurative tracts. Deep cervical cellulitis requires a complete mastoid operation and counter drainage in Suppurative labyrinthitis requires a the neck. Schwartze-Stacke radical mastoid operation and labyrinthotomy. Pachymeningitis, epidural abscess, and perisinuous abscess require a complete mastoid operation and exposure of the diseased dura mater. Sinus phlebitis without thrombosis requires exposure of the diseased dura covering the sinus. If there is thrombosis, incision of the sinus and evacuation of the thrombus is indicated. If the thrombosis extends to the jugular bulb, the jugular vein should be exposed and ligatured well beyond the limits of the phlebitis, and then incised or excised. Gangrene of the meninges and neighboring tissues requires free exposure of the diseased area and wet dressing, preferably with aluminum and lead acetate. Cerebral and cerebellar abscesses require free incision for drainage and sufficient exposure of the dura mater covering them. Serous meningitis with signs of cerebral and cerebellar compression requires a decompression operation, incision of the dura, and drainage of the arachnoid, aided by lumbar puncture if there is cerebellar compression. Purulent leptomeningitis requires complete drainage through extensive incision of the dura mater. Encephalitis requires multiple incision and drainage. Metastatic suppuration and pulmonary emboli require the appropriate treatment for these conditions in addition to the appropriate local treatment for the ear affection. General sepsis is treated by removal of the local cause, by flushing the intestines and kidneys with Lock's physiological salt solution, and saline catharsis. Bacteriæmia is too rapidly fatal for any benefit to be derived from antibacterial vaccination. The only hope, a very small one, is in removal of the local focus of infection.

The indication for section of the drum membrane is the presence of pus. The indications for mastoid operation in acute and subacute otitis media purulenta are extratympanic extensions, persisting a time after tympanic drainage has been established. The indications for operation in otitis media purulenta chronica are extratympanic extensions of inflammation or other complications. In all complicated cases operative treatment gives quicker and better results than the expectant treatment.

Treatment for improvement of the defects remaining after tympanic suppuration has ceased is important enough to receive special mention. Cosmetic effect sometimes requires the closure of a postaural fistula. Perforation of the drum membrane needs reparative help as previously mentioned. Loss of parts of the sound conducting

mechanism needs mechanical substitutes. Most important is the post convalescent care of suppurative ears. If the drum membrane is closed there is little to do. If a small perforation persists, an occasional inspection is needed to see that the drum cavity remains clear and clean. If there is a large perforation, the patient must be kept under observation at increasing intervals until the lining of the tympanum is white, glistening, and free from the suspicion of crust formations or epithelial accumulations. Otherwise a recurrence of suppuration may be looked for at any time. If there is a tendency for cholesteatomatous formations, the patient must be kept under observation until this tendency has been successfully overcome.

If the case is treated from the start, the prognosis is very favorable for middle ear suppuration and its complications. If the infection is allowed to spread, the prognosis becomes worse with the extension and vital importance of the structures involved, with the virulence of the infection, and with

the inefficiency of the opsonic resistance.

The distinctive blood count is of no practical value, since the general and local clinical findings give much more definite and accurate data on the cause of the case, determine the prognosis, and

furnish the indications for operation.

The bacterial findings are of some use, because the course of the infection is slightly different with the various organisms; for instance, with streptococcus encapsulatus infection the course is apt to be a rapid extension-of the bone involvement with very slight general symptoms. It is noteworthy that with this infection the patient is usually unaccountably free from pain and tenderness.

ILLUSTRATIVE CASES.1

Case I.—A woman, thirty-two years old. Double acute middle ear inflammation of three days' standing, following a cold of two weeks' duration. Mouth temperature, 100° F. Both mastoid tips and antra tender. Double extensive myringotomy, seropurulent discharge. Boric acid solution douching. Intranasal astringents, aromatics, adrenalin. In five days the discharge had ceased in both ears. Perforations closed in fifteen days, and all was healed. Hearing, twenty-five inches for the watch in both ears. Hearing is now normal.

Case II.—A man, aged twenty-seven years. Otorrhœa, five weeks; perforation of posterior, inferior quadrant of the tympanic membrane. Tenderness on pressure over mastoid antrum. Heard watch at thirteen inches. After three days of cleansing treatment, the perforation in the membrane closed. Four months later the watch was heard

at a distance of fifteen feet.

Case III.—A woman, aged fifty-one years. Feetid otor-rhea, fifty years' standing. Had received much treatment at the hands of various specialists. The incus, drum mem-brane, and most of the malleus had sloughed away. Cleansing treatment was used and in two days the ear was healed and has remained so; hearing much improved.

Case IV.—A man, thirty-two years old. Middle ear suppuration for five years; perforation of Shrapnell's membrane filled with granulations; caries of neck of the malleus. After two months of cleansing treatment, suppuration ceased and the middle ear was completely healed. Hearing for Politzer's acoumeter had increased from five feet to thirty-five feet. The ear has remained healed.

Case V.—A man, seventy-seven years old. Otorrhoea of

short duration, mastoiditis, extensive osteomyelitis. Practically no hearing in the ear. Extensive complete mastoid operation. The knee of the sinus and the dura mater of the middle fossa were uncovered. On the fourth day of convalescence the mastoid wound was closed by first intention. Complete tympanic and mastoid healing without suppuration in thirty-nine days. On the fifty-first day watch operated on. Postaural scar scarcely perceptible.

operated on. Postaural scar scarcety perceptions.

Case VI.—A youth, seventeen years old. Chronic middle ear suppuration of several years' duration. An acute ostitis present. Hearing almost nil. Mastoidotympanotomy, on my modified radical mastoid operation, was performed. The ear and posterior wound were wholly healed by the seventh day and hearing became normal. The postaural scar was scarcely discernible on the eighteenth day. There

has been no recurrence.

CASE VII.—A girl, sixteen years old. Chronic purulent otorrhea for three years. Pain in ear, two weeks, headache and dizziness. Schwartze-Stacke radical mastoid operation performed. Mastoid wound healed by first intention. The

performed. Massioid wound neated by first intention. The enlarged middle ear and meatus were solidly healed and completely epidermatized on the twenty-first day. Postaural scar scarcely perceptible and surface smooth. Case VIII.—A girl, sixteen years old. Acuté purulent otitis media for several weeks; hearing very poor. Persistent massioid tenderness. Operation: Very extensive osteomyelitis and large epidural and perisinuous abscess. Dura mater uncovered over a large area in both fosse. Dhra mater introvered see a large area in tour to the middle and the first intention on the fifth day, and the middle ear dry. On the thirty-first day, the watch was heard at five feet. Scarcely perceptible linear,

postaural scar, and smooth surface.

Case IX.—A girl, five years old. Chronic middle ear suppuration, acute mastoiditis, osteomyelitis, epidural abscess, sinus and jugular thrombosis, gangrene of adjacent meninges, cerebral and cerebellar abscess and encephalitis. As much of the diseased tissue was removed as the pre-As much of the diseased tissue was removed as the pre-carious condition of the patient would allow. Jugular vein was full of pus and was excised. Neck and postaural wound completely healed and epidermatized on the fifty-second day. Tympanum healed on the one hundred and forty-sixth day, but the tympanic membrane did not grow again. Watch heard at four inches. Scars scarcely perceptible.

CASE X .- A girl, thirteen years old. Chronic middle ear catarrh with intercurrent acute middle ear suppuration and mastoiditis. Complete mastoid operation. Before the acute attack the watch was heard at twenty-five inches; during the suppuration the hearing was almost nil; after convalescence from the mastoid operation the hearing was twelve feet for the watch, much better than before the operation. Linear postaural scar barely perceptible.

Summary.-With early treatment, prognosis indicates arrest of suppuration, restoration of hearing, and preservation of life. A cessation of the suppuration, and an improvement in hearing is assured, except in the rare, fulminating cases where a fatal issue may be expected. By treatment commenced before the loss of important structures, the hearing may be restored to normal. Fatal results are avoided by early treatment.

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Mastoideotympanotomy: The Operation of Election for Persistent Otorrhea and Acute Mastoideotympanic Otitis.

NEUROMUSCULAR COORDINATIONS HAVING EDUCATIONAL VALUE.

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This paper does not treat of the entire subject of muscular exercise. It aims only at one of the specific objects of exercise. In order to define the subject it may be well to state the four headings under which we are accustomed to classify the major objects for which muscular exercise is taken,

(1) Medical education. Under this heading come orthopædic exercises, exercises to develop cardiac power, the reeducation and development of a paralyzed member or of a tabetic, etc.

(2) Organic or hygienic education, the general purpose being to increase the general functions of the body, such as circulation, respiration, digestion. This is ordinarily spoken of as "general exercise."

(3) General neuromuscular education. This consists of the bringing to complete function those general neuromuscular coordinations that are desirable for the individual to possess.

(4) Special neuromuscular education, which may be needed for some specific activity or occupation, such as playing the piano, typewriting, playing bil-

liards, handwriting.

This classification does not include those forms of exercise that are taken incidentally in the earning of one's daily bread or in the pursuit of happiness.

This paper relates, then, exclusively to the third heading, namely, general neuromuscular education. It aims specifically to answer the following question: Are there any neuromuscular coordinations which exceed in value from the pedagogical standpoint any other coordinations? Or, to state the question in a different way, have neuromuscular coordinations an equal value from the educational standpoint? If they have not equal value, which coordinations are the most important, and what are the criteria by which we can select the coordinations that are the most important?

I am not referring to that training by which the individual is equipped for specific acts that may be necessary during later life, such as playing the violin, writing, using tools, or any specific acts whatever. I am referring to a general basis of educa-

It is only in recent years that students have given us the neurological data which support the findings of experience in our answer to this question. One of the best studies is the brilliant one of Hughlings Jackson, with his three level theory of epilepsy in its relation to cord and brain. Frederick Burke, in his notable study entitled From Fundamental to Accessory in the Development of the Nervous System and of Movements, formulated and defended with brilliancy one of the essential theses, namely, that in the development of the human being the different parts of the nervous system come to function in a more or less definite sequence, those of a more fundamental character antedating those of a more accessory character. We must not forget the

brilliant work of Clouston on the Neuroses of

Before attempting to answer the question it may be advantageous to illustrate in a concrete way the

nature of the problems involved.

It is conceivable that an individual might be trained to operate the muscles which control the eyes independently. Would such specialized discipline be of advantage or disadvantage to the individual? It is possible, by some means of suitably prepared gymnastic exercises, to train the individual so that he can coordinate movements which to the untrained are entirely impossible, for example, to move the arms in opposite circles. I may move my right arm at the shoulder joint, involving, of course, scapula movements through various right angled positions. It is an exceedingly simple matter to have the left arm do these movements at the same time and in the same way as they are done by the right arm. It is possible to train the individual so that the identical movements shall be involved, but one arm with a movement behind the other, the completed series being finished by the leading arm one count or one movement ahead. The children's trick of patting the abdomen and rubbing the top of the head, and then attempting to change the movements of each hand suddenly, so that the hand that was patting commences to rub and the hand that was rubbing begins to pat, illustrates another exceedingly simple coordination which it is difficult for the person who has not learned it to do.

Some years ago a large volume was written, describing a new system of gymnastics by De Laspe, the fundamental assumption of which was that it was simpler to move one joint than to move two. Therefore, every child should be trained to use each joint of the body in all ways possible. He should then begin to use each joint of the body in all possible combinations with every other single joint of the body. After these two joint coordinations in all possible relations had been accomplished, he should then proceed to train his neuromuscular apparatus so that three joints might be used at once in all possible relations to each other. This process was to be kept up until the individual could do anything with his body of which it was capable. A few illustrations are given at the back part of the large work, showing the kind of movement that would be involved by the pure chance combinations or permutations of movements involved in seventeen joints at once. They remind one slightly of an individual during an epileptic seizure, that is, the movements were absolutely unrelated to each other.

In the light of this book, I would restate the question as follows: Are there any neuromuscular coordinations which tend more strongly than do any other neuromuscular coordinations toward a wholesome development not only of body control, but of the central organ of body control—the nervous system? Are there movements that serve better than others to bring about that growth of tangential fibres which Flechsig has shown to be related to intelligence, and to that relation of dendrite to axon and synapses that promote or afford the basis for wholesome living?

An analysis of the muscular movements made by

a child immediately after birth indicates definite and useful coordinations already functioning with a considerable degree of perfection. Breathing is suddenly established. This in itself is an exceedingly complex act, involving constant readjustment with the different positions of the body, the relations of the spine to the ribs, and the ribs to the abdominal wall, which vary with the changes in abdominal pressure which are due to gravity. Breathing in the horizontal, prone position is not an identical act with breathing in the vertical position. In any position it is a most highly complex series of acts. We find this neuromuscular mechanism ready to use upon the birth of the child.

The hand, actuated as it is by forty muscles, moving twenty-seven joints, functions vigorously as a whole; and since Robinson called our attention to the fact, I presume that all of us have demonstrated for ourselves the high degree of grasping ability that is present in the hand of the newborn child. Sucking and swallowing are acts involving coordinations of muscular groups that are not closely re-

lated anatomically.

The child lies on his back and kicks, breathes, and cries. All of this means that there are thousands of neuromuscular coordinations all ready to use. The coordinations involving the use of the eyes are not perfect at birth, but it takes a relatively small degree of practice—I do not, of course, refer to conscious practice—to develop that control which results in the coordinated action of the eyes. Eye movements as related to neck movements are quickly acquired. The muscles controlling individual vertebrae are never isolated so as to be actuated by the individual, but they can be used serially, as shown by many individuals who have acquired the power to bend in any part of the spine without bending any other part, or to bend with a wavelike motion, the centre of motion extending from one end of the spine to the other.

Standing erect involves most delicate and constant adjustment of nearly all the muscles of the legs, trunk, and neck. While in this position, the movement of one arm forward makes it necessary for the individual to readjust his balance, thereby compelling readjustment of tension from all the groups of muscles involved. In running, jumping, throwing, striking, and in all of the large body activities, practically all the muscles function. They function rather automatically, not as automatically as does the heart nor as automatically as the process of breathing, but they function automatically in the sense that the individual does not think of the muscle, of the part to be used, but thinks of the object to be accomplished. It is a physiological unit which is working.

An examination of the great variety of neuromuscular coordinations that children learn in their ordinary, unguided daily play indicates that the fundamental fact with reference to the progressive coordination of these successive sets of movements is physiological and not anatomical. The body is serving its function with reference to accomplishing given results. This is done by throwing into action successively coordinations which are more or less automatic. Those acts which are "ready to use" that are done at birth are performed without anything more than the preliminary movements made by the child during gestation. They require, some of them, no practice; others, very little. The older the child becomes, the more complete the repertoire of coordinations becomes, the less are the coordinations ready to use, and hence the more is practice necessary. If we view the body as a functional unit it simplifies the case.

That study of anatomy which consists of merely a knowledge of the different systems is superficial and unreal as compared with that knowledge of anatomy which sees muscles, ligaments, and bones as having been developed by having to do specific acts. The act is the fundamental thing which determines the structure rather than the reverse. It is because the hand had to bring the object to the mouth of the individual, for example, that we may account for the insertion of the biceps on the radius rather than on the ulna. Insertion on the ulna would have given the biceps a far greater power as a flexor of the forearm, but one of the particular acts for which the biceps is adapted and which, perhaps, we may assume was one of the acts which helped to produce it, was that act by which the individual reached for an object with the hand prone and grasped it, then bringing it to the mouth, supinated the hand, in order that the palm might bring its contents to the mouth. So the biceps was attached in such a way as to flex the forearm upon the upper arm, at the same time that it was acting as a supinator.

This very clumsy illustration of the priority of use is one that I should carry over into the neurological field, did the space limits of a paper permit.

Let us turn now from muscular acts for physical ends to those muscular coordinations which are done for psychic purposes—the expression of anger, fear, hope, and so on. These demand complexity of coordination following and flowing into each other, never being twice exactly alike, for the conditions which arouse the emotions vary, and the expressive acts of the emotion itself vary correspondingly. A set of such incomprehensibly complex series of coordinations as is involved in the muscles of the face, those of the throat, of the hands, of the back, demands the genius of art to portray-coordinations involving not merely the neuromuscular, but the neuroglandular, involving the intestinal tract, as Mosso has shown, the bladder, and probably all the organs of the body. The whole body expresses the emetion. It is a unitary physiological act, rather than one which is built up by the laborious construction of adding one joint movement to another.

Most of the activities of modern life are built up of those neuromuscular coordinations which have in former times been useful to the race, that is, by great biological units. Even in such technical accomplishments as playing the piano or the violin, using the typewriter, riding a bicycle, and using the scalpel, we are using racially old movements almost entirely. That which is purely new constitutes but an incidental part, although, of course, a necessary part of the total act. Even here the combination is one of physiological units or wholes, rather than of

that are done at birth are performed without anything more than the preliminary movements made by the child during gestation. They require, some individual muscles or individual joints; that is, it is a physiological association as contrasted with an anatomical association of muscular activities.

Turning now to the functioning of the body with reference to psychic states, the feelings which actuate us to-day differ in their objects to some extent from those which actuated us during the prehistoric days of man's life; but we cannot conceive of the fundamental psychic or emotional states as having changed. The study of the stock market is a new thing to think about or to feel about, but it is with the same old emotions of love, hate, fear, ambition, desire, in wonderfully complex ways, that we get the modern phenomenon; that is, here again we are using certain fundamental, unitary acts as contrasted with incidental or isolated mental faculties. The emotions themselves are fundamentally old, even though their application be to new things.

The way in which these emotions take their form in the body is also unchanged, and is the same among all the peoples of all the earth. We speak of thinking and willing, old complex acts—remaining essentially the same, even though we apply them to new things. Thinking in so far as it is motor is associated with the rehearsal of those muscular acts thought of. These are at bottom racially old neuromuscular coordinations. For example, even in such a complex matter as viewing a landscape we form our judgment of distance by eye movements.

I might go on and show how the reconstruction of our conception of the education of the body from one of associating anatomical groups to viewing it as a physiological whole is at present reconstructing psychology. It is but recently that we have ceased to hear of a faculty of attention, a faculty of memory, of will, and the like; whereas we now know that there are as many different kinds of attention as there are different kinds of things to give attention to, and that there are as many different kinds of memory as there are different kinds of things to remember. With this crumbling of the faculty psychology there has fallen that theory of education which has aimed to train each faculty by itself and then adjust it to the other faculties. This is precisely the fate of that conception of physical education which aimed to train each muscle or joint and then coordinate it with the others.

Thus we find a violent contrast between that which is logical and that which is pedagogical. It is logical to build up muscular movements, but we find it to be against the whole tendency of children. We find that normal children learn the successive acts involved in plays and games with ease, that feeble minded children may be measured in their feeble mindedness pretty accurately by the extent to which they have learned those neuromuscular coordinations that have been common to our kind. We cannot think of man becoming fundamentally different with reference to the relation of structure and function than he is now. He will continue to live a life of love, of hope, of fear, of desire, as he is living now; and he will express these old emotions in ways which are intelligible now. Therefore, for the child to learn his plays and games, his running, jumping, striking-all that play which involves skill of hand, coordination of eve and hand-

is fundamental with reference to his psychic activity, for he functions as a whole. It may be true that the time will come when man may no longer need to run or even to walk, but we cannot conceive of a time coming when the adult man will not need to have learned to walk when he was at the proper age, because of the bearings of this upon his neuromuscular system. His failing to learn to walk might be to his nervous development somewhat as the cutting off of a tadpole's tail is to its subsequent development, or better, the omission of the gillslits in the human embryo. Adult man has no use for gillslits, but if the gillslits were lacking in the embryo, the blood circulation in man could not have developed in its present form.

Thus we see that not merely general neuromuscular coordinations should be taught to children, but specific ones, highly complex ones, racially old ones. To do the opposite tends towards the breaking down of the structure that has been built up through all the ages. To train the eyes to move independently would be to move away from sanity and wholesomeness. It would tend to break up that coordination of impressions and the unity of that

act which we regard as visual thinking.

These coordinations are historically old. They are the kind of movements that have meant success. They are the kind of movements because of which our forefathers survived. The man who could run and jump and throw was better fitted to survive than the man who could not do these things with an equal degree of skill. Upon this basis the whole emotional and intellectual life is built. This accounts to some extent for the fact that the kinds of coordinations of which I have spoken-athletic sports, plays, and games-are interesting to children as formal gymnastics are not interesting.

Thus, true physical education is not to be accomplished by the teaching of segregated muscular movements, but by the orderly development of increasingly complex movements which are racially old, which involve good posture of the body, which train the individual to express predominantly emo-tions consistent with modern life. These movements are to be expressed in terms of physiological acts to be accomplished, certain wholes, rather than

as anatomical parts to be moved.

I have tried to show:

I, The unitary character of our neuromuscular as well as other acts:

2, that they exist in racially old combinations: 3, that we inherit these coordinations, or at least

a strong tendency toward them;

4, that mental, moral, ethical, social life is built on these

We should therefore in our physical instruction educate:

I, In physiological units;

2. Toward racially old and inherited tendencies. This paper is already so long that I can but suggest what should be discussed under the general

heading of the nature of the curriculum through which the child should be led.

This consists first of the unguided plays of babyhood. During this period no instruction is necessary. Opportunity for free activity, rolling, kicking, and the like, is enough. The impulse within the child will lead him to perfect such mechanisms as are then developing. Following these come the games and sports of childhood. Here the child needs help. In old communities, suitable games are passed on from generation to generation of child life without adult aid; but in a country like ours, particularly in our great cities, made up largely of peoples from different countries, different villages, these play traditions are lost. They need to be restored to children by skilful teaching; not by formal instruction, but by that informal leadership which the well equipped adult can give.

The old rhythmical movements which have been found among all the primitive peoples and in all civilizations have crystallized in the dance. These folk dances express in extraordinarily complete form man's history-the sowing of grain in the spring, the reaping in the fall, the chase. In fact, all of man's life has been portrayed and crystallized in these art forms, which we in America have allowed to die. They must be resurrected and given again to the children as part of their birthright, as a fundamental. part of their education—not merely muscular education, but emotional education, for in these great plays and games of the world it is the whole individual that is called into activity. In this fact lies their extraordinary interest and value.

It is true that because of the school desk with its deforming tendencies we need to have special exercises that shall tend to overcome these deforming effects; but aside from this, the general curriculum of neuromuscular activities involved in physical education should be that based upon the physiological unit type found in the plays, dances, and games referred to.

500 PARK AVENUE.

ARTIFICIAL HYPER. EMIA AND ITS THERAPEU-TIC APPLICATION (AFTER BIER).

By Algernon Brashear Jackson, M. D., Philadelphia.

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Although more than fifteen years have elapsed since Professor August Bier began to treat tuberculous lesions by artificial hyperæmia, it has been but recently that the procedure has been generally accepted as a rational method of treatment by the physicians of this country. Now that this form of treatment has proved so successful in the hands of judicious operators, the wonder is, that in view of our comprehensive knowledge of physiology, the method has remained so long unrecognized and un-

Long has it been known and observed that all organs of the body functionate only in the presence of hyperæmia. Further, it has been noted that the invasion of any foreign substance or body is attended by an increased hyperæmia to the part affected. To Bier this process of Nature was a lesson, and he has simply aided natural forces to

hasten the curative effect already begun.

To be an intelligent adjuvant to Nature in the therapeutic application of hyperæmia, one must recognize the physical and chemical differences between the rapidly flowing arterial blood and the sluggish venous stream. As yet our knowledge of the subject is limited. A failure to recognize the sort of hyperæmia at which Nature is striving may produce more harm than good, in the employment of artificial hyperæmia. But since a knowledge of the component parts of the blood and their action is always hanging on the ragged edge of doubt, Bier prefers to apply hyperæmic treatment as hyperæmia per se.

Hyperæmia has been divided into active and passive, which may be interpreted to mean arterial and venous. Active or arterial hyperæmia is that form in which there is an increased flow of arterial blood to the part while more blood flows in. Passive or venous hyperæmia is that form in which more blood is held within the part by a diminished outflow of venous blood, which is also referred to as stasis hyperæmia. However, this classification but aims at the truth, for many times it is difficult to say whether the hyperæmia is active passive, or mixed.

It shall be the aim of this article to briefly discuss the methods of producing artificial hyperæmia, its effect upon the parts treated, and more particularly to deal with the therapeutic application of the same by citation to cases treated by the author both in private practice and hospitals.

Production of Artificial Hyperæmia.

Certainly the oldest and best known method of producing local active hyperamia is by the application of heat. For thousands of years physicians have treated localized inflammation after this manner without knowing that the good effects derived were brought about by the production of a localized active hyperamia; the accelerated blood stream to the part acting as a cooling agent upon the inflammation. This heat is applied in various ways, such as hot water bags, hot compresses, hot mud, sand, poultices, and hot air. The last named agent is much employed because of the vast amount of heat that can be borne when administered in this form.

The form of hyperæmia that has most interested me for some time past is the passive variety produced by the stasis bandage. "Bier's stasis" is a familiar term employed by surgeons in referring to hyperæmic treatment for ununited fractures. But Professor Bier declines the honor of originating this method, and makes the following very interesting statement which I take the liberty to quote. "It seems that the first to have hit upon the idea to make use of artificial stasis hyperæmia in insufficient callous formation was Ambroise Paré. In the thirtieth chapter of the thirteenth book of his works he at first recites the remedies for the reduction of callus when too large. These consist in diminishing, dividing, and astringent substances, and he thus continues. 'If however, the callus is too small and undeveloped in consequence of the bandage being too tight, or because the limb has been too long at rest without exercise, or the nutrition of the patient was insufficient, the bandage has to be taken off and entirely removed from the fracture. Instead a different kind of bandage should be applied beginning at the root of the vessels, if on the leg close to the inguinal region, if on the arm near the shoulder, and reaching nearly to the seat of the For by this remedy the blood is squeezed and and compelled to those to the injured place."

The above quotation is made merely to show how long ago this useful method of treatment was employed, then forgotten, and now revived and placed upon a logical and scientific basis.

In the production of passive hyperæmia by the stasis bandage there must be an understanding in the mind of the operator as to the result desired, and how it may be obtained. The rubber bandage is applied above the part to be treated by making several circular turns so as to compress the walls of the veins but not those of the arteries. I always make it a practice to find a pulse below the bandage and am never satisfied until I do. The changes noted (upon the arm and hand, let us say) when the bandage is lightly applied are at first a swelling of the veins, a bluish discoloration of the arm, palm of the hand bright red, in which can be observed minute white spots. These changes are noted during the first hour. After the third or fourth hour the hyperæmia becomes more marked, and a mild cedema presents itself, which can be proved by strong pressure of the finger upon the part. The longer the bandage is applied, the more marked becomes the cedema. The mild application of the stasis bandage with the results outlined above may remain from ten to twenty hours without producing any inconvenience to the patient.

A vigorous hyperæmia may be produced in a very short time by a firm application of the bandage, but this is dangerous because it leads to cold stasis, and, I believe, should never be employed. For the production of stasis hyperæmia a broad rubber bandage should be used, and not small rubber tubes that cut into the skin and are always applied with a degree of uncertainty as to the amount of pressure produced. When I wish to congest a finger I always apply the bandage above the wrist, thereby congesting the entire hand, because a small cutting rubber tube about the finger or toe misses the mark ninety-nine times out of a hundred. If continuous daily application of the bandage is desired it is advisable to change its location from time to time in order not to injure the tissues by compression.

Another method of producing hyperæmia is by suction apparatus. As early as 1834, Junod described such an apparatus known as "Junod's boot." A short description of the same may be interesting. Imagine four glass or copper cylinders, so shaped as to fit the four extremities, to which are attached at each end a broad rubber ring, which is bound tightly about the limb, so as to make the receptacle airtight. An exhaust pump is attached to the cylinder, and by this means the air upon the inside is thinned. Enough of this. One has but to observe the various forms of suction apparatus at the instrument stores to see how Bier has taken this idea as a guide for the modern application of the same treatment. It is difficult to say which sort of hyperæmia is produced by suction, but most all who have given the matter study agree that both active and passive are brought into play.

Hyperæmia produced by "derivantia" and "revulsivia" are among the oldest relics of medicine. I simply mention these methods in passing. I hope it may stimulate study, for back of the production of hyperæmia there is always a principle which must be considered if a favorable result is to be had

The Effects of Hyperamia.

It would seem useless in an article such as this to enter into a full and complete discussion of the effects of hyperæmia. The therapeutic value of this method of treatment, with an incidental discussion as to the effects produced in cases cited, will, I believe, serve a better purpose. However the temptation is great and in a measure I must yield to it.

The most immediate effect of hyperæmia is the reduction of pain. This statement in itself seems a contradiction to the older teaching, that blood stasis always produced pain. True, pain is always present where blood stasis is the result of foreign insult, not however because of the blood stasis per se, but on account of injury to neighboring cells and nerve endings. Rather does blood stasis in the part aim to bring relief to the injury. The analgesic effect of hyperæmia is a prominent factor in the treatment of acute and chronic rheumatism, with its painful stiff joints, gonorrhoeal arthritis, and arthritis deformans. I say it is an important factor in their treatment, first because it relieves pain, and secondly by so doing restores mobility to the stiffened joints. In these cases, however, the hyperæmia must be prolonged and continuous. The pain caused by traumatism, fractures, leg ulcers, frost bite, acute or chronic infection, and such pathological conditions is relieved by hyperæmia. I have not yet met with a case in which stasis hyperæmia was indicated and properly applied, that has not been relieved of pain by its application. The application of a stasis bandage should never increase pain. If it does increase pain it is the result of faulty technique on the part of the operator.

When one observes how successfully acute infectious diseases are treated by stasis hyperæmia, the question naturally arises as to the cause of the good results obtained. There must certainly be some force or forces brought about by hyperæmia which act directly or indirectly antagonizing bacterial invasion. Several theories have been advanced, but as yet they are all uncertain. Experiments have shown that pyogenic bacteria are rendered less active and in some instances practically inert by prolonged hyperæmia. Investigators differ as to the cause. Some cling to the theory of phagocytosis brought about by an increased number of leucocytes to the infected part. Others assert that the carbonic acid gas which is held by the venous blood is the bactericidal agent. Certainly it is passive rather than active hyperæmia that shows the most pronounced effect upon invading organisms.

In view of the fact of the various theories I have seen propounded, I have often wondered why the theory of the opsonins has found no place in this discussion; however I may have overlooked such literature. In passive hyperæmia the venous blood is confined to the area of infection by the stasis bandage, and more blood laden with leucocytes is flowing to the part, hence there is an increased localized phagocytic action due to artificial stasis. If according to Wright's theory that this power of leucocytes to incorporate and destroy bacteria depends upon elements in the blood known as opsonins, then it seems reasonable to say that the more leucocytes present the greater the opsonic power. This power is necessarily increased when the leuco-

cytes are held at the seat of infection, while at the same time more are flowing to the infected area. Therefore to me it seems probable that there is a localized increase of the "opsonic index" brought about by physical means (the stasis bandage) which confines the leucocytes and renders their phagocytic action more pronounced because their quantity is increased. As yet, however, the bactericidal effect of hyperæmia is in a great measure theoretical, but the results are positive in the treatment of acute infectious diseases.

Both active and passive hyperæmia act as solvents, while active hyperæmia acts as an absorbent. The nutritive value of tissues is increased by active arterial hyperæmia. The author will endeavor to show these various effects by cases which have come under his care.

Therapeutics of Hyperæmia.

My first experience in the employment of hypermia was in the treatment of localized infections by the stasis bandage. The first results were discouraging, and I was about to regard the method as a fad, and not of real therapeutic importance, when suddenly I awoke to the fact that the fault lay within myself and not the method. In some instances I increased pain, and in others I created pain where there was little or none before. The cause of this was a too tight application of the stasis bandage. It requires experience to regulate the pressure in such cases, and after deftness is acquired, the pain is always lessened and the results are more encouraging.

I shall cite one case which serves as a type of my first errors in technique:

Case I.—A young lady came into my office with an infection of the middle finger, around the nail, which was slightly painful. A rubber tube was tied rather tightly above the area of infection. The pain began to increase in a few minutes. I bade her to be quiet for a while and the pain would soon disappear. Instead it grew worse. For an hour she waited in my office and the pain became intolerable. The finger was blue and cold, so I removed the tube, applied a wet dressing, and referred the patient to next day for treatment. Upon the second visit the condition was worse; tube was applied again, but not so tightly as the day before, however, with the same painful results. At that time an incision was made, blood flowed, but no pus; wet dressing was again applied, and tube abandoned. Next dressing showed the presence of pus, which was treated by irrigation, drainage, and wet dressing with good results.

Several, in fact many, such discouraging results made me have little respect for the value of artificial hyperæmia.

I will next cite a case to show how well hyperæmia acts when proper technique is employed.

Case II.—A young man with infected thumb came to the surgical clinic at the Polyclinic Hospital. I applied lightly a stasis bandage above the wrist, and the pain was relieved almost at once. Three hours afterward I saw him at my office. The entire hand was slightly hyperemic, but still free from pain. The bandage was removed for about one half hour; pain began in fifteen minutes. The bandage was again applied and twelve hours later I saw the patient with no pain and a marked hyperemia of the hand. For three days the infection was treated by ten hour stasis and two hours rest for two periods of the day, and at the end of that time there was no pain or swelling; still neither had incision been made nor wet dressing applied.

The purpose in referring to these two cases is at once apparent. In the first case my technique was

wrong, and in the second it was evidently correct. It took a number of unsatisfactory results to put me upon the right trail. The three most important lessons to me are: (1) Do not apply bandage too tightly. (2) Use a broad rubber bandage and not a small cutting tube. (3) Apply bandage high above the seat of infection, thereby congesting a greater area than that invaded by the disease. I have treated many such infections in this way, and ofttimes have found it necessary to make incision to evacuate the pus, and have applied wet bichloride dressing, but so quickly has the condition cleared up, that I am convinced that the passive hyperæmia did a great good.

At Mercy Hospital I treated a case of tuberculous cervical adentits by suction alone. The application was daily for four weeks, but the result was positive and I have not heard of any recurrence. Another such case was admitted to the wards of Mercy Hospital, which had been incised elsewhere. The wound was left open, suction was applied daily which drew from the wound quantities of blood, pus and broken down gland tissue. In three days the swelling began to disappear. In two weeks the wound had healed with slight scar and no evidence of tumefaction which so frequently accompanies such conditions when treated by other means.

Many cases of acute and chronic arthritis I have treated with the stasis bandage with good results. At first the pain is relieved and motion restored by the solvent effect of the hyperæmia. I have had no experience with hot air apparatus, because in neither hospital nor private practice have I the facilities for applying this method for the production of active hyperæmia. Certainly in cases of acute or chronic arthritis, active hyperæmia should be employed for its absorbitive effect for short periods, after a prolonged application of passive hyperæmia by the stasis bandage. In arthritis I have been accustomed to apply stasis bandage for twelve to eighteen hours daily with an intervening period of rest. The bandage is always applied so lightly as to give no inconvenience. In several instances, after the patient is up and moving about, I have shown him how to apply the bandage, and in most cases he has been greatly benefited by my instruc-

I might continue to cite case after case with varying results, but such would be useless. My purpose is to contribute my mite to this method of treatment. Even in the last few months, since I feel that I have learned my technique well I have met failures in some cases. Such must come to everyone. No therapeutic measure is absolutely infallible, and such must not be expected of hyperæmia. I believe the method worth more than a mere trial. It is worth a continuous effort on the part of every practitioner, and will soon be adopted universally wherever intelligent medicine and surgery are practised. What has been my success can be another's, if he will give the whole matter careful attention. Up to this time I have treated more than two hundred cases by hyperæmic methods, and am becoming firmer in my conviction each day that it is one of the most conservative methods yet to be introduced into surgery. Careful application of hyperæmia will make unnecessary many mutilating surgical operations with their consequent pain and scars. There are many cases to which hyperæmia cannot be applied because of location, but I believe constant study of this method will bring about increased facilities and devices.

All life is hyperæmia, hence hyperæmia is as old as life. The application of this functionating principle to therapeutics is but another example of man's ingenuity which harnesses the forces of Nature and makes them do his gentle bidding.

770 SOUTH EIGHTIFNIH STREFT.

THE STOMACH AND INTESTINAL GASES.

With a Description of an Apparatus for their Collection and Analysis.*

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(Concluded from page 689.)

THE APPARATUS.

The apparatus with which all these analyses were made was devised by Professor N. Zuntz, of Berlin, and myself. After a demonstration before the Berlin Physiological Society, Professor Zuntz (25) published a detailed description of the apparatus, together with an explanation of its working principles and a record of the various tests made to verify its accuracy. In view of this, I shall limit the present discussion to such technical details as are essential to a proper understanding.

At the outset, it must be understood that the apparatus was devised and is intended only for the analysis of such gases as are of common occurrence in the alimentary canal, viz., carbon dioxide, oxygen, nitrogen, hydrogen, marsh gas, and allied hydrocarbons.

The carbon dioxide and oxygen are determined directly through absorption by certain chemical solutions. In each case, the amount of contraction of the gas mixture equals the volume of the oxygen or carbon dioxide that was present.

Inflammable gases must first be burnt in an excess of oxygen or of a gas mixture, such as atmospheric air, that contains a known amount of oxygen. The percentage of hydrogen and of marsh gas, etc., is determined from the amount of the ensuing contraction and the carbon dioxide formed.

The apparatus, therefore, consists essentially of two parts, the one, a (see Fig. 1), being for the measuring of the gas mixture and the absorption of carbon dioxide and oxygen, and the other, b, for the combustion of the inflammable gases, hydrogen and the marsh gas series. The two parts are closely connected by short, thick walled rubber tubing of small calibre; thus leakage or the accumulation of gas between the parts is prevented.

gas between the parts is prevented.

The parellelopiped shaped glass box seen in Fig. 1 is 40 cm. high, and rests upon a four legged metal stand. It is filled with water in order to maintain a uniform temperature in the gas mixture while in the burette tubes a and b. At its upper end the glass box is fitted with a light, metal collar, to which

Read in part with a demonstration of the apparatus used at the annual session of the American Gastroenterological Association, Atlantic City, June 3, 1907.

are attached the absorption pipettes d and e. One of these, d, is for carbon dioxide. It is filled with a strong caustic potash solution, in which are many pieces of narrow glass tubing. The pipette e is for oxygen, and contains a number of small pieces of

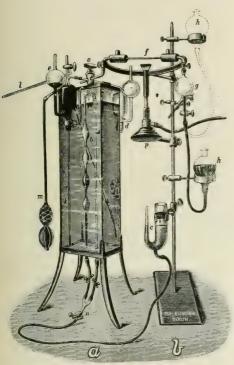


Fig. 1.-Apparatus for gas analysis.

copper gauze tightly rolled into cylindrical shapes. These are placed in a mixture of four volumes of concentrated ammonium carbonate solution with one volume of caustic ammonia solution of specific gravity 0.91. The lower, free openings of the pipettes are securely closed by rubber stoppers.

The gas burette consists of the tubes a and b placed vertically in the centre of the glass box, and passing out below through two round holes in the bottom of the same. A rubber tubing slipped over each lower burette end prevents the escape of any water, and serves also to connect the burette with the Y shaped glass tube n. Each of these rubber tubes is furnished with a pinchcock. Above, the burette tubes a and b are united by a short, curved glass tube, 4 mm. in diameter. Upon the upper surface of the latter is a short, straight, vertically placed glass tube whose interior is continuous with that of the curved connection tube, and whose upper end widens out to receive a tightly fitting glass stopper o. The burette tube a has four elliptically shaped enlargements, above and below each one of which there is a horizontal circular marking. The space

between every two markings holds 10 c.c. of gas. The tube b is of uniform calibre throughout, and has 12 c.c. of its interior space marked off in subdivisions of 0.05 c.c.. The zero point is at the uppermost horizontal marking of the tube a, and the rest of the markings continue down the tube b. The entire measuring space therefore equals 52 c.c. As in all glass burettes, the accuracy of each measurement must be verified by careful testing, and a record of any errors preserved.

Four short, thick walled horizontal capillary tubes pass off at right angles to each other from the glass stopper receptacle of the burette; their lumina communicate with that of the burette. Three of these tubes are straight, and their outer ends communicate respectively with the external air and the absorption pipettes d and e; the fourth tube has its outer end curving upwards at nearly a right angle and is connected with the combustion apparatus B. All of these connections are made by means of thick walled capillary rubber tubing fastened by fine copper wire to the glass and metal tubes.

The glass stopper o is supplied with an interior boring which curves upward from the centre of its lower surface to the middle of one side. The latter opening is at the level of, and communicates with, the inner opening of each of the four horizontal glass capillary tubes. Thus, by successive turns of the stopper o through 360° , the burette space may, at will, be completely closed off, or else brought into communication with the outer air, the absorption pipettes, or the combustion apparatus.

The long arm of the Y shaped tube n is connected by a long rubber tube with the levelling glass c, the peculiar shape of which is seen from the cut. This tube is furnished with a screw pinchcock. The levelling glass and the rubber tube may be filled with mercury, but it is better to use a lighter fluid that absorbs little or no gas. We always employed a saturated sodium chloride solution, faintly acidulated with hydrochloric acid, and colored yellow with rosolic acid. By the proper turning of the



Fig. 2 .- Apparatus for the collection and termentation of gases.

stopper o, and the raising or lowering of the levelling glass c, the salt solution is made to rise or fall, and air or gases can, at will, be drawn into or forced out of the burette and the absorption pipettes.

The double balloon bulb seen in the cut is attached to a long glass tube, whose end, guarded by a piece of rubber tubing, dips down to the bottom of the water. A uniform temperature of the water is obtained by blowing air from time to time through the water. The vertical glass tube k, standing in the water, is weighted down with metallic mercury. Its lumen measures 50 c.c. and communicates with that of the graduated tube l, from which it may, however, be closed off by a stopcock. The two tubes constitute a thermobarometer. A drop of petroleum is placed in the lumen of l, and any variations in the temperature and atmospheric pressure in tube k result in a corresponding change in position of the petroleum drop. The area of k being known, the effect of any alterations in atmospheric and temperature pressure upon the volume of gas under analysis can be readily figured out.

That part of the apparatus used for the combustion experiments is an adaptation of Drehschmidt's (26) modification of Orsat's original device for burning gases within a platinum capillary tube. Prior to this, the method employed for determining inflammable gases was that through their explosion in the presence of an excess of oxygen and an indefinite amount of oxyhydrogen gas. This was both tedious and cumbersome. The essential part of the combustion apparatus under discussion is the narrow platinum tube f. Within its lumen is a fine platinum wire. The ends of the tube pass into two hollow copper jacket boxes and are there soldered to two small brass tubes. The latter emerge, one from each of the copper boxes, and curving downwards pass through and slightly beyond the rounded ends of a flat, brass, arcshaped band, fastened to the burette stand. Binding screws secure the brass tubes to the brass band. The copper boxes contain water for cooling the heated tubes. The free end of the one brass tube is connected with the absorption apparatus as already explained; that of the other is connected by thick walled capillary rubber tubing with the glass bulb g, whose lower end tapers into a glass capillary tube fitted with a stopcock. This capillary tube is connected by a reavy rubber tube with a second glass bulb k. The latter contains sufficient metallic mercury to more than completely fill the bulb g. This is accomplished by opening the stopper in g, and raising the bulb h to the necessary height, as indicated by the dotted figure.

If the stopper o be turned towards the combustion apparatus, and the stopcock in g be opened, the gas mixture may be drawn from the burette through the platinum tube into bulb g, or driven in the opposite direction by merely lowering or raising the

mercury bulb h.

Whenever a stomach or intestinal gas mixture is to be analyzed, the copper jackets must first be filled with cold water, and the stopper a brought into communication with the exterior air. Stopcock g is then exceed, and the mercury driven from bulb h to g. The interior of the burette is next washed several times with the rosolic acid salt solution by raising and lowering the levelling glass c. The burette and the horizental air communicating glass capillary are left full of the solution, while the pinch-

cock n is tightly screwed down. The gas mixture container is now connected with the burette; the capillary rubber connecting tube, if desired, may be temporarily fastened by copper wire. If the volume of gas to be analyzed is 12 c.c. or less, tube b only is filled; if more than 12 c.c., tube a is first filled. Care must be taken to adjust the lower level of the gases to one of the horizontal markings on the tube filled. Whichever tube is being filled, the corresponding pinchcock below that tube is opened, while that of the other tube is left closed. By carefully opening the screw n and fastening glass c, as shown in the illustration, below the level of the burette, the salt solution will slowly flow out of the burette and the gas mixture be drawn in. When the burette is filled, stopper o is turned off again, screw n tightened, and air is blown through the water jacket. The gases are given a short time for adjustment. Their volume and the standing of the thermobarometer are then noted, whereupon the analysis proper may begin.

Stopper o is turned toward pipette d (for carbon dioxide absorption), the levelling glass c is talen in hand, the both pinchcocks below the burette, as well as the screwcock n, are opened, and the glass c raised until the gases are driven into pipette d. They remain there but a few seconds, when, by lowering the levelling glass and manipulating the screw and pinchcocks as before, they are again drawn back into the burette. Uniform temperature of the water being secured, the gases are given a few seconds for adjustment, and their volume and the standing of the thermobarometer again noted. The stopper o is then turned towards pipette e for oxygen absorption. The same procedure is gone through as with pipette d, excepting that the gases are permitted to remain about three minutes in e, on account of the slower absorption of oxygen,

The gas mixture is now ready for combustion. is first driven into pipette d, and left there while the stopper is turned and an amount of pure oxygen or of atmospheric air, more than sufficient for complete combustion, is drawn into the burette. This amount is measured off and noted. It is then mixed with the gases in pipette d, and the whole drawn back into the burette. The Bunsen burner p is now lighted, care being taken not to heat the platinum tube beyond a bright red. Stopper o is next turned toward the combustion apparatus, the bulb h taken in hand and carefully lowered so as to insure a slow flowing of the mercury out of bulb g. This action also draws the gas mixture slowly out of the burette, through the heated platinum tube, and into bulb g. As soon as the salt solution reaches the curved end of the glass capillary connected with b, bulb h is slowly raised and the gases driven back into the burette, thus undergoing a second combustion while passing through tube f. When bulb g has become completely full, its stopcock is turned off and the Bunsen burner removed. The gas cools off very soon in the burette; a reading is taken in the usual way, and the thermobarometer's registration is also noted. Finally, the gas mixture is driven into the pipette d and the amount of carbon dioxide that was formed, determined.

This really completes the analysis. If desired

the correctness of the analysis, as determined from the amount of contraction and the volume of carbon dioxide formed, may be verified by measuring the residual oxygen. From this, the volume of oxygen burnt may be learned, and the hydrogen and marsh gas estimated.

After completion of the analysis, the combustion portion as well as the absorption pipette d should be "washed" with nitrogen so as to be ready for the next analysis. For this purpose the residual nitrogen may be used, or atmospheric air drawn into the burette and freed, by absorption, from its oxy-

gen and carbon dioxide.

The collection and fermentation apparatus was secured through a modification of a device employed by Zuntz and Loewy in some blood investigations. It is simple in construction, easy of manipulation, and cleanly in handling. It can be used not only to obtain stomach contents and intestinal gases, and to hold them indefinitely without leakage, but also for the artificial thermostatic development of gases

from stomach contents and fæces.

As shown in Fig. 2, it consists of a pear shaped glass vessel of about 300 c.c. capacity, into which is fitted a large solid rubber stopper. Two thick walled capillary glass tubes each about 7 inches long, pass vertically through the stopper and end, the one (a) flush with its inner surface, and the other (b) 5 mm. beyond the same. To this protruding end there is fastened by fine wire, a thin rubber bag of such size that, when distended, it completely fills the interior of the glass vessel. Exteriorly, each tube is bent in its middle to an angle of about 110°, and on its free end has a short piece of thick walled rubber tubing fastened by copper wire. Each rubber tubing is supplied with a screw pinchcock.

When using the apparatus for collecting stomach contents or intestinal gases, a little water is placed into the pearshaped glass vessel and the rubber stopper with the rubber bag inserted. The stomach or rectal tube is next attached to the rubber tubing on a through a short glass connection piece, and water squirted from a syringe into the thin rubber bag until the latter completely fills the interior of the glass vessel. This forces the water and air from the pearshaped vessel out through the stomach or rectal tube. The latter is then introduced into the stomach or rectum, and by suction, the water is drawn from the rubber bag back into the syringe. A negative pressure is thus created in the glass vessel, and the stomach contents or rectal gases, as the case may be, are thus drawn into it by aspiration. When a sufficient amount has been collected, the pinchcock on a is screwed down and the apparatus detached from the tube.

In the case of the direct fermentation of fæces or of stomach contents, these, if not already of fluid consistency, are made so through the addition of water. They are placed within the pearshaped glass vessel, and the bag and stopper inserted. All the air and a little of the fæcal or gastric mixture are then driven out of tube a by squirting sufficient water into the bag. The pinchcock on a is then screwed down very tightly, and the entire apparatus placed in a thermostat until sufficient gases for analysis have developed. As these collect, a corresponding amount of water is forced out of the rubber bag through tube b.

Whenever an analysis of the gases is to be made, the rubber tubing a is attached to the analytical apparatus, as already described, and a little extra water is squirted into the thin rubber bag. The pinchcock on a is then screwed slightly open, and the gas mixture drawn in as already explained. The analysis being started, the collection apparatus is detached, and, if desired, may be allowed to ferment further after more water has been forced into the rubber bag and the screw on tube a tightened. no more gas is required, the rubber stopper and bag are taken out and the entire apparatus washed.

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[&]quot;If desired, a T should piece of glass tubing may be used just all this permits of the escape of the first portion of stomach content of rectal gases.

¹⁴ EAST SIXTIFTH STREET.

CASE OF LEPRA TUBEROSA. By JEROME KINGSBURY, M. D., New York.

This case was presented by the writer at the March meeting of the Society of Dermatology and Genitourinary Surgery, and since then at several other clinical societies. The patient attended the evening clinic at the Skin and Cancer Hospital for over two months, but is now an inmate of the City Hospital on Blackwell's Island.

History. Ernst G., twenty-six years of age, born in Courland, Russia. When a boy he worked with his father who was a fisherman, but for the past ten years has been who was a insterman, but for the past tell years has been a sailor. He had made a number of deep sea voyages, but never visited any ports in the tropics, being generally employed on American coasters. Leprosy is endemic in Courland, but according to the patient's own statements he never knew or heard of anyone in his native place who had the disease. Family and early personal history was negative. Six years ago he suffered from an attack of pleurisy with effusion, but otherwise his general health had always been good. No history or evidence of syphilis As far as could be ascertained there did not

seem to have been any change in his sexual

functions.

About two and a half years ago the man noticed that at night his legs would often be swollen. There was no pain, but he had occasional chills. The swelling of the legs increased and persisted for nearly three months. About this time lumps began to appear over the shins. At first they were small and few in number, not more than half a dozen. These gradually increased in size, however, and soon new ones appeared to the best of the state of the size of the state of the size. on the calf and thighs. Later the arms and forearms became affected, and about nine monts ago a single nodule appeared on the forehead. There had been diminished sensation in the arms and legs for nearly one year. About four months ago the man had what was undoubtedly an acute leprous exacerbation. There was moderate fever, the lymphatic glands became enlarged, and the left leg was red and swollen. He was admitted to Bellevue Hospital and remained in the erysipelas pavilion for over two months. He first came under my observa-

tion at the Skin and Cancer Hospital shortly after his discharge from Bellevue. Examination. The patient weighed one hundred and twenty-five pounds, and was about five feet seven inches in height. He had light hair and the skin on unexposed and unaffected parts was very fair. He was not very well developed although wiry and fairly strong. There was general though

moderate adenopathy.

Physical examination showed the heart and lungs to be in normal condition, and no enlargement of the spleen was made out. No reaction obtained from the conjunctival tuberculin test. This was employed merely as a matter of interest because marked reactions have been frequently reported as occurring in nontuberculous lepers after the injection of tuberculin. Urine and nasal se-cretions were examined for lepra bacilli with negative results.

The cutaneous lesions varied in size, from papules the size of a pin head to flattened tumors three quarters of an inch in diameter. There were not more than five, however, of this latter size. These were soft and reddish brown in color. There were nearly forty nodules that were about the size of a split pea on each of the upper extremities. The larger number of these lesions were found on the extensor sur

There were about sixty similar nodules on saces. There were about sixty similar nodules on each thigh and probably half of this number on each leg. Several papules on the soles resembled those seen in syphilis. There was a tubercle on the forehead about three eighths of an inch in diameter. It was soft and velvety, but showed slight telangiectasia on the surface. This was the only lesion on the face. On the arms and thighs were numerous minute yellow papules. These for the most part were closely aggregated and many had coalesced. Quite a number of these papules had invaded an old vaccination cicatrix on the left arm. The trunk was free of lesions. There were superficial scars on the right elbow and left thigh, the result of recent trauma. On the legs there were numerous dark pigmented areas that showed the site of previous nodules. Right leg showed slight swelling, and the skin was shiny and blueish red in color. The left leg is now apparently of

The ulnar nerves were but slightly thickened and there was no contracture of any of the fingers. Peroneal nerves were a little enlarged, but the great auriculars seemed normal. There were but few areas of complete anæsthesia, although sensation was diminished in the forearms and legs. Several areas on the back showed hyperæsthesia.

There was no seborrhœa of the scalp, but the hair was



Leprosy simulating sarcomatosis.

dry and thin. Probably half of it had been lost. The beard was scanty and the eyebrows, particularly at the outer third, were exceedingly thin. There was hardly any suggestion, however, of the characteristic facies of the

A nodule excised from the forearm was sent to the Presbyterian Hospital Laboratory for microscopical examination, and I am indebted to Dr. Meakins, the resident

pathologist, for the following report:
Microsections show large masses of lymphoid and epithclioid cells with many large giant cells. With staining for bacteria the giant cells and many epithelioid cells are shown to be crowded with lepra bacilli-

39 WEST THIRTY-NINTH STREET.

FOREIGN BODIES IN TRACHEA AND STOMACH

By WALTER LATHROP, M. D., Hazleton, Pa.,

Surgeon in Chief, State Hospital.

CASE I.—A. G., age eighteen, was brought to the hospital at 7,30 p. m., in the evening of July 6, 1908, with a history of swallowing a dime, some four hours earlier; and since then had been unable to speak above a whisper, had great distress in region of throat, some coughing, and dyspnæa

A physician who was called early advised her removal to a hospital; the x ray was used and the coin was plainly



Table knife, nine and three quarter inches long, removed from stomach and esophagus

seen rising and falling with each movement of the trachea. She was told the danger of leaving it alone, also the danger of opening the trachea. She decided to risk the operation, and was speedily prepared, and chloroform administered; a free incision was made, not rapidly, but with care; all bleeding checked, the trachea was opened low down, and the incision extended to the thyreoid cartilage. The coin lay at one side, was grasped by a small forceps, and removed. The wound in the trachea was closed by catgut stutures, as were the other structures. The operation was completed in eight minutes. The patient reacted

tion was completed in eight minutes. The patient reacted well; the wound healed primarily, and she was discharged in a week with her voice restored.

Case II.—C. H., age twenty-six, German; came to the hospital on the evening of July II, 1908, and gave history of having swallowed a table knife, at 3 p. m., that day. He stated he had no pain, but was worried about it; the man was somewhat under influence of alcohol, and his story was doubted by all who heard the table. The x ran did not was doubted by all who heard the tale. The x ray did not show anything, owing to the shadow of the vertebral column. He was advised then to have an exploratory operation performed, but declined emphatically, and left the institution. Twenty-four hours later he again appeared, and said he would remain and have the operation, as he had

pain in the epigastrium.

He was prepared carefully for operation, and the next morning a laparotomy was performed; the stomach drawn up, and a hard object felt. On incising the stomach, I re-moved, much to my astonishment (as well as all who were present), a long, black handled table knife, which had extended up into his oesophagus, and rested by the handle on the anterior wall of stomach. The incision was carefully closed by double row of continuous sutures, with Pagen-stecher thread. The incision into the abdomen was closed throughout, and the patient put to bed. He reacted well, and was in the best possible condition for twenty-four hours, when his pulse shot up to 140, and in a few hours he was dead, with symptoms of gastric dilatation, and suffocation. Before his death he told us that the evening he first came, he took emetics and tried to disjodge the knife. after which he became worse, and was glad to have the

An autopsy was performed, which revealed several severe lacerations in the œsophagus and cardiac end of the stomach, showing the effect of his emetics. Had he submitted to operation when he first came, I believe he would have recovered. The wound in the stomach was entirely closed

and in fine condition. His heart was very much dilated. The knife was nine and three quarters inches long; the blade was one inch wide. The case is reported as one of unusual interest, in the line of foreign bodies in the

TRAUMATIC INSANITY. By J. W. HARTIGAN, M. D., Morgantown, Va.,

Fermerly Professor t Anatomy in the West Virginia State University.

The patient was a male, forty-two years of age, a German by birth, by occupation a mechanic. Family history without fault. This man had been occupied at public works in this community for years. He had always borne an enviable reputation, industrious good natured, liked by all who knew him. He was a member of a local German club, where he was a universal favorite. Roomed and boarded in a house with a young man from his own country, of whom he was extremely fond, acting as a father to him, lending him money and paying his board when out of employment

On April 6th, without provocation and without motive, this patient, arriving at his boarding house at 10 p. m., entered his friend's room and shot him to death, also shooting

tered his friend's room and shot him to death, also shooting at another roomer occupying the same room with his friend. Twenty minutes after the murder the murderer was found asleep in his own room, which adjoined that of his murdered friend. He was arrested and placed in jail.

I examined him during his incarceration in the the jail with three other physicians, and found the following conditions: Right pupil dilated under all conditions, left pupil normal. Delayed intellection. Apparent progressive paralysis of right forearm and hand group. Inability to shake hands with his right hand. Pain in head all the time, would stift for hours quietly with his head buried in his hands. Insit for hours quietly with his head buried in his hands. Inability to remember the movements necessary to make the



letters of the alphabet or to write from mental initiative or from dictation, though he could recognize the letters when asked what they were. No recollection of his crime, stoutly denying it, and declaring that the murdered man was his best friend.

His case came on to trial for murder, for which he was acquitted on the ground that he was of unsound mind at

the time of the commission of the crime and now. The evidence before the jury brought out the fact that he acted in a queer manner for some months before the murder. One instance was cited that he had blown the whistle repeatedly at the works where he was employed at any hour, irrespective of quitting time, and that he had some years before sustained an injury to the head by being struck with a chisel with such force as to knock him down and to render him unconscious, and from the effects of which he had been in bed with an attack of brain fever for six weeks. Before the court to answer hypothetical questions, I

Before the court to answer hypothetical questions, I stated that his old injury might have left him with some pressure effects which might account for his present mental condition. After much questioning by the presiding judge and such suggestions as I could offer, the court turned him over to me for treatment and operation if I saw fit to operate. He would have been sent to the asylum had he not presented some points of hope after the operation. He was removed from the jäll under competent guard, and after studying him for some time, on June 10, 1908, I op-

erated upon him.

I expected to find a depression or a thickened meningeal area. The initial opening was small, with no membrane at all under the opening; instead a vacant space. I enlarged the opening sufficient to admit a finger, and at the bottom of the depression I could plainly feel the brain pulsate. On withdrawing my finger material of the consistence of thin tar adhered to it. After working some of this loose the brain promptly rose up and filled the cavity-the size, I should say, of an English walnut. Some of the brain substance came away with the gauze used in sponging. Suddenly the hæmorrhage became so furious that I was sure I had opened the longitudinal sinus. I tried repeatedly to check the hæmorrhage with gauze, but was unsuccessful. I finally packed enough to control the bleeding, and closing the wound got the patient off of the table as soon as possible. I allowed the pack to remain forty-eight hours, removing it without trouble and without the slightest hæmorrhage. The wound healed without further dressing, and after the first seventy-two hours, during which time I kept the patient under the influence of sedatives, he appeared to regain all his lost functions.

He has now been at his work for over four weeks, fully restored in every particular. He has been discharged by the court as cured. The accompanying photograph will show better than I can explain the localization area.

This patient gave a history of having had loss of use of right foot, right leg, right shoulder, though when I saw him only the muscles named above were at fault. Unfortunately no ophthalmoscopic examination was made in this case.

THE CURE OF INGUINAL HERNIA UNDER LOCAL ANÆSTHESIA.*

By Albert S. Morrow, A. B., M. D., New York,

Adjunct Profes or of Surgery in the New York Polychine; Attending Surgeon to the Workhouse and New York City Home for the Aged and Infirm.

According to Berger's statistics, the proportion of those suffering from hernia is forty-four in one thousand. It has been stated that there is a loss in the earning capacity of those so afflicted amounting to from fifteen to fifty per cent. (1). Aside from this economic standpoint, however, and what is vastly more important, is the fact that an individual with a rupture always has a possible source of death from strangulation. Two alternatives are offered to these patients: (1) Radical cure by operation; and (2) wearing a truss.

The radical operation, on account of the reasonable certainty of cure and the comparatively short detention from business, is one of the most successful of surgical procedures, yet it is safe to say that but a small proportion of those afflicted with a hernia choose this means of relief. This is too well

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attested by the large number of trusses yearly manufactured and sold to the public to require further comment. The reason for this can be found in the words of Da Costa, that "the radical operation is almost without danger in properly selected cases. General anæsthesia must be held responsible for this qualified statement. While I am willing to admit that the number of deaths from general anæsthesia may be small, still this danger strongly appeals to the patient. This apprehension, coupled with the unpleasant after effects of general narcosis, deters many from accepting a means of cure that we can be reasonably sure will be permanent. Improvement in the anæsthesia alone is necessary to popularize what is already from the surgeon's standpoint a most satisfactory operation. To-day we do not hesitate to open an abscess, amputate fingers, remove ingrowing toenails and external hæmorrhoids under local anæsthesia, but with a hernia—simply because it is classed as a major operation—general narcosis is considered to be essential. Yet the operation for inguinal hernia, on account of the superficial position of the structures, the limited area involved, and the ease with which the sensory nerves supplying the region of operation can be identified and cocainized, is one that above all others is adapted to local anæsthesia.

This paper is based upon a study of twenty consecutive cases in which the radical operation was personally performed under local anæsthesia. These were not selected cases, and so can be considered

fairly representative.

Anatomy.—To secure success, an accurate knowledge of the situation and course of the nerves supplying the field of operation is essential. These nerves are but three in number, namely, the hypogastric branch of the iliohypogastric, the ilioinguinal, and

the genital branch of the genitocrural.

The iliohypogastric nerve, derived from the first lumbar and at times from the eleventh and twelfth thoracic in addition, divides into an iliac and a hypogastric branch after piercing the transversalis muscle near the middle of the crest of the ilium. hypogastric branch continues in a direction downward and inward toward the linea alva, lying between the internal oblique and transversalis muscles, to both of which it supplies twigs and inosculates with the ilioinguinal. Near the internal abdominal ring it gradually passes through the internal oblique muscle, and, gaining the space between the internal and external oblique, runs downward and forward. Becoming superficial by piercing the aponeurosis of the external oblique a little above the external ring, it terminates by supplying the skin of the suprapubic region. It will be found in the upper angle of the hernial incision after reflecting the aponeurosis of the external oblique, usually running downward and inward on a line drawn from near the anterior superior spine of the ilium to a point about an inch above the external ring.

The ilioinguinal, also derived from the first lumbar, and at times additionally from the twelfth thoracic, accompanies the hypogastric nerve between the internal oblique and transversalis muscles as far as the iliac spine, lying, however, on a somewhat lower level. It supplies twigs to both of these muscles, and then, piercing the internal oblique about half an inch internal to the iliac spine, passes down

in the inguinal canal. Emerging at the external ring to the outer side of the cord, it distributes branches to the skin of the upper inner side of the thigh, the pubic region, penis and scrotum, and labia in the female. The ilioinguinal nerve is smaller than the hypogastric and in some cases it may be absent, in which event its place is taken by the genitocrural. Usually it will be found in the line of incision, just beneath the aponeurosis of the external oblique and on a lower level than the iliohypogastric, running downward in the long axis of the hernia. It may even lie as far outward as Poupart's ligament.

The genitocrural nerve, derived from the branches of the first and second lumbar, divides high up into a crural and a genital branch. The genital branch enters the external abdominal ring and traverses the inguinal canal, lying internal to and below the spermatic cord. It supplies the cremaster muscle, and may also send twigs to the internal oblique and transversalis muscles, and terminates by supplying the skin of the scrotum and adjoining portion of the thigh. It will be found, after reflecting the aponeurosis of the external oblique, lying among the structures of the cord; frequently it lies

behind the cord.

From this brief description it will be seen that sensation in the inguinal region is presided over by three fairly large nerve trunks, which have a certain definite position and are so situated that cocainization is performed with ease and certainty; and that, furthermore, if all three nerves are found and cocainized, pain sensation in the entire field of opera-tion will be abolished. Practically, however, it is not absolutely necessary to cocainize all three nerves, for if either the iliohypogastric or the ilioinguinal is cocainized the operation can be performed quite as painlessly by simply infiltrating in sensitive regions supplied by the uncocainized nerves. In all of my cases was I able to find at least one of the nerves. In nineteen of the iliohypogastric and ilioinguinal were both found; in that one case the ilioinguinal was missing. In six cases was the genitocrural found. Thus in less than one third of the cases were all three nerves found, yet the operation was performed in a satisfactory manner.

Solution Employed for Anasthesia.- In all cases cocaine has been employed, using a freshly prepared 0.2 per cent. in hot normal salt solution for the skin anæsthesia, and o.1 per cent. solution for deeper infiltration. The solution must be freshly prepared, for, as is well known, cocaine solution quickly develops a fungus and in a short time may produce suppuration. It is used warm, at the body temperature, to increase the effectiveness of the anæsthesia. Normal salt solution is employed instead of water, because, as pointed out by Matas (2), it is isotonic with the blood serum. Such a solution, producing neither swelling nor shrinkage of the cells, does not cause pain and has no injurious effects upon the tis-Other local anæsthetics have not been tried, for it has been found that cocaine answers all purposes, producing certain and complete anæsthesia without injury to the tissues, and in the strength mentioned is safe and nontoxic. Less than one grain of cocaine, and often less than half a grain, will suffice for the entire operation. This amount injected intermittently for an hour or more is abso

lutely safe. Bodine reports over 400 hernias done under local anæsthesia without a single case of cocaine poisoning (3). In 7,000 cases of cocaine anaesthesia Reclus has not had a death that could be

attributed to the cocaine (4).

Technique.—The technique employed is the same as described by Bodine in 1903 (5). About half an hour before the operation 1/4 grain of morphine is given hypodermatically. This serves a three fold purpose; it allays any nervousness the patient may have, it deadens sensibility somewhat, and, lastly, it is the physiological antidote for cocaine. The table on which the patient lies should be made as comfortable as possible by covering it with several folded blankets or an air cushion. The patient should be told to assume as comfortable a position as he can, with the arms folded over the chest or under his head, but entirely free. If so inclined he may read, smoke, sip a cup of tea, or occupy himself in any way that will distract his attention from the operation. The field of operation must be very gently and carefully washed. The nurse doing this must be instructed to confine her attention to the region of operation and not pour quart after quart of solution over the entire abdomen, as is so often done, and then leave the patient saturated in a pool of chilly water. Observance of these small details gains the patient's confidence, and prevents restlessness, complaints of cramps, and backache before the operation is half completed. The line of incision is cocainized with a 0.2 per cent. solution of cocaine. The needle should be held at an angle of 45°, and is pushed into the malpighian layer of the skin. If it is inserted properly its point will be visible just below the skin surface. A few drops of cocaine will produce a weal the size of a ten cent piece. The needle is reinserted into the edge of this weal and more solution injected until the entire line of incision is one long weal. In this way the first prick only of the needle is felt by the patient. Then with a 0.1 per cent, solution the subcutaneous tissues are thoroughly infiltrated, especially in the neighborhood of the external ring. After the incision is made through the skin and subcutaneous tissue, any dissection about the external ring should be postponed until the nerve trunks are cocainized, as their terminal branches supply this region. It is better to go right down to the aponeurosis of the external oblique, incise this structure, which can be done painlessly without additional cocaine, and cocainize the nerves. One or both the iliohypogastric and ilioinguinal will be seen lying upon the internal oblique muscle as white cords when the aponeurosis is reflected. One or two drops of a 0.2 per cent. solution of cocaine are now injected into and around each nerve, after which the dissection about the external and internal rings may be completed. The cord is dissected from the sac, care being taken not to touch or pinch the vas, as such a procedure causes the patient most excruciating pain, similar to that produced when the testicle is pinched. The opening of the sac may be painful in some cases; this seems to be especially so in hernias of short duration. In such cases the sac has been found to be very much more sensitive than is the thick sac in a hernia of long standing. Infiltration into the sac along the proposed line of incision will obviate complaints in these cases. The interior of the sac is then inspected and the contents are dealt with as may be deemed necessary. Trendelenburging the patient will cause nonadherent contents to return to the abdomen without the necessity of any handling. To avoid pain in ligating the sac it is well to twist it into a cord and infiltrate about the neck at the point where the ligature is to be applied. The sac can then be transfixed, ligated, and amputated painlessly. The operation is completed as in an ordinary case, using any of the methods for repair of the canal that the operator may desire.

Pain.—The patient's version as to the painfulness of the operation will vary according to the individual. What one might regard as pain will pass unnoticed by another. Some have declared the entire operation to be less disagreeable than the shaving and preparation before it. Others have said that it was no worse than having a tooth filled. In no case has a patient done more than give facial or verbal expression of the pain. The pain has never been severe enough to make them squirm or jump, nor has it as yet been necessory to complete the operation under a general anæsthetic. The amount of pain inflicted can be regulated to a great extent by the operator. Rough handling and pulling on tissues must be avoided. Clear cut dissection only is allowable, for it must be remembered that cocaine only deadens pain sensibility, it does not abolish the perception of touch. A fidgety, nervous operator will of necessity inflict more pain than one who makes every move and each cut count for something. There is no doubt that every time a bloodvessel is cut or clamped it gives the patient a twinge of pain. It is a mistake to tell a patient that the operation will be devoid of pain, and the next moment give him a sudden shock by clamping some bleeding vessel and then insist you have not hurt him. This repeated several times causes him to quickly lose confidence in the operator, and he soon becomes nervous, restless, and apprehensive. It is far better to anticipate each little twinge and prepare the patient by telling him what to expect. Failure to observe these little details is responsible for many failures in cocaine work and results in unjust condemnation of the method, though the fault lies with the operator.

Completeness of Operation.—It is contended by the opponents of this method that it is impossible to perform as thorough an operation as with the patient under a general anæsthetic. This is a mistake, for if the cocaine is used properly there need be no curtailment of the operation in any of its steps. Without entering into a discussion as to the merits of individual operations, I will say that I have witnessed or performed a majority of the recognized methods of closing the inguinal canal. A brief sumary of the cases operated upon will furthermore give an idea as to some of the conditions met with.

The hernias varied in size from that of a hen's egg to the size of a child's head. They were of from six weeks to thirty-five years' standing. The youngest patient was sixteen years old, and the oldest sixty-two years. In four cases it was necessary to ligate and amputate omentum, which was done without additional pain. Two of the cases, however, suffered mild shock, lasting several minutes. In three cases it was necessary to separate adherent gut. One case was a traumatic hernia, in which the hernia protruded through the internal oblique in

two places, the nerves being embedded in scar tissue, a condition resembling that found in recurrent Two cases were congenital, requiring the formation of new tunics for the testicles. In half the cases the sac was very adherent to the cord, necessitating careful dissection for the separation of these two structures. In a case of strangulated femoral hernia, not included in the above, 4 inches of gut was resected. Two cases that had been previously operated upon for hernias on the opposite sides under general anæsthesia declared that all the pain they suffered was preferable to the discomfort produced by the general narcosis. In a case of double hernia, the first side was operated upon under local anæsthesia, and, the patient, being given his choice of anæsthesias and for the second side, chose local anæsthesia again. These cases represent fairly well the general run of hernias, and in all of them local anæsthesia was found entirely adequate to deal with the conditions encountered.

Advantages .- I. All danger of death from anæs-

thesia is avoided.

2. The disagreeable after effects of general anæsthesia, such as nausea, vomiting, and backache, are absent; consequently there is no danger of the stitches being separated or torn out from the strain of vomiting. A person need only remain in a ward and compare the convalescence of a hernia immediately after ether and a similar case after the use of local anæsthesia to be convinced of the superiority of the latter; on the one hand we have a patient nauseated, vomiting, and but half conscious, with the prospect of twenty-four to forty-eight hours' fasting added; on the other, a patient in possession of all his faculties, with none of the above unpleasant symptoms, and who an hour or two later will be found eating a light meal with relish.

3. There will be fewer cases of suppuration, because gentle handling of the tissues is imperative; hence there will be but a small amount of trauma

inflicted.

4. Under local anæsthesia the integrity of the nerve supply to the inguinal region is preserved, hence there is less danger of recurrence. Cutting a nerve, as is well known, produces thinning, atrophy, and paralysis in the muscles supplied. On this point Cushing (6) cites the effect of cutting the genitocrural nerve in operations for varicocele, the effect being atrophy of the cremaster and consequent sagging of the scrotum on that side. The necessity of preserving the integrity of the nerves supplying the inguinal region has been very strongly emphasized by Bodine (7), and I agree with him that many of the recurrent hernias (exclusive of those due to infection of the wound) are the result of the destruction at the time of operation of the nerves supplying the lower fibres of the abdominal muscles. This would seem to be borne out by the conditions of the parts in recurrent hernias. Seldom has the line of suture given away; instead there is a thinning of the new formed muscular wall, allowing the hernia to redevelop.

5. For strangulated hernia local anæsthesia is especially adapted; or, in the words of Bodine, "It rises almost to the dignity of an imperative method." These cases are generally already overwhelmed from toxic absorption and in more or less of a precarious condition. The additional strain of a general anæs-

thetic, aside from the danger of the patient drowning in fecal vomit, frequently produces just that much more shock than the patient can stand, and it is the experience of many to have such cases die on the operating table from the anæsthetic. Again, local anæsthesia furnishes abundance of time for the restoration of the circulation in gut of doubtful vitality without adding a particle to the shock or danger for the patient. Hot towels may be applied to the intestine almost indefinitely, if necessary, and the operation then be completed. In the meantime the patient remains as comfortable as he would be if in bed. If the gut is gangrenous, resection may be performed or a temporary fistula may be established without the use of additional cocaine. In this connection I will again cite the case of resection mentioned above as an illustration:

Mrs. B. W., age eighty-seven, was operated upon for a small size strangulated femoral hernia of at least thirty hours' standing. At the time of operation she had a rapid, irregular pulse and fecal vomiting, with all its attendant symptoms. On opening the sac a small knuckle of gut was found to be black, and the application of heat for over half an hour failing to change its appearance, four inches were exsected and an end to end anastomosis was performed. This was done without any complaint on the part of the patient, save when the mesentery was pulled upon. The she complained that "her back felt as if it were breaking. The patient was returned to bed in even better shape than before the operation, but fecal vomiting continued and she died twenty-four hours later. Bodine reports a case of strangulated inguinal hernia in which he resected eleven inches of gut without pain under local anæsthesia (8)

Conclusions.—It is my conclusion, based on experience in these cases, that local anæsthesia is an ideal anæsthetic for inguinal hernia, and that in a large proportion of cases the operation may be performed absolutely without pain, and at most the pain inflicted during the entire operation will be less than that produced in opening an abscess or an infected finger.

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Therapentical Aotes.

The Sterilization of Catgut.-Dr. Kusnetski (Roussky Vratch, 1908, No. 18) describes his method of sterilizing catgut. He places the catgut threads for eight days in a one per cent. solution of iodine and potassium iodide and for three hours afterwards in a solution of 21/2 drachms of iodoform in 61/2 ounces of ether, 2 pints of alcohol, and 11/2 ounces of glycerin. The threads are then rolled on a sterilized glass spool and placed in a glass vial which is not sealed hermetically at once, a short interval being allowed in which the catgut may dry out.

Gallstone Colic .- Any stomach or duodenal inflammation in gallstone colic, remarks a writer in the Journal of the American Medical Association, should be relieved by daily saline laxatives, perhaps best the effervescing sodium phosphate, and the administration of bismuth and soda three times a day, one hour before meals:

- breakfast.
 - M. ft. chartulæ 20.

Sig.: A powder three times a day, one hour before meals. The diet for a few days should be similar to that for catarrhal jaundice, viz., free from fat. In other words, milk is not a good diet. A little dry toast, broiled lean meat, as steak and chops, hot tea and poached eggs allow sufficient change of diet for a few days. Cold drinks of any kind should not be taken, but plenty of water should be given daily. If there is constipation there should be a daily laxative, as sodium phosphate, or any other saline. If there is jaundice, daily hot baths are advisable.

If there is believed to be chronic congestion of the bile passages, the drinking of a glass of hot water an hour before meals is beneficial. Also ammonium chloride is indicated in this condition, and this drug is just as valuable in subacute inflammation of the bile passages as it is in the subacute inflammation of the bronchial tubes. It may be administered for this purpose as follows:

Ammonium chloride, M. Sig. A teaspoonful in plenty of water, three times a day, after meals.

If the ammonium chloride is very disagreeable to the patient, it may be administered in simple carbonated water or in vichy.

The repeated administration of so called cholagogues, or drugs that are supposed to increase the flow of bile, is not good treatment. Calomel is a cholagogue only in its ability to cause a complete cleaning out of the upper part of the intestine, and is certainly often indicated, but should not be frequently repeated. Salicylic acid preparations somewhat stimulate the secretory activity of the liver, but it is hardly advisable, in the treatment of the condition under discussion, to give a drug so foreign to the system as is salicylic acid. Of course if there is intestinal fermentation and a salicylate. as salol, is indicated, it should be given. A mineral acid, as dilute hydrochloric, or dilute sulphuric, or dilute nitrohydrochloric acid, seems at times to increase the flow of bile to the duodenum, as the duodenum objects to acid and strives to neutralize rapidly any acid that reaches it. These acids, then, sometimes seem to increase the flow of the bile, but except for a short period could not be of any value in disturbances of the gallbladder.

It may be well to repeat the necessity for daily thorough evacuation of the bowels, and this should be accomplished by a saline, preferably, or by an aloin, rhubarb, or cascara preparation, as seems best

to suit the patient.

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PELLAGRA IN THE UNITED STATES.

We are accustomed to associate pellagra with the peasantry of Italy, who subsist to a very great extent on polenta, which is usually prepared by boiling corn meal, often of poor quality, in salt water. The North American continent, to which maize is indigenous, was long supposed to be exempt from the disease, and as a matter of fact the supposition was probably well founded. The apparent anomaly of the virtual exemption of the home of maize from a disease attributed to eating maize has been explained by the theory that American climatic conditions are better adapted to the production of the cereal than those of most other countries are, and that consequently our maize is free from those deleterious qualities, whatever they may be, that appear to be the cause of pellagra.

But within recent years there has appeared in our southern States a disease which, says Passed Assistant Surgeon C. H. Lavinder, of the Public Health and Marine Hospital Service of the United States, is "possibly true pellagra." The bureau has recently issued a pamphlet, by Dr. Lavinder, which gives a succinct account of our present knowledge of the disease. He remarks that "there is reason for believing that perhaps this disease may be quite prevalent, but unrecognized." "Since it is of a serious nature," he adds, "and epidemic in character, knowledge concerning it is becoming of much importance to the American physician, and more especially to the practitioner in the southern States."

Cases have been reported from Georgia, Alabama, Texas, South Carolina, and North Carolina. Examination of these reports, says Dr. Lavinder, seems to show definitely that probably for several years past there have appeared in the southern United States sporadic cases of an unrecognized nature resembling pellagra, and that within the last year or two the disease has increased rapidly in the number of cases and in the extent of territory involved. Though in some respect the disease seems to differ from the pellagra of the Old World, it bears a close resemblance to it. The cases are mostly acute and the mortality is high.

If, says Dr. Lavinder, the cause of pellagra is accepted as a diet of spoiled maize, the American maize crop must within recent years have undergone a decided change in some respect, "for maize has always been very extensively used as food in the southern United States, and pellagra has not appeared in former years." He properly remarks that this question will call for extensive investigation if the disease should continue to advance. There can be no doubt that such a staple article of food as Indian corn is in this country must not be allowed, even to a limited extent, to degenerate into a source of serious disease. We take it that what ought to be found out first is the nature of the change which may have taken place in the grain, which is generally thought to be effected by some fungus. The Department of Agriculture, which perhaps has already given attention to the matter, may certainly be counted on to conduct whatever investigations may be required.

THE NEW TREATMENT OF TABES DORSALIS.

When Duchenne, in 1858, made the far reaching and definite deduction that this much dreaded affection was conditioned on degeneration of the sensory neurones, which gave rise to a definite tissue alteration in the posterior columns of the spinal cord, neurologists felt that an advance had been made toward a clearer understanding of a process which had before been involved in much mystery. Succeeding generations of trained workers have verified his teaching, and at the present time there is a fairly conclusive body of unassailable facts-anatomical, physiological, and clinical-to substantiate the views held by the profession. The most recent work of Wassermann, Plaut, Levaditi, and others has almost demonstrated beyond a doubt that syphilis is generally the primary cause of the disease.

One would think that such a mass of evidence was not to be lightly disturbed, but all is now changed. A new prophet has declared that erosions of the middle third of the urethra in men, perhaps of the cervix uteri in women—it seems unfortunate that a woman's urethra is so short—are the cause of tabes dorsalis. This thesis, originally promulgated over a year ago and supported by more or less colossal misinformation, was again brought forward by Dr. Le Grand N. Denslow at a recent meeting of the New York Academy of Medicine, and as a consequence it has received a good deal of newspaper notoriety. Yet, strange as it may seem, we should not think it worth while to mention the matter but for the fact that one of the high priests of neurology in New York has seemed to lend the hypothesis his support.

Dr. Denslow's original paper was published in the Medical Record for June 15, 1907. In his last paper, recently read but not yet published, the product of his theorizing has been more positively set forth. In 1907 the cure was probable; in 1908 it seems absolute. All great therapeutic discoveries are simple, after all: so is this one. The erosions must be carefully treated with topical applications, sounds are passed, and minute incisions may be needed; but, mirabile dictu, these measures require such a skilful adaptation of means to ends that ordinary physicians are apt to put the lives of their patients in peril if they attempt to follow the lead of the master-the modern magician's wand, though of steel, can safely be wielded only by the discoverer of its new field of usefulness. To such lengths are we come! And the New York Academy of Medicine has been made use of to promulgate such a doctrine and such procedures! But, the results! The people look for a sign, and Dr. Denslow's patients are improved; at least so declares one whose name is held high in professional esteem!

Where lives the man who has not mitigated some cases of locomotor ataxia? Surely the results now brought forward do not compare with those of Fraenkel, of Bern, but he never alleged a cure. Is it not a commonplace of neurology that remissions are frequent in tabes, just as they are in paresis? What man of ordinary experience has not seen patients improve under appropriate treatment for vesical complications, and what member of the profession has not instilled a hopeful view of life into these patients and produced striking amelioration of certain symptoms in many persons sunk into the slough of despondent fatalism? What more has the new treatment of tabes shown? Nothing.

A committee of the New York Neurological Society appointed to report on the circumstances attending the reading of Dr. Denslow's paper has expressed its findings in words which are recorded in our news columns, in which we would emphasize the following sentence: "Your committee further be-

lieves that before such 'cures' are exploited they should be submitted to the most rigid investigation." This report correctly sets forth the attitude of the scientific mind, which is characterized by being open to conviction, but requiring adequate proof before accepting a startling innovation. The facts set forth in support of the new hypothesis are so far not sufficient to warrant its acceptance and certainly not sufficient to warrant its widespread exploitation in a manner calculated to give false hopes to the public.

RABIES.

Relatively to its extreme rarity, there is probably no other disease which excites so much comment, inspires so much fear, is so costly, or has such extensive influence on state medicine. Rabies, being generally recognized as incurable, could scarcely lead to a malpractice suit; the lack of power to control its cause is such that it would be difficult to show legal responsibility in a damage suit; no engineering problems are connected with it, as in the case of typhoid fever; and it is not of the economic importance to call for such institutions as are beginning to be developed for the treatment of tuberculosis. Yet its ultimate influence on medical jurisprudence is greater than that of almost any other disease. Dog ordinances are founded on the fear of it. Such ordinances constitute a precedent for a very special form of taxation; they confirm an old and generally condemned precedent that those who execute the law should derive no immediate benefit from its enforcement, since the dog tax frequently goes to the police pension fund or some similar fund; they upset a very ancient custom of protecting private property, for it has been held that a dog chained to a tree or doorway, so as to be unable to harm any one but a trespasser or thief, must also be muzzled; the work of dog catchers is harrowing to humane persons and either shocks or brutalizes children: the destruction of small animals tends to encourage official recognition of private societies to prevent cruelty; the payment of traveling expenses and treatment at institutes of a private nature is an extension of the degree of relief afforded to the indigent sick by the local government in the case of sickness and injury in general, and is a precedent for a form of paternalism which is regarded with disfavor by most citizens and political economists.

In spite of this popular feeling, a small but considerable minority contend that there is no such disease, that it is as much a myth as the influence of the "dog days," and their action is not now accepted by any scientific critic, although its popular acceptance is shown in the annual recrudescence of the

enforcement of the "dog laws." Hydrophobia, says this minority, is either hysteria or tetanus or some other form of infection. We can very readily dispose of the question of hysteria. Any disease may be hysterically imitated, and hysterical fear has occasionally produced death. In few other instances is the element of suggestion so active as in the case of dread of hydrophobia. The indefiniteness and length of the period of incubation and the almost complete limitation of symptoms to the neuromuscular apparatus predispose to hysterical mimicry. Therefore we must admit that even a fatal case of "hydrophobia" may be purely hysterical. On the other hand, to assign all reported cases to hysteria would be the height of folly. There can be no question as to the actuality of hydrophobia in the clinical sense; the real issue is as to whether we are dealing with a disease sui generis or one which is merely the manifestation under peculiar circumstances of an infection well recognized in general. While we might assume that the symptomatology of so called hydrophobia might be duplicated by infection with any one of several pyogens, the pneumococcus, Diplococcus intracellularis, etc., the only definitely established infection which could be considered as generally inclusive of the symptomatic type of hydrophobia is tetanus.

The late Dr. D. Hayes Agnew used to say that no one who had seen both tetanus and hydrophobia could confound them. Still, with all respect to this eminent authority, it must be borne in mind that even tetanus is a fairly rare disease. Very few men see more than single cases in a lifetime, and hardly ever any large series at once. Most physicians never see hydrophobia. The great majority of reported cases are unique experiences for the reporters, and only by great sacrifice of time and money could any one man acquire anything like the experience which the routine practitioner may have in most diseases. We think it must be admitted that, from the purely clinical standpoint, there is no greater difference between tetanus and hydrophobia than exists between different forms of tuberculosis, cerebrospinal meningitis due to any one bacterium, mild and "black" measles, etc. This is especially true when we consider that the very symptom which has given rise to the popular name of the disease and imitations of the barking and writhing of a mad dog are now generally regarded as hysterical obsessions, even if the attack itself is genuinely infectious.

From the pathological standpoint, the extreme rarity of an infection is an argument against its specificity, unless this rarity is explicable by artificial control, as in the case of smallpox, or by other factors, such as the relative degree of segregation of the originators and the limitations of exposure

of human beings, as in the case of equinia, anthrax, etc. The comparative rarity of tetanus has been regarded as well explained by the necessity of an hermetically sealed wound to insure anaerobic conditions, and it is altogether probable that, whether hydrophobia is tetanus or a distinct infection, the same requisite must be fulfilled. Still, hydrophobia is rare even as compared with tetanus. The latter, indeed, occurs rather frequently as a stable epizootic of a mild type. Hydrophobia, if it exists at all, is capable of infecting nearly every warm blooded animal, being by no means confined to the dog, and, in particular, it involves various wild types of canine animals which are decidedly gregarious. Indeed, the domestic dog is much more gregarious, or at least much more free to come in contact with other animals of its own species, than the horse and other domestic animals. Thus, if hydrophobia were a distinct disease and not an exaggerated type of tetanus or other infection, we should expect epizootics on a considerable scale, both in a state of nature and in that of domestication.

THE INTERNATIONAL TUBERCULOSIS EXHIBIT.

The size and generally meritorious character of the exhibit made in Washington in connection with the recent International Congress on Tuberculosis made it highly desirable that the exhibit should be brought to New York, for here it will probably be visited by many more persons even than were embraced in the throngs that viewed it in Washington during the three weeks that it was on view. There seems to have been no trouble about getting the consent of the exhibitors, foreign as well as American, but the raising of a certain sum of money for the purpose was found necessary. The amount was not large, and as we go to press we learn that it has been obtained, the city having made a generous appropriation toward it. We understand that an unexpended balance of several thousand dollars was left over from the Congressional appropriation for the expenses of the congress, and it would have been perfectly proper, we think, to apply that residue to aid in defraying the cost of the undertaking.

AGAIN THE DOCTOR IN GENERAL LITERATURE.

It is not for the first time that we now record our satisfaction at the incursion of Dr. Carl Beck, of New York, into the domain of general literature. He has recently produced a charming little book'

Sonnenblicke com laternischen Amerika, etc. Berlin. Leonhard

of travel in the West Indies and Central America. Dr. Beck's journey took him to Jamaica, Colombia, Panama, and Costa Rica, lands with which the people of the United States ought to be better acquainted. His narrative is illustrated with half tone reproductions of interesting photographs, and the text itself is very readable. The proofreading has not been all that might be desired, otherwise we should not find German custom carried to the extent of inserting a comma after the word voi in the hackneyed quotation Lasciate ogni speranza, voi The legend under a cut on the same ch'entrate. page (page 106) contains the expression "Santa Domingo," and so does the one under another cut on the opposite page.

Rews Atems.

Changes of Address.—Dr. D. S. D. Jessup, to 542
West One Hundred and Twelfth Street, New York; Dr. Charles H. Jaeger, to 471 Park Avenue, New York; Dr. G. H. Clapp, to 3808 Spruce Street, Philadelphia; Dr. William J. Dugan, to Suite 305 Flanders Building, Philadelphia; Dr. O. Kiliani, to 50 West Seventy-seventh Street, Manhattan Square Hotel, New York.

Medical Greek.—It is announced that a Greek translation is being prepared of Dr. Achilles Rose's book entitled Medical Greek.

Medical Greek

Personal.-Dr. John F. Erdmann has been appointed professor of surgery in the New York Postgraduate Medical School and Hospital, and has resigned his clinical pro-

The Health of Dr. William T. Bull.—As we go to press we regret to learn that the illness of this eminent New York users. Bull is not yet an old man, however, and it is to be hoped good ground for expecting his recover

Medical Society of the County of Richmond, N. Y .-The regular meeting of this society was held at the Staten Island Academy on Wednesday evening, October 14th. Dr.

Island Academy on Wednesday evening, October 14th. Dr. Anthony Bassler, of New York, read a paper entitled Early Diagnosis of Gastric Carcinoma, which was discussed by Dr. Patterson and Dr. Baldwin.

The Medical Society of the County of Ulster, N. Y., will meet in the City Hall, Kingston, on Tuesday, October 20th, at 2 p. m. Dr. Mark O'Meara will read a paper on The Present Status of the Treatment of Appendicitis, and Dr. Philip B. Callier will read a paper entitled Notes on Dr. Philip B. Collier will read a paper entitled Notes on the International Tuberculosis Congress.

The Medical Society of the Borough of the Bronx.—
At a stated meeting of this society, which was held on Wednesday evening, October 14th, the following papers were read: The Diagnosis and Treatment of Gastric and Duodenal Ulcers, by Dr. N. B. Van Etten; The Surgical Aspect of Gastric and Duodenal Ulcers, by Dr. Parker

Syms.

The International Tuberculosis Exhibit.—Arrangements have been made to have this exhibit brought to New ments have been made to have the efforts of Dr. Alfred Meyer, of 785 Madison Avenue, that the money necessary to carry out the plan was raised. Of the \$30,000 required, the city appropriated \$20,000, and the rest was obtained by private

Charitable Bequests .- By the will of George A. Cotton, the Samaritan Hospital, of Philadelphia, receives \$5.000 ton, the Samaritan Hospital, of Philadelphia, receives \$5,000 for the establishment of the Emma C. B. Cotton free bed. The Pennsylvania Asylum for Indigent Widows and Single Women, of Philadelphia, the Odd Fellows Home for Orphans, of Philadelphia, the Home for Aged and Indigent Odd Fellows, of Philadelphia, the Children's Seaside Home, of Atlantic City, and the Children's Country Week Association, of Philadelphia, receive \$5,000 each. The Masonic Home of Pennsylvania and the William L. Elkins Orphanage for Girls, of Philadelphia, are residuary legatees.

The Eastern Medical Society of the City of New York has made arrangements for a dinner and reception to be held at the Hotel Astor on the evening of Thanksgiving Day, November 26th. This society has an active member ship of over five hundred, and it is hoped that by this social gathering better fraternal relations will be promoted among the members

The Tri-County Medical Society of South Jersey, which is composed of physicians living in the counties of Gloucester, Salem, and Cumberland, will meet in annual session on Tuesday, October 27th, at 1:30 p. m., in Woodbury, N. J. Dr. George Evans Reading, the secretary of the society, announces that a full attendance of members

is desired at this meeting.

Denver Physicians Accused of Failing to Report Infectious Diseases.—It is reported that as a result of an investigation being made by the local health authorities into the typhoid fever conditions prevailing in Denver, warrants have been issued for sixty physicians, who are charged with failing to make proper reports of typhoid fever and other infectious diseases.

Contagious Diseases in Chicago.-During the week ending October 3, 1908, there were 333 cases of contagious diseases reported to the Department of Health, as follows: Diphtheria, 100 cases; scarlet fever, 57 cases; measles, 12 cases; chickenpox, 7 cases; pneumonia, 15 cases; typhoid fever, 100 cases; whooping cough, 20 cases; tuberculosis, 19

ses; diseases of minor importance, 3 cases.

Philadelphia County Medical Society.—The Central Branch of this society held a meeting on Wednesday evening, October 14th. Dr. Achilles Rose, of New York, read a paper on Atonia Gastrica, and demonstrated a special method of treatment. Dr. T. Turner Thomas read a paper entitled Habitual or Recurrent Dislocation of the Shoulder, and reported a successful operation, exhibiting the patient.

The New York Obstetrical Society .-- At the regular The New York Obstetrical Society.—At the regular meeting of this society, held on Tuesday evening. October 13th, the following officers were elected for the ensuing year: President, Dr. J. Clifton Edgar; first vice-president, Dr. William S. Stone; second vice-president, Dr. Joseph Brettauer; recording secretary, Dr. Howard C. Taylor; corresponding secretary, Dr. Robert L. Dickinson; treasurer, Dr. J. Lee Morrill; editor of transactions. Dr. Brooks H. Wells; pathologist, Dr. Franklin A. Dorman.

Sir Arthur Vernon Macan, M. B., died in Dublin on Saturday, October 2d, 2st the age of sixtynfays wears. He

Saturday, October 3d, at the age of sixty-five years. He was one of the best known Irish physicians, and his fame as a gynacologist was well known outside of his own country. He was a Fellow of the Royal College of Physicians of Ireland, and was at one time president of that body. During his presidency of the college he was knighted by the King. For many years he filled with distinction the position of King's Professor of Midwifery in Trinity College, Dublin, and both as an author and as a lecturer was held high esteem.

Vital Statistics of New York.—During the week ending October 3, 1908, there were reported to the Department of Health of the City of New York 1,200 deaths from all causes, of which 633 were in Manhattan, 104 in the Bronx, 385 in Brooklyn, 50 in Queens, and 28 in Richmond. The annual death rate in 1,000 of population was 14.40 in Man-Administration of the Bronx, 13.45 in Brooklyn, 11.22 in Queens, 19.05 in Richmond, and 14.15 in the whole city. The total infant mortality was 385; 311 under one year of age, and 74 between one and two years of age. There were 121 still births. Five hundred and sixty-nine marriages and 323 highs were recorted during the week.

2,423 births were reported during the week.

Report of the Committee of the Neurological Society on Dr. Denslow's Paper on Locomotor Ataxia.— The committee appointed by the president of the New York Neurological Society to report upon the circumstances attending the reading of a recent paper on locomotor ataxia before the New York Academy of Medicine have submitted the following report: "Your committee expresses disapproval of the occurrences following the reading of Dr. Denslow paper. It is the belief of your committee that papers which express radical views should be freely discussed at the time of their presentation, and that every effort should be made to prevent the publication in the newspapers of communica-tions which set forth promise of the cure of diseases which are generally held to be incurable. Your committee further believes that before such cures are exploited they should be submitted to the most rigid investigation.

The Health of Pittsburgh.-During the week ending September 12, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Pittsburgh: Chickenpox, I case, o deaths; typhoid fever, 29 cases, 8 deaths; scarlet fever, 18 cases, I death; diphtheria, 23 cases, I death; measles, 9 cases, 0 deaths; whooping cough, 2 cases, 0 deaths; pulmonary tuberculosis, 26 cases, 17 deaths. The total deaths for the week numbered 186 in an estimated population of 565,000, corresponding to an annual death rate of 17.06 in 1,000 of population. During June there were 597 deaths, corresponding to an annual death rate of 12.68 in 1,000 of population.

Buffalo Academy of Medicine.—A meeting of the Section in Surgery will be held on Tuesday evening, October 20th. The programme will consist of a "symposium" on gonorrhœa, and papers on the subject will be presented as follows: Morphology of the Gonococcus with its Differentiation by Staining from Other Urethral Bacteria, by Dr. A. A. Thibaudeau; The Treatment of Acute Gonorrhead Urethritis in the Male, by Dr. David E. Wheeler; The Treatment of Chronic Gonorrheal Urethritis and its Complications in the Male, by Dr. Nelson W. Wilson; The Treatment of Gonorrhœa in the Female, by Dr. Earl P. Lothrop; Prophylaxis of Gonorrhœa, by Dr. James A.

Tuberculosis Prizes Awarded.—The awards of the prizes to the exhibitors at the Sixth International Congress on Tuberculosis recently held in Washington, D. C., have been announced. The cash prizes were awarded as follows:
To the Woman's National Health Association of Ireland,
\$500; New York Charity Organization Society, \$500;
White Haven, Pa., Sanatorium, \$500; the Brompton, England Jand, Hospital Sanatorium, \$500; the Henry Phips Dispensary, Baltimore, \$1,000; the Brompton, England, Hospital, \$1,000; the Pennsylvania Society for the Prevention of Tuberculosis, \$100; the Verein Bekampfung der Schweinschucht, \$100. In addition to the cash prizes numerous gold and silver medals were awarded.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De partment of Health for the following statement of new cases and deaths reported for the two weeks ending October

| 10, 1900. | | | | |
|--------------------------|--------------|---------|---------|--------|
| | —Oct. 3— | | Oct. 10 | |
| | Cases. | Deaths. | Cases. | Deaths |
| Tuberculosis palmonalis | 481 | 153 | 597 | |
| Diphtheria | 21111 | 21 | 2 1 | 18 |
| Measles | 96 | | 68 | |
| Scarlet fever | 102 | 4 | 146 | . 4 |
| Smallpox | | | | |
| Varicella | | | 10 | |
| Typhoid fever | | to | 100 | 1.2 |
| Whooping cough | 2.1 | | 3.3 | 5 |
| Cerebrospinal meningitis | 7 | | 3 | ī |
| | | | | _ |
| T. stell. | 7 11 17 17 1 | | | 6 |

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday, October 19th, at 8:30 p. m. Neurasthenia and Its Treatment is the subject selected for consideration.. Dr. Edward D. Fisher will read a paper on the Ætiology, Pathology, and Course of Neurasthenia. Dr. A. D. Rockrathology, and course of Neurastnema. Dr. A. D. Rock-well will read a paper on True Neurasthenia; its Nature and Treatment. Dr. Sinclair Tousey will read a paper dealing with the treatment of neurasthenia by high frequency currents and the ultraviolet ray, and the treatment of the disease by static electricity will be the subject of a paper by Dr. John Herman Branth. Among those who will take part in the discussions are Dr. George W. Jacoby, Dr. W. M. Leszynsky, Dr. Joseph A. Kene, Dr. Arthur C. Brush, Dr. W. B. Pritchard, and Dr. Joseph Fraenkel.

Brush, Dr. W. B. Pritchard, and Dr. Joseph Fraenkel.

Queens-Nassau Medical Society.—A special scientific meeting of this society was held at the Nassau County Court House, Mineola, on Saturday afternoon, October 10th. Physicians of both counties were present. A very interesting and valuable paper was presented by Dr. John A. Bodine, of the New York Polyclinic, on The Scope of Local Anresthesia in Surgery, in which Dr. Bodine advocated a much larger use of local anæsthesia than was usual. Dr. A. Bassler, of New York, read a paper entitled The Farly Diagnosis of Gastric Carcinoma and showed the im-Early Diagnosis of Gastric Carcinoma, and showed the importance of attention to objective symptoms which might be discovered before any subjective symptoms were present The attendance at the meeting was less than expected, and the character of the papers was such that those who were not present missed much. The regular semiannual meeting of the society will be held in Jamaica in November.

The Mortality of Chicago.-During the week ending October 3, 1908, there were reported to the Department of Health of the City of Chicago 518 deaths from all causes, as compared with 583 for the preceding week, and 565 for the corresponding period in 1907. The annual death rate in 1,000 of population was 12.47. Of the total number of deaths 126 were of children under five years of age, 60 of deaths 120 were of children under five years of age, 50 of children between one and five, 35 of persons between five and twenty years of age, 105 between twenty and sixty years of age, and 102 over sixty years of age. The princicipal causes of death were: Apoplexy, 12 deaths; Bright's disease, 30 deaths; bronchitis, 10 deaths; consumption, 57 deaths; cancer, 27 deaths; diptheria, 10 deaths; heart diseases, 41 deaths; intestinal diseases, acute, 112 deaths; measles, 11 death; persons diseases, 12 deaths; neurons deaths; n measles, I death; nervous diseases, I3 deaths; pneumonia, 4I deaths; scarlet fever, 7 deaths; suicide, II deaths; typhoid fever, 18 deaths; violence (other than suicide), 35 deaths; all other causes, 99 deaths.

Scientific Society Meetings in Philadelphia for the Week Ending October 24, 1908:

Monny, October 10th Medical Jurisprudence Society;
Northeast Branch, Philadelphia County Medical

Society.

Tuesday, October 20th.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

Wednesday, October 21st.—Philadelphia County Medical Society (business meeting open to members only); Section in Otology and Laryngology, College of Physicians; Association of Control Franklin Institute Association of Clinical Assistants, Wills Hos-

THURSDAY, October 22d.—Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute.

FRIDAY, October 23d.—South Branch, Philadelphia County Medical Society; Northern Medical Association; Philadelphia Neurological Societ

delphia Neurological Society. The Connecticut River Valley Medical Society met recently at Northfield, Mass. Dr. F. J. Canedy, of Shelbourne Falls, Mass., presided at the morning session. and Dr. E. R. Campbell, of Bellows Falls, Vt., occupied the chair during the afternoon session. The programme included the following papers: Pseudoangina Pectoris, by Dr. George G. Sears, associate professor of clinical medicine, Harvard Medical School; Cancer in and about the Mouth, by Dr. Harry Homer Germain, associate professor of surgery, Tufts Medical School; Pericarditis and its Treatment, by Dr. Hermon F. Vickery, instructor in clinical medicine, Harvard Medical School; A Consideration of some of the points most commonly met with in the Study and Treatment of the so called Rheumatoid Diseases, by Dr. Joel E. Goldthwaite, instructor in orthopædies, Harvard Medical School; Some Aspects of Psychotherapy, by Dr. John Jenks Thomas, assistant professor of neurology, Tufts Medical School; Some of the Newer Practical Things which have come out of the Laboratory, by Dr. Timothy Leary, professor of pathology and bacteriology, Tufts Medical

The Health of the Canal Zone.—During July the Sanitary Department of the Isthmian Canal Commission reported 5 deaths from typhoid fever, 12 from æstivoautunnal malaria, 41 from clinical malaria, 3 from hæmoglobinuric fever, 2 from diphtheria and croup, 1 from international control of the co fluenza, I from amœbic dysentery, 12 from clinical dysentery, 2 from beriberi, 6 from purulent infection and septicæmia, 21 from tuberculosis of the lungs, 2 from general tuberculosis, 3 from syphilis, 4 from cancer, 1 from cerebrospinal meningitis, 3 from tetanus, 15 from pneumonia, 5 from bronchopneumonia, 25 from diarrhœa and enteritis, under two years of age, 1 from puerperal septicæmia. The total deaths numbered 295, in a population of 121,607, corresponding to an annual death rate of 29.11 in 1,000 of popu-The death rate among the white employees was 12.69, among the black employees 15.43; among all the employees of the Canal Commission, excluding the civil population, the death rate was 14.68 in 1,000. The morbidity rate was 2,01 in 1,000 employees. Four hundred and forty-three pounds of quinine were issued during the month. The chief branch of sanitary work in the city of Panama is that which aims to prevent the propagation of plague should it be once introduced into that city. To that end the killing of rats is carried on by every known method with some degree of success. The advent of a few cases of rabies caused a campaign of extermination of stray dogs, so that during the month 337 such animals were killed.

Society Meetings for the Coming Week:

MONDAY, October 10th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

Tuesday, October 20th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association.
Wednesday, October 21st.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery: Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey TUESDAY, October 20th.-New York Academy of Medicine

New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, October 22d .- New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brooklyn Pathological Society; Hospital Graduates Club, New York; New York Celtic Society.

Friday, October 23d—Academy of Pathological Science, New York; New York Society of German Physicians:

New York, New York Society of German Physicians: New York Clinical Society. SATURDAY, October 24th.—West End Medical Society, New York; New York Medical and Surgical Society; Har-vard Medical Society, New York: Lenox Medical and Surgical Society, New York.

Meetings of Sections of the New York Academy of Medicine.—The Section in Ophthalmology will hold a clinical meeting on Monday evening, October 19th. After the presentation of a number of interesting cases by Dr. R. G. Reese, Dr. J. R. Shannon, and Dr. E. L. Oatman, Dr. J. Herbert Claiborne will read the paper of the evening on Acute Retrobulbar Optic Neuritis, which will be followed by a general discussion.

The Section in Medicine will meet on Tuesday evening, Cotober 20th. Dr. H. S. Patterson will demonstrate the reaction to Moro's tuberculin salve. Dr. Wilhelm Falta, of Professor Van Noorden's Clinic, Vienna, will read a paper entitled The Relation of the Internal Secretions to Diabetes Mellitus. Among those who will take part in the discussion are Dr. S. J. Meltzer, Dr. James Ewing, and Dr.

Graham Lusk.

The Section in Genitourinary Surgery will hold a meeting on Wednesday evening, October 21st. wood will present a specimen of tuberculous kidney; Dr H. H. Vineberg will present a specimen of encysted calculus from a female bladder; and Dr. Martin W. Ware will present a specimen of encysted calculus from a male bladder. Dr. Ellice McDonald will read a paper entitled Bladder Lesions following Pelvic Operations upon Women, including the report of ten cases. Dr. Leo Buerger will demonstrate, by request, a new irrigating indirect observation and deable, westered exthatorizing explosions a metal-al-indouble ureteral catheterizing cystoscope embodied in a single instrument.

single instrument. The Section in Obstetrics and Gynaecology will meet on Thursday evening, October 22d. Dr. Abram Brothers will present a report of the removal of two hundred and five gallstones simultaneously with operation on cervix uteriand adnexa. Dr. Sidney S. Graber will read a paper on Vaginal Fixation, and a paper on Pollakuri in Women will be read by Dr. Harry S. Furniss.

Medical Society of the State of New York.—The First District Branch of the Medical Society of the State of New District Branch of the Medical Society of the State of New York, comprising the counties of Dutchess, New York, Orange, Putnam, Rockland, and Westchester, will hold its second annual meeting on Wednesday, October 21st, at the Yassar Brothers Institute, Poughkeepsie, N. Y. The first session will be held at 10 a. m. After the transaction of routine business, which will include the election of officers, the following papers will be read: A Successful Demonstration of the Problem of Obtaining Sterile Cow's Milk, by Dr. John T. Howell, of Newburgh; A Campaign against Tuberculosis, by Dr. S. E. Getty, of Yonkers; Some Observations on the Expert in Insanity upon the Witness Observations on the Expert in Insanity upon the Witness Stand and Some Causes of Insanity by Dr H Fruest

Schmidt, of White Plains; The Control of Ophthalmia Neonatorum, by Dr. John T. Wheeler, of Chatham; Anterior Poliomyelitis, by Dr. M. W. Barnum, of Ossining; The Sequlæ of Peritonitis and Postoperative Sequlæ, by Dr. Joseph Price, of Philadelphia. At the afternoon session which receives the Challed Price. Dr. Joseph Price, of Philadelphia. At the afternoon session, which meets at 2 o'clock, the programme includes the following papers: Some Nose, Throat, and Ear Symptoms of Significant Interest in General Practice, by Dr. D. S. Dougherty, of New York; The Prevention and Preoperative Treatment of Mastoiditis, by Dr. W. Sohier Bryant, of New York; The Need for the Correction of Errors of Refraction in Children, by Dr. Frank Van Fleet, of New York; The Detection and Treatment of Abnormal Blood Pressure, by Dr. Louis F. Bishop, of New York; The Prognosis and Treatment of Abnormal Blood Pressure, by Dr. Ezbert Le Fevre, of New York; The Senile Heart, by Dr. Egbert Le Fevre, of New York; The Senile Heart, by Dr. L. C. Wood, of Poughkeepsie. In the evening the annual banquet of the Medical Society of the County of Dutchess will be held at the Nelson House. Dr. S. W. S. Toms, of Nyack, is president of the society, Dr. C. E. Denison, of New York, is secretary, and Dr. N. F. Curtis. of White Plains, is treasurer.

The Sixteenth International Medical Congress.-Ar rangements are being made for this meeting, which is to be held in Budapest, August 29 to September 4, 1909, and the committee wishes to remind the medical profession that contributions to the congress must be announced to the sec contributions to the congress must be announced to the secretary before January I, 1909. Manuscripts should be in the hands of the committee by January 31, 1909. Attention is also called to the fact that the time allowed for the reading of a paper is not more than twenty minutes. The request is made that manuscripts be clearly written, as the proofs are to be corrected at the office of the general secretary. Copies of manuscripts will be returned by July 31, 1909. The general secretary of the congress is Professor Emil Grosz, M. D., Budapest, VIII., Esterhazy-utcza 7. Emil Grosz, M. D., Budapest, VIII., Esterhazy-utcza 7. Blank forms of application for membership to the congress and for the presentation of papers can be obtained from the chairman of the American committee, Dr. J. H. Musser. 1927 Chestnut Street, Philadelphia. The American committee is composed of the following members: Dr. John H. Musser, of Philadelphia, chairman; Dr. Herbert L. Burrell, of Boston, president of the American Medical Association; Colonel W. M. Gorgas, United States Army, president elect of the American Medical Association; Dr. Robert M. O'Reilly, Surgeon General of the United States Army; Admiral P. M. Rixey, Surgeon General of the United States Public Health and Marine Hospital Service; Dr. Frederick Forchheimer, of Cincinnati; Dr. George H. Simmons, of Chicago; Dr. Richard Mills Pearce, of New York; Dr. Reginald H. Fitz, of Boston; Dr. R. Matas, of New Orleans; Dr. William H. Welch, of Baltimore; Dr. F. Fremont Smith, of Washington, D. C.; Dr. John A. Witherspoon, of Nashville; Dr. C. H. Frazier, of Baltimore: Dr. F. Fremont Smith, of washington, Dr. C.; Dr. John A. Witherspoon, of Nashville; Dr. C. H. Frazier, of Philadelphia; Dr. E. G. Janeway, of New York; Dr. George M. Kober, of Washington, D. C.; Dr. Ramon Gui teras, of New York; Dr. Grover W. Wende, of Buffalo: Dr. Howard A. Kelly, of Baltimore; Dr. Arthur D. Bevan, Ch. Chicago, Dr. Stockton, of Ruffalo: Dr. teras, of New York; Dr. Grover W. Wende, of Buffalo: Dr. Howard A. Kelly, of Baltimore; Dr. Arthur D. Bevan. of Chicago; Dr. Charles G. Stockton, of Buffalo; Dr. Joseph D. Bryant, of New York; Dr. J. Riddle Goffe, of New York; Dr. W. E. Fischel, of St. Louis; Dr. John F. Binnie, of Kansas City; Dr. G. C. Huber, of Ann Arbor; Dr. George Dock, of Ann Arbor; Dr. W. H. Carmalt, of New Haven; Dr. Samuel D. Risley, of Philadelphia; Dr. James E. Newcomb, of New York; Dr. James McBride, of New Haven; Dr. Samuel D. Risley, of Philadelphia; Dr. James E. Newcomb, of New York; Dr. James McBride, of Los Angeles; Dr. John B. Murphy, of Chicago; Dr. F. W. Westbrook, of St. Paul; Dr. H. Moffatt, of San Francisco; Dr. James B. Herrick, of Chicago; Dr. Charles G. Kerley, of New York; Dr. M. H. Richardson, of Boston; Dr. A. Jacobi, of New York; Dr. S. J. Meltzer, of New York; Dr. Charles A. L. Reed, of Cincinnati; Dr. Frank Billings, of Chicago; Dr. H. Sewall, of Denver; Dr. William J. Mayo, of Rochester, Minn.; Dr. Victor C. Vaughan, of Ann Arbor; Dr. George W. Crile, of Cincinnati; Dr. George Ben Johnston, of Richmond, Va.; Dr. E. L. Trudeau, of Sarnanc, N. Y.; Dr. James Tyson, of Philadelphia; Dr. Hobart A. Hare, of Philadelphia; Dr. Walter James, of New York; Dr. L. S. McMurtry, of Lonieville, Dr. F. V. Vander Vect, of Vibany, N. Y. St. Vander Vect, of Vibany, N. Y. St. Vander Vect, of Vibany, N. Y. Y. Vander Vect, of Vibany, N

Dith of Current Miterature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

October 8, 1908.

Tumors of Adrenal Origin, with Particular Reference

to Hypernephroma of the Kidney,
By Herbert C. Moffitt.
The Relation of Carcinoma of the Corpus Uteri to
Fibroids,
Fracture of Lower Epiphysis of the Tibia,
By Frederic S. Coollinge.

1. Hypernephroma of the Kidney.-Moffitt gives the following most important points in diagnosis of hypernephroma: I. Hæmaturia is a common symptom and may often be the first. There may be long intervals between attacks of bleeding, or recurrences every few days or weeks. Pain is frequently an accompaniment, and may be exactly that of renal colic, or the bleeding may be painless, without cause and only noticed by accident. The physician should regard every hæmaturia with suspicion, and try all means to discover the cause; only in this way can mistakes be avoided. The bleeding may be only a few drops, or profuse and deadly. 2. Pain may also be an early symptom. Like hæmorrhage it may long precede other symptoms or sepsis. Severe pain may accompany hæmaturia, or may be due to hæmorrhages into the tumor, or even to congestion. The pain may be local, and is then of great value in determining the affected side, or it may be referred to the epigastrium or to the sacrum; it may radiate in the distribution of the lumbar or sacral plexus, or it may be referred to distant parts. 3. The tumor may vary greatly in size and rapidity of growth. It may be present for years without giving trouble, and may suddenly assume a malignant character. 4. Metastases and their peculiarities have frequently been referred to. They are most often found in the lungs, liver, and bones. The peculiarities of bone metastases in adrenal tumors in childhood have already been illustrated. Pulsating bone tumors should arouse suspicion of metastases from either adrenal or thyreoid. 5. Pigmentation has been observed in but few cases of hypernephromata. 6. Trophic changes. Abnormal development of genitalia or of general overgrowth associated with tumors of the adrenals in childhood may be found. Hypertrichosis has been observed in both children and adults. 7. The urine may be normal throughout years despite the presence of a renal tumor. A few red cells may appear after manipulation of the tumor, or may persist during the interval between attacks of hæmaturia. Albumin may be caused by inflammatory changes in the neighborhood of the tumor or may be due to transudation from tumor masses projecting into the renal

2. The Relation of Carcinoma of the Corpus Uteri to Fibroids.—Williams concludes that there is a distinct relationship between carcinoma of the corpus uteri and fibromyomata, and that this relationship probably lies in certain common etiological conditions. The predisposition of fibroids to become complicated with cancer does not constitute an indication for their routine removal as soon as discovered, providing the patient can be kept under close observation, but any marked increase in the loss of blood from a fibroid, or the appearance of any vaginal discharge in the intervals between the hæmorrhages should be regarded as suggestive of the development of carcinoma. In a fibroid where either of these symptoms is present an immediate curettage should be performed in order that the condition of the endometrium may be examined, even if a radical operation has been decided upon. Every uterus removed for fibroids should be immediately opened by an assistant and the endometrium inspected to guard against possible oversight of a malignant process. In all cases of fibroids complicated by adenocarcinoma of the corpus a complete removal of the uterus including the cervix is the

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

I. Chronological and Anatomical Age in Early Life, By THOMAS MORGAN ROTCH. 3. Idiopathic Multiple Hæmorrhagic Sarcoma (Kaposi),
By David Lieberthal.

The Treatment of Strictures of the Nasal Duct with Lead Styles,

The Quantity and Quality of Breast Milk during the First Two Weeks of the Puerperium,

The Breast Milk Problem, The Breast Milk Problem,
Fallacious Standards Employed in Artificial Infant
Feeding,
The Gospel of Top Milk,
By J. Ross SNYDEK.
By J. Ross SNYDEK.
By J. Ross SNYDEK.
By J. J. Ross SNYDEK.

Feeding,
The Gospel of Top Milk,
High Fat Percentages in Infant Feeding,
By Thomas S. Southworth.
Hereditary Predispositions: Their Relation to Insanity
and Some of Our Social Problems,
By Eugene Cohn.

10. Perithelial Sarcoma of the Uterus, By W. A. NEWMAN DORLAND.

3. The Treatment of Strictures of the Nasal Duct with Lead Styles .- Moulton says that in selecting styles instead of cannulæ for permanent dilatation, one is influenced by the fact that experience has proved that cannulæ quickly become clogged with mucus and pus, becoming sources of infection, and at the same time, ceasing to act as drains. This can not be avoided, even by almost daily removal and cleansing, which process is even more irksome to both patient and surgeon than probing. Experience, on the other hand, proves that with a style properly inserted, secretions do not accumulate, the tears readily find their way along the sides of the style into the nose, and the patient need not be seen oftener than once a month. The reasons for preferring lead as the material out of which to make the styles are: (1) It is a pliable material; (2) it is easily cut, smoothed, and adapted to each individual case by the surgeon himself; (3) it is comfortable to the patient; (4) it is not acted on by the secretions: (5) it is cheap and easily obtained. On the other hand the other materials available are all objectionable. Aluminum soon becomes corroded, silver also, in time. While this objection does not apply to gold, yet gold is expensive and hard to adjust on account of its rigidity. The proper preparation and placing of the styles are essential to success, and close attention must be paid to this important, if simple, technique. After the canaliculus has been cut and the duct dilated, at one sitting or several, to Bowman's No. 5, or even to No. 8, if possible, the depth of the duct is measured on the probe, and a piece of lead wire is cut

to the corresponding length, taking off about one eighth of an inch from the lower end to prevent it from resting on the floor of the nose and allowing from one fourth to three eighths of an inch extra length on the upper end to be bent over at a little more than a right angle to prevent its slipping down out of reach. The main shaft of the style should be curved to fit the canal, as determined by the bend of the probe which has been passed. The shoulder or upper end should have a curve slightly down and forward so that it will lie in the slit canaliculus, out of view and without tension. The tip of this upper end must not turn backward toward the eyeball. If it does it will cause trouble by touching the eyeball or by compressing the tissues of the eyelid between it and the eyeball. There should be no tension. If the end sticks up a little, it may be bent down without withdrawing the style. The style will partly adapt itself to the canal owing to its flexibility, but if the fit is not good, it must be withdrawn, remolded, and reinserted till it occupies the proper position without tension.

6. Fallacious Standards Employed in Artificial Infant Feeding.—Pisek speaks of the so called standards that are applied in artificial infant feeding. He says that it is an accepted standard that Nature should be followed. What is following Nature? Some say one thing and some another. The simplest standard heard of is, give the infant milk. If its mother's milk fails, give it cow's milk, goat's milk, or ass's milk, but follow Nature and give milk. The next advanced standard is that all milks are composed of the same ingredients, but in different proportions, and changing the percentage composition will practically convert the milk of one kind of animal into that of another. Another standard is that human milk is composed of fats, carbohydrates, proteids, mineral matter, and water, and the infant's food should contain these ingredients in the same proportions. A favorite standard has been that cow's milk was acid and human milk alkaline, and therefore five per cent. of lime water should be added to cow's milk to give it the same reaction. A newer standard is that the difference between human milk and cow's milk is due to the fact that they contain casein or caseinogen and lactalbumin in different quantities and relative proportions, and that these relative proportions are definite for each milk. It is a widely accepted standard that human milk is sterile and cow's milk contains bacteria, and therefore the cow's milk should be sterilized or pasteurized before being given to infants. Another standard is that of gain in weight of the infant caused by a given food. A recent standard is that the infant needs food that will produce a certain number of calories, depending on the size of the infant. The standard that human milk is composed of fats, carbohydrates, proteids, mineral matter, and water, and that the infant's food should contain these ingredients in the same proportions, is too broad, as under it any form of food could be emploved, meat, vegetables, bread, etc., as all of these foods contain fat, carbohydrates, proteids, mineral matter, and water. This standard merely states that the infant's food should contain the elementary food substances without which life could not be maintained. The standard that as human milk is alka-

line and cow's milk acid, five per cent. of lime water should be added to cow's milk for infants, fails in practice, for five and ten per cent. of lime water is recommended to be added to diluted milk, which oftentimes makes the amount added to the whole milk 100 per cent. or more. Lime water or other alkali has a specific action on the milk, altering or preventing its curding in the stomach by rennet or pepsin. The practice may be very good, but the standard is worthless and masks the true purpose and value of lime water in infant feeding. The standard that was brought forward after the weakness of many of the previous standards was recognized, viz., that it was the relative proportions of casein or caseinogen and lactalbumin that made the difference between milks of different species, is not undisputed. In the first place, casein or caseinogen does not seem to be the same for each kind of milk, and then, there is no constant ratio between casein and lactalbumin in cow's milk as was supposed. The quickest and surest way to satisfy oneself as to whether the caseins in human milk and cow's milk are the same is to add rennet and a very small quantity of dilute acid to specimens of human milk and cow's milk and note the resulting curds. The standard that as human milk is sterile and cow's milk contains bacteria, cow's milk used for infants should be sterilized by heating, cannot be maintained, for we know of the use of buttermilk made by adding lactic bacteria to milk, and it is lauded as a remedy for intestinal disorders for which sterilized milk was thought to be ideal at one time; and even giving bacteria to infants has been reported as successful. That the food must not contain bacteria is a standard that evidently cannot be maintained.

7. The Gospel of Top Milk .- Jacobi states that artificial food is not equivalent to woman's milk. Cow's milk cannot be changed into woman's milk. The efficiency of alleged improvements in artificial feeding is liable to be overestimated and not always received with sound criticism. The advice to add cow's milk fat to cow's milk in order to make it more nutritious or to make its casein more digestible, is dangerous. Between the fats of the woman's and of the cow's milk there are essential physical and chemical differences. The danger of overfeeding with fat can be obviated by reducing its proportion in milk mixtures to two or two and one half per cent. Cereal decoctions improve the nutrient value and the digestibility of a milk mixture. If ever the baby, while feeding well, does not increase in weight, the intelligent practitioner may be obliged to add carefully and slowly to the caloric value or general nutritiousness of the food mixture by increasing either the cereal decoction or the fat percentage. Feeding cannot be regulated by mathematics so well as by brains and by the wants of the individual baby. The top milk gospel is a heresy.

MEDICAL RECORD

October 10, 1008

- The Duties of the Medical Profession to the Public. By M. Auen Starr.
- 2. The Present Status of the Radical Mastoid Operation for the Cure of Chronic Purulent Ottis Media,

 By Wendell C. Phillips.
- 3. Hydrotherapy in the Treatment of the Insane,
 By George Stockton.

4. A Contribution to the Study of the Diathetic States,

By C. T. Nesbitt.
Cephalocele, with a Report of Three Cases in One
Family,
By John Phillips. Family, By John Phillips.
Treatment of Secondary Anamia of Tuberculosis

with Hypodermic Injections of Iron,

By LEROY S. PETERS. 2. The Present Status of the Radical Mastoid

Operation for the Cure of Chronic Purulent Otitis Media.-Phillips remarks that the radical operation is indicated: 1, When a permanent cessation of the purulent process has not been effected by prolonged local intratympanic treatment, combined if necessary with such minor operation as removal of granulations, enlarging perforation, etc. When the cure has not been effected by the removal of necrosed ossicles and the curettage of the middle ear. 3, When acute symptoms of mastoiditis are present. 4, When a sudden cessation of the pus discharge produces vertigo, pain, or other unusual symptoms. 5, The appearance of facial paralysis during the course of chronic purulent otitis media. 6, Attacks of vertigo, indicating that the necrotic process involves the labyrinth. 7, In all cases where intracranial or lateral sinus involvement has already appeared. 8, Where there are positive symptoms of cholesteatoma in the mastoid antrum. 9, Where there are fistulous openings in the cortex of the mastoid process or in the osseous canal wall. 10, Whenever extreme depression or other symptoms of disturbed mentality accompany the disease. The operation is contraindicated: I, When the purulent process is tuberculous and accompanied by advanced general tuberculosis. 2, In advanced pernicious anæmia or albuminuria and in cachectic diabetes. 3, It is usually contraindicated in young children. 4, In all cases where the disease is confined to the ossicles and tympanic cavity. 5, In adults who have scanty otorrhœa without odor, with improper opening of the drum membrane, behind which are retained masses of secretion. 6, In all cases where it is possible to effect a cure by any of the other methods described. It will be thus seen that the percentage of cases which should be subjected to the radical operation is not large. It is also true that during the past five years too little discrimination has been employed in the selection of suitable cases for the operation. This should in no wise lead us to belittle this most important surgical procedure, for when properly performed in severe and dangerous cases of chronic otitis media it is the only safe and life saving procedure known to surgery. His reasons for advising against performing the radical operation in young children are: 1, The disease is rarely of sufficient extent to require it. 2, The disease usually yields to local treatment providing diseased adenoids and tonsils are removed. 3, By establishing free drainage, through a large perforation, with well maintained local treatment, a cure usually results. 4, It is better to place reliance upon these measures, aided by the marvelous recuperative powers of youth, than partially or wholly to destroy his functions of hearing with all its train of misfortunes to happiness, education, the enjoyment of sounds, musical and otherwise, and finally to gaining a livelihood. He has always opposed performing double radical op-

crations in children except to save life.

4. A Contribution to the Study of the Diathetic States.-Nesbitt says that every civilized individual has inherited some depraved nutritional tendencies. The majority are so profoundly affected that the stress of modern life, together with the effects of infection, dissipation, and injury, make their premature destruction inevitable. If it is possible to correct these nutritional faults while the individual is in the formative period, it is the plain duty of every physician to study the heredity of every child in his clientèle, and to see that each has the best opportunity to attain his highest usefulness and greatest longevity. The author has collected forty-seven cases of cancer, sixteen patients having cancerous progenitors; thirty-five cases of chronic nephritis, fourteen patients inheriting the tendency to nephritic disease from direct progenitors; thirty-eight cases of diabetes mellitus, thirteen patients having diabetic heredity. He concludes that the development of malignant neoplasms is furthered, if not caused, by the admixture of the two diathetic states in procreation. The prepon-derance of scrofulosis in the diathetic history is probably essential to the production of cancer. The great majority of cancerous individuals are the result of procreation by two, one of whom is arthritic and the other scrofulous. Transmission of diatheses is most often from father to daughter, and from mother to son, as has been determined with reference to other hereditary transmission. Preponderance of arthritism over scrofulosis in the ancestry of an individual is a possible factor in the production of renal cancer, when the individual has had a cancerous ancestor. Intensification of the arthritic diathesis through hereditary transmission is the most probable predisposing cause of chronic progressive renal degeneration. Alcoholism in the ancestral and personal history of the individuals who are essentially arthritic is the most important precipitating cause of chronic nephritis. It is possible that alcoholism and renal disease combined in the heredity of an individual predispose to the parenchymatous type of nephritis. The other ætiological factors recognized in the production of chronic nephritis are secondary in importance, and contribute in a general way only to the development of the disease. Scrofulosis is important in the ætiology of nephritis as a remotely contributing factor. Diabetes mellitus is possibly the result of the transmission of the arthritic diathesis through several generations in which there has been little or no marital admixture of scrofulosis. Scrofulosis is unimportant in the ætiology of this disease. The production of diabetes mellitus in the majority of instances depends upon the further development of nutritional fault that has been inherited.

BRITISH MEDICAL JOURNAL.

September 26, 1008.

Some Forms of Cardiac Arrhythmia from the Point of View of the Myogenic Theory,
By W. J. Fenton,

Some Requirements of Modern Surgery,

Some Requirements of Modern Surgery,
By C. H. Hough.
Fatty Liver in Kala Azar,
Some Cases of Vaccine Therapy,
A Method of Operating in the Air Distended Urethra,
By W. W. Powell,

(The Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Laryngology, Rhinology, and Otology.
President's Address, By G. Wilkinson.
Discussion on the Treatment of Chronic Inflammatory Conditions of the Oropharynx,

Introduced by P. McBride. Paralysis of the Sixth Cranial Nerve in Aural Disease, g. A New Operation for Depressed Fracture of the Nose,

10. Cervical Tumors Simulating Enlarged

ciated with Laryngeal Paralysis, By A. Wylle. The Use of Bougies for the Dilatation of the Infundi-By D. GRANT. bulum of the Frontal Sinus, 12. Some Points on the Anatomy and Surgery of the Ton-

By J. H. NEIL Some Experiences in the Direct Examination of the Larynx, Trachea, and Œsophagus, By A. B. Kelly.
 Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy (a Demonstration), By E. WAGGETT.
 The Development of the Middle Ear, By T. GUTHRIE.
 Accessory Air Cells in the Sæptum Nasi.

By C. A. PARKER. 17. A Method of Operating for Pansinusitis,

By P. W. WILLIAMS.

Section of Diseases of Children.

18. A Discussion on the Surgical Treatment of Infantile Paralysis, Introduced by A. H. Tubby. 19. Some Remarks on Herniæ in which Merkel's Diverticu-

19. Some Remarks of the Meningococcus and their Bacteriological Differentiation. Illustrated by Three Bacteriological Differentiation. Sporadic Cases, By F. C. Eve and J. M. CLEMENTS. eatment of Chorea, By W. E. WYNTER. Treatment of Chorea,

Teatment of Chora,
 Surgical Treatment of Tuberculous Glands in the Mesentery,
 Some Practical Points in the Treatment of Tuberculous Glands in the Mesentery,

losis of the Spine,

10 Spine,

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By W. HARRIS. 26. Ischæmic Myositis and Neuritis,

4. Vaccine Therapy.—Crofton states that the routine estimation of the opsonic index in the treatment of localized infections is practically an impossibility for the busy practitioner. But there are a large number of cases of strictly localized infections, such as acne, sycosis, lupus, etc., which may be safely treated without reference to this. writer holds that opsonin and complement are probably identical, and that permanent immunity is conferred by a heat stable body of the nature of immune body, which fixes the complement on to the microbe. He always begins with a very small dose of vaccine, the succeeding doses being largely increased at each vaccination, and a final large dose being given after the patient is apparently cured. This last has a potent influence in preventing relapse. Vaccine therapy may also be of use as a prophylactic measure. If the children of tuberculous parents were given a few increasing doses of tuberculin when infants it would eliminate their tuberculous tendency.

18. Infantile Paralysis.—Tubby discusses the surgical treatment of infantile paralysis due to anterior poliomyelitis. He recognizes four stages in the disease: I. The stage of onset, when the first symptoms of paralysis appear. 2. The period of quiescence, lasting from one to four weeks: deformity now commences in the affected areas. 3. The stage of partial recovery, lasting one to six months, due to the gradual absorption of the œdema and inflammatory exudation. 4. The chronic stage, lasting for an indefinite time. Suitable measures of treatment during (2) the quiescent period and (3) the stage of partial recovery, are dry warmth to the affected parts, massage, electricity, prevention of deformity, and the functional use in a normal direction of those muscles which are recovering. The object of all these forms of treatment is to ensure that the ultimate amount of muscular power retained or regained should be as great as possible. These objects can be effected: I. By the maintenance of the nutrition of the muscles. 2. By retaining the limb in a normal position, and guarding against the stretching of ligaments, muscles and tendons of the paralyzed parts. 3. By preventing contraction of healthy unopposed or partially unopposed muscles. The means of surgical treatment are as follows: I. Mechanical. The simpler the apparatus the better. 2. Tenotomy. This is of some value in helping to overcome contraction and in permitting relaxation. 3. Arthrodesis, or artificial joint fixation is done when no further recovery can be expected in the paralyzed muscles. Success is rare in children under ten years of age. The ankle is the joint usually operated upon. 4. Tendon and muscle transplantation. The indications here are: (a) To replace or reinforce completely or partially paralyzed muscles or groups of muscles. (b) To subtract from the power of muscles which are too strong and to add to those which are too weak. (d) To alter the direction of perverted tendon action. (e) As a supplementary measure to arthrodesis. The causes of failure are improper selection of cases, insufficient preliminary correction of secondary deformities, attempting to use weak muscles as reinforcers, defective asepsis, insufficient freeing and bending of tendons, insufficient fixation or early adhesion of tendons, and expecting transplanted tendons to control loose joints. 5. Nerve anastomosis and nerve grafting make new paths for the passage of impulses, and revivify dormant muscles.

LANCET

September 26, 1908.

I. Itching: Its Causes and Treatment

A Case of Embolic (Thrombotic?) Atelectasis of the Middle and Lower Lobes of the Right Lung: Survival, By H. B. Shaw and E. M. Conner. Notes on the Therapeutic Application of Stock Vaccines in the Treatment of Bacterial Infections,

By J. MATTHEWS.

Vaccines in General Practice.

By L. Grant, T. H. Campbell, and W. D. Anderson.
The Sanitation of Mines,

By F. Shufflebotham.

The Sanitation of Mines, By F. Shufflebotham.
The Formic Acid Derivatives in the Treatment of Can-

cer,
7. A Case of Rutured Uterus.
8. Diffuse Painful Lipoma of the Foot,
9. Sanitation in a Territorial Camp,
10. Observations on a Case of Huntington's Chorea.

By J. W. Evans.
11. Note on French and German for Medical Students,
12. Rev. W. Carpe.

By W OSLER 12. Notes on the Lactic Ferments as Therapeutic Agents,
By F. S. Mason

Itching.—Jamieson states that itching, or pruritus, is essentially a surface sensation and is probably located in the epidermis. It is just when an abrasion or a wound is finally cicatrizing that itching, popularly regarded as a favorable sign, makes its appearance. Pressure is inimical to itching. The tormenting itching in scabies is caused

by the female acarus driving her tunnel through the epidermis. Intense itching with entire absence of any definite skin disease is called essential pruritus. Or it may occur in direct association with some accredited lesion or integumentary ailment. It occurs as a superficial manifestation in both. When encountered over or near varicose veins it is the surface innervation which is disturbed. The proximate cause of itching is closely connected with that of urticaria. Unna's theory is that itching is due to a disproportion between the pressure of the tissue juices and that of the limiting corneous layer, and that the relief afforded by scratching is at least partly referable to the escape of serum from lacerations produced by the nails, temporarily equalizing the tension. But this theory does not account for itching where there is no evidence of ædema. We must probably assume in addition wholly to account for the pruritus that there is likewise a condition of hyperæsthesia, an undue sensitiveness of the skin. Generalized pruritus may be set up by parasites. The one skin disease with which itching is most commonly associated is eczema. It is met with in acute erythematous, papular, and scaly eczemata, while it is almost wholly absent in the vesicular and weeping forms. The thinner the epidermis the more pronounced is the itching in chronic infiltrated eczema. Like insects, plants may set up a dermatitis and induce itching. The early eczematous or lichenous eruptions of mycosis fungoides are often accompanied by itching, so intense as to suggest the nature of the trouble, and only yielding to the x rays. Other forms of itching are those due to poisons generated from within, as in severe jaundice and Hodgkin's disease. Pruritus of the anus and of the vulva are also important forms. In all cases of generalized itching the possible existence of scabies or lice, or the chance of the irritation having been started by plants, must ever be borne in mind. Itching cannot be treated solely as a substantive lesion without risk of failure. Medicated soaps are useful where there is no skin disturbance—as in senile pruritus apart from pediculi. In most cases of pure senile pruritus a permanent cure can be obtained by giving a course of subcutaneous pilocarpine injections; one each night for two or three weeks. These usually restore the sweat gland system to functional activity and with the reestablishment of cutaneous exhalation the trouble ceases. Hot water usually gives great relief in the itching of eczema.

3 and 4. Vaccine Therapy.—Matthews discusses the potentialities and limitations of therapeutic inoculation in the treatment of microbic infections, with or without the assistance given by the estimation of the opsonic index. He defines the opsonic index as the expression of the measure of the phagocytic power produced in a sample of washed leucocytes by the serum of the individual in question, as compared with the phagocytic power induced in a similar sample of leucocytes by the serum of one or more healthy individuals. This latter power is taken as unity, and the index of an infected individual is expressed as a fraction of unity, above or below unity, according to the greater or less quantity of protective substances in the infected serum, as compared with the normal serum. The opsonic index then is the measure of

the resisting power, as comprised in phagocytosis, of a serum, against the microbe in question. A vaccine is a killed bacterial culture suspended in sterilized normal saline solution, to which lysol to the strength of 0.25 per cent., or carbolic acid to the strength of 0.5 per cent. has been added. Vaccines are accurately standardized by mixing together definite quantities of vaccine and normal human blood of known corpuscular content. Smears are made of the mixture, are dried, fixed, and stained, and the numbers of red cells and microbes counted in the field. An estimation of the number of microbes in each cubic centimetre of vaccine is then possible. The cultures are killed by immersion for one hour in a water bath at 60° C., and the sterility having been demonstrated by culture methods, a suitable dilution for use is made in rubber capped sterile bottles for laboratory and hospital use, and in sealed glass sterilized capsules, containing slightly more than one cubic centimetre, for general use. The injection of a dose of vaccine into a healthy normal individual produces either: (1) An immediate rise in the protective substances, as indicated by the op-sonic index ("positive phase" of Wright). (2) A fall of longer or shorter duration ("negative phase"), followed by a rise up to or above normal, in its turn followed by a fall toward normal. (3) A fall tending to be more or less permanent according to whether the dose is small, medium, or excessive. In general in the treatment of infections it is desirable to maintain an average high level of resistance. Within certain limits the duration of the effects produced by any one inoculation varies proportionately to the dose of vaccine inoculated—that is, the longer the negative phase the longer the positive phase will be. In any infection which is not strictly localized, and more especially in septicæmias, the curve to be aimed at is one in which no negative phase occurs. The corollary is that the response invoked is short, and therefore reinoculation must quickly follow, even to daily doses. In such cases the opsonic index is of paramount value as a guide. In chronic or acute strictly localized processes, on the other hand, a temporary negative phase, if followed by a prolonged positive phase, will be of no consequence—and the advantage is gained that injections need not be given oftener than once a week. The negative phase should not last longer than twenty-four hours. The production of a permanent negative phase is disastrous except in the case of a localized furuncle, which is maturating very slowly, but in which absorption without suppuration is unlikely to occur. Treatment of individual cases falls under two headings: (1) The isolation of the microbe at fault, and the preparation and standardization of a vaccine; and (2) the estimation of the correct dose and of the period which should elapse between doses. Grant, Campbell, and Anderson report some cases of vaccine therapy in general practice. The cases include tuberculous adenitis, folliculitis barbæ, tuberculosis of the toe joint, and pulmonary tuberculosis. The results in all were satisfactory. The scars resulting were soft and pliable, and the disfigurement slight. Recovery seemed rapid, with a consequent saving of suffering and expense to the patient. The absence of severe surgical measures minimized the risk of a general

tuberculous infection and obviated the risk of general anæsthesia. Although opsonic estimations were only occasionally made they suggested that the index was being steadily raised.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 24, 1408.

I. Relations between Congenital Muscle Defects, Infantile Nuclear Atrophy, and Dystrophia Muscularis Progressiva Infantilis,

By Ziehen

Concerning Two Cases of Multiple Encephalitis with Meningitis from Meningococci, By MASCHKE. Meningitis from Meningococci, By MASCHKE. Concerning Multiple Peritoneal Pseudometastases of an 3.

Ovarial Dermoid, By EDUARD MELCHIOK.
Further Results of the Conjunctival Reaction in Tuberculosis, By RICHARD FABIAN and HANS KNOPF.
The Question of Complement Deviation in Scarlet 4

Fever, By Harald Boas and G. Hagte.

Concerning a Simplification of the Jacoby-Solms Castor Oil Method of Determination of Pepsin,

By Max Einhorn.

Concerning Corporal Punishment in School,

By EDMUND FORSTER. 8. Recollections of America, Ву Мах Вёнм.

1. Relations between Congenital Muscle Defects, Infantile Nuclear Atrophy, and Dystrophia Muscularis Progressiva Infantilis. - Ziehen reports two cases, one of congenital ophthalmoplegia externa, the other of a total monolateral defect of the pectoralis major associated with a very considerable defect of the pectoralis minor, and with these as a text discusses the nature of such cases. He divides these cases into two groups: A, congenital atrophic paralyses, (a) nuclear, (b) primary, muscle defects; B, acquired atrophic paralyses dependent on a congenital condition, (a) nuclear, infantile progressive bulbar paralysis, (b) primary myopathy dystrophia muscularis progressiva. He believes that these two groups can be distinguished with reasonable certainty, as there is no progressive course in the purely congenital cases.

4. Conjunctival Reaction in Tuberculosis .-Fabian and Knopf conclude that a certain prognostic value cannot be denied the conjunctival reaction. A positive reaction indicates with the greatest probability the presence of tuberculosis, but a negative reaction does not exclude the presence of this disease. They state that their use of the conjunctival reaction was attended with no injury, and that they consider it of a value not to be underestimated.

5. Complement Deviation in Scarlet Fever .-Boas and Hauge declare, from the investigation of sixty-one cases, that the complement deviation obtained by the technique employed by them was so rare in scarlet fever and disappeared so quickly after the disease that it in no way is prejudicial to the great diagnostic value of Wassermann's reaction in syphilis.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

The Extension, Origin, and Prevention of the Narrow By HEGAR.

Orthodiagraphic Studies of Pathological Conditions of the Heart and the Behavior of the Heart in Emphysema and Asthma,

The Administration of Extractum Digitalis Depuratum, Ву Вёнм,

Condurango Bark and Kawar Root, Improvement of Tuberculin Treatment, By JESSEN By BECHHOLD. Studies in Phagocytosis, The Relations of the Cycloses to the Animal Organism, By ROSENBERGER. Concerning Asymmetry of the Face and Skull and Its Relation to Torticollis,

By PETERS. Typhoid Epidemiological Observations Concerning Fever and Paratyphus Bacillus in the Palatinate during 1903 to 1906, By MAYER.

10. A New Elastic Instrument for Closing the Intestine, By SOLARO.

II. An Interesting Case of Quinine Poisoning,
By SALOMON.

12. Treatment of Summer Diarrhœa in Children, By BING. 13. The Question of Hospital Treatment and the Indica-By Frankenburger.

tions for the Same, I4. Concerning Measurement and Dosage of X Rays in Absolute Unity. Röntgenolysis, By NAGELSCHMIDT.

3. Extractum Digitalis Depuratum.-Höpffner recommends the use of this preparation because 1, it produces a certain and prompt therapeutical action; 2, the action upon the pulse, affecting its quality, and frequency, and the diuresis appears relatively quickly; 3, it appears to disturb the stomach less than treatment with digitalis leaves given with sufficient energy to produce the same therapeutic result; 4, an energetic digitalis treatment can be carried out more easily with the purified extract than with the inconstant digitalis leaves without equal danger of intoxication through cumulation.

4. Condurango Bark and Kawar Root.-Böhm finds in both the condurango leaves from Ecuador and the kawar root from the Transvaal etherial oils that are very similar in their characteristics. Both plants come from their native places recommended as cures for cancer, both belong to the same family, and the chemical composition of the drugs obtained from each bears an extremely close resemblance.

6. Studies in Phagocytosis.—Bechhold gives as the results of his experiments that: I, sodium hydroxide arrests phagocytosis, but only when the leucocytes are visibly changed. The destructive action of the sodium hydroxide is markedly lessened by the presence of serum and still more by that of the entire blood. 2, Relatively large quantities of lactic acid do not greatly influence the phagocytosis, and even a visible change of the leucocytes by lactic acid does not hinder phagocytosis. 3, Addition of oxygen, whether in the presence of the red blood corpuscles or not, has no influence on phagocytosis. The same can be said of saturation with carbonic acid and with illuminating gas, neither prevent phagocytosis. 4, Experiments with various colloid substances show that the colloid nature itself has no effect upon phagocytosis.

11. Quinine Intoxication.—Salomon reports the following interesting case: A woman had been treated by him several months before with large doses of quinine which she had borne well. On account of recurrence of the disease for which she had been treated she consulted him again and was prescribed the same remedy. Immediately after the first dose of 0.3 gramme she complained of bad vision, ringing in the ears, and vomiting, so that on the following day she was directed to take only half a dose once a day. On the next morning her entire face was swollen and so ædematous that the eyes could scarcely be seen. The margins of the lupus erythematosus, from which she suffered, were covered with thick blood crusts, while the lupus was permeated with numerous little hæmorrhages. There was also extensive purpura hæmorrhagica in parts free from this disease, and a severe hæmorrhage from the conjunctiva of the right eye. She was suffering from dyspnæa, hæmatemesis, bloody diarrhœa, hæmaturia, and bleeding from the mucous membranes of the mouth and nose. Recovery took place after a few days. The points of particular interest are the developed idiosyncrasy, the extraordinary severity of the toxic symptoms from so small a dose, and the limitation of the hæmorrhages in the face to the efflorescences of the lupus erythematosus.

ARCHIVES OF PÆDIATRICS.

Modern Laboratory Feeding and the Wide Range of Resources.

By T. M. Rotch.

Diabetes in Infants and Young Children,

By H. B. WILCOX Rheumatic Affections in Children. A Clinical Study.

By F. L. Wachenheim.

Imperforate Anus, with the Report of a Case.

1. Modern Laboratory Feeding and the Wide Range of Resources .- Rotch notes the great advance which has been made in dealing with the nutrition of early life since 1891. All food stuffs can be classified as fats, carbohydrates, and proteids. and the proper selection of these is more important than following too rigidly the use of any patent or proprietary food. Physicians and laymen as a whole know too little about the principles of physiological chemistry, however much they may know about the use of the three classes of food stuffs. The author suggests a new prescription blank which would enable the physician to prepare a laboratory formula not only for the percentages of fat, lactose, and proteids but for various new foods including maltose, sucrose, dextrose, etc., thus doing away with the necessity for the use of patent foods. By means of this blank all combinations of the elements necescary for infants' food can be obtained at the laboratories, according to the indications in a given case. This card or blank explains in one column the function of the various substances which may be prescribed, the method of chemical action which they undergo in being used for a food mixture, maximum and minimum doses, and the time required to produce the necessary chemical changes. In another column are indicated the various substances which are to be used with their subdivisions, and the purpose which they are expected to accomplish, also general directions as to the use of the prepared formula. Another column is devoted to percentages which are written opposite each substance which the physician may wish to employ.

2. Diabetes in Infants and Young Children .-Wilcox thinks that in the treatment of this disease the physician's aim should be as follows: 1. To maintain the bodily nutrition at its highest level by general régime and feeding. 2. To keep the excre-tion of glucose in the urine at the lowest possible point. 3. To keep the urine free from acids. The following points are essential to the proper care of diabetics: 1. The determination of the type in each particular case, the ascertaining whether it is simply a carbohydrate incapacity or a deficiency in fat oxidation, as shown by acidosis. 2. The discovery of the particular carbohydrate which will be best tolerated by the patient. 3. A comprehensive method of recording data by which one can obtain exact information and make comparison between the

patient's weight; the amount of urine passed in twenty-four hours, with its specific gravity; the amount of sugar excreted; the quantity of acids present in the urine.

3. Rheumatic Affections in Children.-Wachenheim observes that these diseases are rare in infancy compared with their relative number at puberty. At the latter period they are among the common affections of childhood, coming next to the infectious diseases and the ordinary disorders of the gastrointestinal and respiratory tracts. They are more common in females than in males and are usually complicated with other diseases. In the acute cases given in the author's table the course was seldom severe, and salicylates were usually effective especially when supplemented by the In the subacute cases it is always necessary to exclude articular tuberculosis and gonor-rheal arthritis. The diagnosis in infancy and early childhood is very difficult; one must exclude scorbutic, septic, tuberculous, gonococcic, and pneumococcic joint disease. But after the third year muscular and joint pains must be closely scrutinized, and the heart examined. Sodium salicylate furnishes the best substance for drug treatment. Rest in bed, heat and immobilization are also very es-

THE PRACTITIONER. September, 1908.

Malignant Obstruction of the Esophagus,
By L. McGavin By A. J. HALL Difficulties of Diagnosis,

Cancer of the Breast. Indications for Operation,
By T. C. English.
Striæ Atrophieæ as a Sequel of Acute Pneumonia,

By F. C. MOORE The Treatment of Wry Neck by Lengthening the Sternomastoid, By S. P. Rowlands. Some Recent Advances against the Tubercle Bacillus,

By F. C. Eve. By H. T. Hicks.

Pyclitis during Pregnancy,
Review of Recent Advances in Surgery,
By J. Cunning.
A Review of Recent Work in Abdominal Surgery,
By H. Upcort.
L. Parlianities 10. A Case with Comments. Pneumococcal Peritonitis,

By R. F. Jowers.

Malignant Obstruction of the Œsophagus. -McGavin finds carcinoma the most frequent of all diseases of the œsophagus, occurring most frequently in males, and usually after fifty years of age. Nothing has been proved in regard to its embryonic causation; syphilis is probably an ætiological factor in some cases. Its most frequent location is at the bifurcation of the trachea. It tends to assume a ringlike formation and seldom progresses to the stomach. Metastases are of rare occurrence, and glandular involvement is usually late in occurrence. Dysphagia is practically its only early sign. The author considers the disease as it occurs within the lumen of the tube, within the wall of the tube, and as a result of pressure from the outside. The diagnosis may be made with the laryngoscope, with the finger, and by observations of the act of swallowing. but more precisely by radiography, by the passage of sounds, and by the esophagoscope. As to treatment the diseased structure may be extirpated but will usually recur, or esophagostomy without resection may be performed, or finally intubation and gastrostomy.

3. Cancer of the Breast. Indications for Operation.—English calls attention to the fact that there are many doubtful cases in which it is difficult to say whether an operation should be performed. The history of this portion of operative surgery is one of consistent progress, and many cases formerly considered hopeless are now treated with definite success. Even the cases in which the supraclavicular glands are involved may sometimes be submitted to operation. Such are those in which these glands though enlarged are not fixed. Should the glands be fixed behind the clavicle operation would be useless. In atrophic scirrhus the author advises early and thorough operation unless the patient is old and feeble, or there is some other obvious contraindication. Pregnancy should not be made a reason for postponement of surgical procedure. In bilateral carcinoma it will sometimes be better to operate first upon the breast which is more seriously diseased and after a fortnight or more to remove the other. Radical operation is excluded when (1) the growth is fixed to the thorax, (2) when the skin is extensively involved, (3) when the axillary vessels or nerves are implicated, (4) when there are deposits in the viscera or bones. In palliative operations the skin flaps should be so cut that the wound may heal by first intention.

5. The Treatment of Wry Neck by Lengthening the Sternomastoid.-Rowlands thinks the results of treating this condition by cutting the muscle subcutaneously or by the open method are by no means good, owing to the contraction of the newly formed fibrous tissue. The subcutaneous tenotomy is sufficient and safe in skilled hands and leaves no scar, but is not suitable for most cases, besides there is danger of wounding the internal jugular vein. It is safer to make a wound large enough to avoid the large vessels and nerves, and to make a thorough and safe division of the contracted structures. The fact that tendon lengthening is very successful in the treatment of talipes suggested to the author that lengthening the sternomastoid might also be effective. A curved incision is made across the lower end of this muscle which is then separated from the underlying vessels. The sternal tendon is then detached from the bone, and separated from the clavicular fibres, which are then divided obliquely upward and backward. The muscles are then stretched, the anterior fibres of the trapezius being also stretched. The two heads of the sternomastoid are then sewed together with catgut sutures, without tension, bleeding carefully arrested, and the wound dried and closed, the head being bandaged in the over corrected position. A supporting apparatus is worn for six months.

6. Some Recent Advances against the Tubercle Bacillus.- Eve finds recent work on this subject grouped under three headings: (1) The avenues of infection whereby the tubercle bacillus gains entrance to the body. (2) The intercommunicability of the human and bovine types of tubercle bacillus. (3) Treatment by the production of immunity with or without the aid of the opsonic index. The present tendency is to the view that the tubercle bacillus gains entrance generally by the bowel. As to the second point the evidence is abundant that tuberculous cows ought never to be used to supply milk for human food. As to the third point the chief hope

of fighting established tuberculous disease seems to be centered in the future of tuberculin. Other diagnostic methods are (a) an opsonic index outside the normal limits, (b) a transient fall followed by a more persistent elevation of the opsonic index in response to an injection of tuberculin or to autoinoculation produced by exercise, massage, or Bier's treatment, (c) the agglutination test of the patient's serum on an emulsion of tubercle bacilli, or (4) the method which is known as the deviation of the complement. Whatever method of treatment may be adopted in tubercular disease, success depends upon

7. Pyelitis during Pregnancy.—Hicks believes that pregnancy renders the urinary tract unusually vulnerable to bacterial invasion owing to hyperæmia, and urinary stasis resulting from pressure. It may intensify chronic renal disease, but under any circumstances the pelvis of the kidney frequently becomes infected during pregnancy, the bacilli gaining entrance directly from the colon. The condition is seldom an ascending one from the lower urinary tract. Pyelitis is usually on the right side only, but if secondary to cystitis both sides will be affected. In the ten cases which the author has seen, constipation was looked upon as the starting point in all of them, the renal pelvis being infected by way of the lymphatics. The condition usually begins with acute pain in the right renal region in the fifth to the seventh month of pregnancy, and temperature of 102° or 103° F. Pus will usually be found in the urine within forty-eight hours. The pyuria may persist for weeks, the pain and temperature will usually subside in two weeks. The general condition will depend upon the degree of toxic absorption. The prognosis is usually good, but there is a tendency to premature labor. The treatment is rest in bed, fluid diet, urinary antiseptics. Drainage of the pelvis is the main question to be considered.

AMERICAN JOURNAL OF SURGERY. October, 1908.

- Acute Perforating Gastric and Duodenal Ulcer,
 By Ellsworth Eliot.
 By JOSEPH WIENER.
- An Arrangement for Observing Operations,
- By A. MONAE LESSER.
 Report upon Three Interesting Cases of Sinusitis Asso-
- ciated with Serious Eye Complications, By ALFRED WIENER.
- Practical Points in Anæsthesia,
- By FREDERICK EMIL NEEF. By WILLIAM P. LANG.
- Cholecystectomy,
- An Easily Constructed Sling for the Application of the Plaster Jacket,

 By Sigmund Epstein.
- 2. Hernia.—Joseph Wiener remarks that a hernia need rarely be operated on during the first few or it becomes irreducible or strangulated. Taxis should be employed with the greatest care, not much force should be used, and it should not be perusually indicated in a reducible hernia which cannot be well retained by a truss, an irreducible hernia. a hernia which has once become incarcerated or strangulated, even though it be successfully reduced by taxis, and every strangulated hernia that cannot be reduced by taxis. The author believes that in the long run the greatest good to the greatest number will be accomplished by adhering to these con-

clusions, in support of which it must be borne in mind that we can at the present promise a complete cure to over ninety per cent. of nonstrangulated cases. Furthermore, the operative mortality in these cases will be practically nil; whereas, the operative mortality in strangulated cases is at least twenty-five per cent. Further marked improvement in the operative technique is hardly to be expected. The mortality can be lowered only by operating on more cases before the hernia becomes strangulated, and by operating at the earliest possible moment in the presence of strangulation.

5. Anæsthesia.—Neef says that the extensive use of ether and the experience that its incautious administration is fraught with but little immediate danger has gotten the hospital interne into reckless habits which cling to him in practice. There the anæsthetist finds himself frequently compelled to use chloroform, a narcotic many times more powerful than ether. In the hands of the inexperienced, and, above all, the inattentive, chloroform is certainly a dangerous drug. But this does not retract from its great value as an anæsthetic, and it would be illogical to condemn its use. In the aged we know that it is often not so much the operation itself as the bronchopneumonia that follows the anæsthesia which deserves grave consideration. Chloroform, or the chloroform ether combination, is undoubtedly, in such cases, preferable to pure ether, because it causes less bronchial irritation. In the morphine chloroform ether combination chloroform and ether are blended in a way most adequate for anæsthesia, and the system is so flexible that it readily adapts itself to an anomalous case. The difficulties in respiration so frequently encountered, even by the experienced anæsthetist, find a natural solution; if he has been studying the case he will be able to judge whether the trouble is due to crowding or to a mechanical cause. It should be remembered, whether the case is an apparently simple or critical one, that the good anæsthetist. just as the good surgeon, is he who, besides being competent, has a conscience and feels his responsibility; who appreciates that there are some who are anxiously awaiting the outcome and have a deep interest in the life that is in his hands.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 717.)

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The Ophthalmic Reaction.—Dr. Fernand Ar-Loing, of Lyons, said that from the clinical viewpoint the conjunctival reaction to tuberculin was sometimes accompanied by more or less marked dilatation of the rappl and much has frequently by meiosis. In his earlier experiences he had observed a kind of local anaphylaxis—a patient who had given a negative reaction on the first instilla-

tion would give a positive reaction on the second or third instillation. He had observed that after the hypodermic injection of tuberculin following the instillation into the eye, frequently the former test would be followed by a reproduction of the result of the latter. He considered, however, that this fact did not act as a contraindication to the employment of tuberculin hypodermically in the same subject. He found that a previous employment of tuberculin for therapeutic purposes had a very variable effect on the ocular test. He said that the ocular reaction was not free from danger. It was occasionally accompanied by prolonged conjunctivitis and by ulceration of the cornea. The previous instillation of a few drops of a I to 3,000 solution of adrenalin was capable of preventing excessively violent and prolonged reactions. As a result of his experimental researches he found that nontuberculous rabbits and horses that were poisoned with various microbic toxines gave positive reactions when tuberculin was instilled into the conjunctival sac. The rabbit, for instance, was more actively sensitized by typhoid toxine than by tuberculin, or at least to an equal degree. These facts showed that positive reactions might be obtained in nontuberculous subjects suffering from some other infection. Consequently, he considered the reaction to be an evidence of intoxication with any kind of toxine, and thought that the reaction was not absolutely specific in a theoretical sense, but had merely a relative value. The comparative study of the ocular reaction and the serum agglutination test showed that the two tests often gave positive results in the same individual; one of them might be present and the other absent, or they both might be present in varying intensity. He concluded that the ophthalmoreaction indicated that the organism was intoxicated with tuberculin; the serum reaction, on the other hand, showed a defensive reaction of the economy, while its intensity measured the degree of immunity of the individual to the tubercle bacillus. Therefore, it appeared to the author that at a certain point in the evolution of tuberculosis a positive ophthalmoreaction with a negative serum reaction indicated a doubtful prognosis, while the contrary would indicate a favorable outcome. When the two reactions were present in practically equal intensity, it showed that the organism was in a state of indifferent equilibrium and that the disease might end either in recovery or fatally. He considered the ophthalmoreaction to be a convenient and easily available diagnostic procedure; it sometimes failed in persons who were certainly tuberculous, and, on the other hand, it might be positive in subjects not suffering from tuberculous disease. Its diagnostic value, therefore, was not absolute, although it was quite accurate. The test was not always harmless, and it was not superior to the agglutination test. The latter procedure had the advantage of being absolutely harmless, more constant, and more delicate. Finally, the ophthalmoreaction was an indication rather of the degree of intoxication of the organism, while the agglutination reaction was an indication of the forces available for defense

The Application of the Differential Cutaneous Reaction in the Diagnosis, Pathology, and Treat-

ment of Tuberculosis.—Dr. Ladislaus Detre, of Budapest, said that his differential test for the variety of tuberculosis was a modification of the von Pirquet reaction. He applied concentrated old tuberculin, the filtrate of a culture of human tubercle bacilli, and the filtrate of a culture of bovine tubercle bacilli to the skin of the patient simultaneously. The reactions showed that the cases might be divided into four classes: (1) Those that were sensitive to the toxine, (2) those that were not sensitive to the toxine, (3) those that were positive to human tuberculin, and (4) those that were positive to bovine tuberculin. The author found that by his method ninety per cent. of the cases of pulmonary tuberculosis reacted to the human tuberculin, whereas in visceral and surgical cases, in adults, the reaction to bovine tuberculin could be demonstrated in from one third to one half the The decision as to which tuberculin was giving the reaction was made by observing which lesion was the more pronounced, because there would be a reaction to both tuberculins in the majority of the cases. He preferred, however, in the majority of the cases, to use the filtrate of the cultures rather than the tuberculins. He found that when a patient reacted more prominently to the human inoculation he never, upon subsequent inoculations, showed a predominance of the bovine reac-He thought that the determination of the reaction to human or bovine tubercle toxine should be determined whenever it was necessary to confirm a difficult diagnosis or to answer certain hygienic questions in regard to the carriers of in-The use of the test was valuable in the study of the question of the dualism or the unity of the Bacillus tuberculosis, and to answer the question of origin or of type of a certain bacillus, a tuberculin, or a filtrate. This question could be answered in from twenty-four to forty-eight hours by selecting the individual for the purpose of making the test according to his reaction to human or bovine tuberculin. The reaction type should be determined when for therapeutic purposes it was desirable to attempt to immunize a patient to the toxines of the bacilli. The author used the terms the "dominant" and the "concomitant toxine." It appeared that the dominant toxine was that derived from the type of bacillus with which the patient was infected, while the concomitant toxine was that derived from the opposite type of bacillus. He maintained that in immunizing work the patient would be tolerant of the concomitant toxine and could easily be immunized with it; but that he would be intolerant of the dominant toxine. Hence the therapeutist would select for his immunizing substance the toxine of the organisms corresponding to the tuberculin that gave the less marked reaction. He thought that by means of the systematic employment of the differential cutaneous reaction it was possible to immunize a patient against the toxine, provided, of course, that the clinical symptoms were kept under accurate observation, with much greater ease and certainty than had heretofore been possible. The technique was simpler, and the results were more objective, more certain, and more easily perceived than the results of the opsonin method.

COMBINED MEETING OF SECTIONS I AND VII.

THE RILATIONS OF HUMAN AND BOVING TUBERCULOSIS.

The Relations of Human and Bovine Tuberculosis .- Dr. Robert Koch, of Berlin, spoke of his statements concerning tuberculosis made at the London Congress in 1901. He said that Theobald Smith had been the first to divide the Bacillus tuberculosis into the two types, human and bovine. He said that after his statements in 1901 many experiments had been published to prove that human tubercle bacilli could infect cattle and that bovine bacilli could infect man. He referred to the difficulty of excluding infection in the natural way in any group of experiments. He particularly criticised the experiments made by the British Royal Commission. Some of the sources of error in interpreting experiments were the accidental contamination of cultures with organisms of the opposite type and the accidental occurrence of natural infection in the experimental animals. He said that a bacillus of the bovine type had never been found in a case of pulmonary tuberculosis, and that a distinctly human type of bacillus had never been found in a case of tuberculosis in cattle. He admitted that bacilli of the bovine type had been found in the lymph nodes of man in a few cases; but he said that these bacilli were not very virulent. Eleven twelfths of the victims of tuberculosis in the human family died of pulmonary tuberculosis and only one twelfth died from the other forms of the disease. Since no case of pulmonary tuberculosis had ever been recorded in which the bacillus was of the bovine type, he thought that the direct prophylactic problem was to destroy the human bacilli in the discharges from infected human beings. From a practical sanitary point of view, the infections with bovine bacilli could be disregarded, and all the energies of the sanitarian could be directed toward the extermination of the human type of the bacillus. He did not contend that the human and the bovine bacilli were distinct species of organism, but that they were not identical organisms; and he did not believe that one could be converted into the other.

The Relations of Human and Animal Tuberculosis, with Special Reference to the Question of the Transformation of Human and Other Types of the Tubercle Bacillus.—Dr. THEOBALD SMITH, of Boston, described certain experiments that he had undertaken to determine the possibility of transforming tubercle bacilli of the human type into tubercle bacilli of the bovine type. It was possible that in one or two cases bacilli of the bovine type had been isolated from sputum, but these cases were of extremely doubtful authenticity. Infection of human beings with the bovine bacillus was essentially an infection through the alimentary canal. In the experiments that he had instituted for the study of the question of the ability to infect bovines with human tubercle bacilli he had used (1) pure cultures only, (2) tuberculous tissues, and (3) tuberculous tissues and pure cultures alternately. In general, the results from the use of cultures alone proved negative. Experiments in which cultures and tissues alternately or tissues alone were used were in some instances positive. These positive results might have been due to the accidental introduction of new stains of bacilli or to the use of mixed cultures, to an augmentation of the virulence of the organisms, to the rehabilitation of old bovine cultures, or to the conversion of the human into the bovine bacillus. Probably most of the successful attempts meant that there was an increase in the virulence of the organism, and not a passage from one type of the bacillus into the other type. transformation of the bovine type of tubercle bacillus into the avian type of bacillus had been reported, but the conditions of the experiment made it possible that the bovine type culture had been contaminated with the avian type bacillus. It was impossible at present to accept the proposition that bacilli of the bovine type could be transformed into bacilli of the human type. It had been definitely proved that human tuberculosis could exist without bovine tuberculosis, and he instanced several countries in which no bovine tuberculosis was present, but in which human tuberculosis was common. He agreed that the important sanitary problem was to prevent the spread of human tuberculosis.

The Problems to be Solved in Dealing with Human and Bovine Tuberculosis.—Dr. G. SIMS WOODHEAD, of Cambridge, England, said that no one was an opponent of Dr. Koch, that the men working on the problems connected with tuberculosis were merely trying to solve some of the questions raised by that eminent scientist. He described the conditions of the experiments performed by the British Royal Commission, upon the outcome of which the Commission published their positive results in producing tuberculosis in calves by feeding with human tuberculous sputum. He had found a sufficiently large number of virulent tubercle bacilli in cases of alimentary infection in human beings to produce tuberculosis in cattle. He concluded that they had either found the human type of bacillus much raised in virulence, or that they had discovered bovine bacilli in human cases. One third of the cases of tuberculosis in children under five years of age were due to the bovine bacillus, and he maintained that attention must be paid to this factor in considering methods of prophylaxis. No campaign against the spread of tuberculosis could be undertaken in which this factor was not taken into consideration. He thought that the question of modification of the bacilli of the various types was of considerable importance. He considered infection to be a very slow process, and thought that it was quite within the range of possibility that, during the period that clapsed between the ingestion of the bacilli and the clinical manifestation of the disease, which might be several years, the bacilli might un-dergo transformation in their new environment.

Variations of the Tubercle Bacillus, Especially from the Standpoint of Virulence.—Dr. S. Artono, of Lyons, said that he was a staunch adherent of the theory of the unity of the tubercle bacillus. His studies concerning this point had involved experiments directed toward the explanation of the variations in the cultural characteristics, the morphological peculiarities, and the alterations in the virulence of the organisms. As early as in 1884 he had made experiments that showed that the human tubercle bacillus varied very much in virulence. His later were laid demonstrated that the

virulence of the human bacillus varied from that of the most active bovine bacilli to an almost complete loss of the power to produce tuberculosis in the animals into which it was inoculated. Other experiments developed a method of culture by which he was able to increase or lower the virulence of any culture at will. He was able by the use of these special methods to produce a tubercle bacillus that had its virulence so modified that it resembled the avian bacillus. From his own experiments and from the results of the experiments of others, he showed that the avian bacillus could be so modified in virulence that it would resemble the mammalian organism. From the results of these experiments the conclusion must be drawn that the variation in the virulence of the bacilli explained the differences in the gravity and the course of tuberculosis, and they showed the desirability of possessing prognostic methods of reliability, as well as sure diagnostic methods. He believed that the unity and fusion of the classic types of tuberculosis were demonstrated, and he emphasized the necessity of taking precautions against tuberculous virus of whatever origin.

Investigations into the Relations of Human and Bovine Tuberculosis and Tubercle Bacilli .-Dr. Johannes Fibiger and Dr. C. O. Yensen, of Copenhagen, said that their studies for the determination of virulence were made upon fifty-one cultures, forty-seven human and four bovine; for the variations in morphology upon twenty-eight cultures, fifteen human and thirteen bovine; for the cultural characteristics upon twenty-nine cultures; for the chemical relations of the bacilli upon thirtytwo cultures, and upon thirty-six cultures on media free from albumin. As a result of this study the authors could not admit a sharp separation between the two well known types of bacilli, although it was true that the majority of the cultures isolated from cattle possessed the qualities described as peculiar to the typus bovinus, and that the majority of the cultures isolated from human sputum corresponded to the typus humanus. There were some cultures, however, that must be considered as transition forms, having some of the characters of the bovine and others of the human type.

Recent Developments in Regard to the Relations of Human and Bovine Tuberclosis .-Dr. MAZYCK P. RAVENEL, of Madison, Wis., said that he hoped that the impression would not go out from the congress that any death from tuberculosis in any of its forms was of negligible value. He believed that the apparent difference between the bovine type of the tubercle bacillus and the human type of the bacillus was probably produced by the different environment in which the two organisms grew. He thought that the highly virulent type of bacillus usually seen in bovines had been filtered out from among numerous organisms of varying virulence by the natural resisting powers of the animal into which they had been inoculated. There was no doubt that the tissues of children who had died of tuberculosis contained bacilli of the bovine type. There was no good method of accurately determining the source of a given strain of bacilli obtained from the human body at autopsy. He believed, however, that it was possible to transform the boying type of bacillus into the human type of

the organism. He said that cows coughed up sputum and distributed it just as the members of the human family did, and that this sputum in the case of a tuberculous cow contained tubercle bacilli that were capable of spreading the disease. It had been proved that tubercle bacilli could pass through the wall of the intestine without leaving the least mark of their passage. They could also reach the lung through the thoracic duct within four hours after they had been introduced into the stomach, without leaving any trace of their passage. In other words, the tubercle bacillus, having entered the alimentary tract, reached the lungs by the same route that the food reached those organs. He believed that the bovine tubercle bacillus, having entered the human body, acted exactly like the human bacillus. A fair proportion of children and adults who were victims of tuberculosis had bovine tubercle bacilli in their tissues. He thought that every precaution should be taken against the contamination of milk and meat, and that the proportion of cases of tuberculosis due to the bovine bacillus was extremely important from the viewpoint of public health.

Wetters to the Editors.

STATE BOARD EXAMINATIONS.

ALBANY N. Y. Oct bee 8 1908.

To the Editors:

My attention has but recently been called to Dr. James A. Egan's letter in your issue of September 5th, commenting upon my paper on The Character of the State Board Examinations, which you had noticed editorially and approvingly on August 1st. While much disliking controversy and the discussion of minor matters like the phraseology of examination questions, I am nevertheless going to beg a little of your space to reply to this letter, because it illustrates better than anything that I could say the attitude of many members of our State examining boards, and it is this attitude which I am opposing, and shall continue to oppose, because it is indicative of a tendency which seems to me to be vicious and which must exercise a baneful influence upon the medical profession so long as it is allowed to govern the action of the boards. This attitude to which I refer may be summarized as follows: The assumption of universal knowledge in the medical branches which are the subject of examinations; the independence, impatience with interference, and arbitrary action which the mere holding of office so often engenders; and the unwillingness to receive advice or suggestions from teachers and others qualified to advise. As a matter of fact, the boards are not omniscient, and they should act justly and deliberately, and not despotically, and, above all. they should be willing to listen to the advice of teachers who, having no favors to ask, desire only to secure the correction of existing abuses and the improvement of our licensing system.

Dr. Egan's comments on my criticisms are important, because they are representative of the attitude of many of the boards. He either fails to see or refuses to admit that the essential fault with the paper which I criticised is that all five of the questions dealt with theoretical and general descriptive chemistry, and none of them with chemistry as related to medicine, unless very remotely. Some of them were proper enough in their place, as in a high school or college examination, but for the particular purpose intended I do not hesitate to say that the paper was as inappropriate and unsuitable as any that I ever saw. And in referring to the New York State examination paper in chemistry of October 2. 1907, he fails to see that, while a few such questions as those which constitute his entire paper are included with many others, the candidate has fifteen questions in all, from which he may select ten, and is entirely free to omit questions not related to medical subjects. The two papers are radically different, and, if Dr. Egan does not perceive this, the fact has no little significance and importance.

As to the use of the term "formula" for "equation," I beg to say that Dr. Egan is entirely in error in supposing that they are synonymous terms, if this is what he means by speaking of one as the "analogue" of the other, and he might have set himself right on this point by consulting any dictionary before making his comments. For an examiner in chemistry to confound one term with the other is as inexcusable as if an examiner in mathematics should use "chord" for "arc," or speak of a cylinder when a sphere was intended. Dr. Egan says: "Surely Dr. Tucker must be at a loss for words when he attempts to discredit the ability of a State examiner to formulate questions in a proper manner." I do not know just what this may mean, but certainly the examiner who prepared this particular paper stands discredited already, and in criticising it I have been at no loss for ideas, which would seem to be more important than words.

Again, whether the questions in the paper were taken from Remsen's College Chemistry or not is entirely immaterial, and Dr. Egan's defense of them on this ground indicates the entirely mistaken conception entertained by many examiners. Thousands of questions might be taken from standard works which would be quite inappropriate for a medical examination, and, while books of the class to which this particular chemistry belongs are well adapted to use in academies and colleges, they are seldom used in medical schools. Dr. Egan must know that in some of the leading medical colleges in this country no general chemistry at all is taught, and he is not correct when he says that this particular book is "used in the leading medical colleges of the United States," and if he had consulted the announcements of the schools, as I have done, he would not have made such a statement.

Dr. Egan's statement concerning the peculiar oxide of potassium which figures in question 5 is amusing, to say the least of it. Doubtless the K() that appeared in this question was a simple error. K2CO3 being intended, but even if we admit that such an oxide has an existence, I would ask whether Dr. Egan considers that a body not even mentioned in the last edition of Watts's Dictionary of Chemistry is a fair subject for an examination question in medicine! If he does think so, I fear he will find

few to agree with him.

And lastly, Dr. Egan fails to see that State examination papers in medicine should be adapted to others than "students," by which I suppose he means recent graduates. When I said that I doubted "whether one member in ten on our State boards, save perhaps the examiners in chemistry, could get forty per cent. on such a paper as this, I spoke advisedly. I did not say that recent graduates and men fresh from the study of general chemistry might not do so. Many men who appear before the State boards have been practising medicine for years, and the examination should be of such a nature as to test fairly their knowledge and determine their fitness to continue in practice, and if our State boards do not take this fact into consideration they need to be reformed, and the public will demand such reformation before long, and the creation of boards competent to deal intelligently and properly with the situation.

Dr. Egan's plaint that "it is difficult for examiners to prepare acceptable questions for six examinations yearly" is well calculated to excite our sympathy, but he can hardly expect it to be received as an excuse. WILLIS G. TUCKER.

Book Aotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. February 1, 1906, to February 1, 1907. An Account of the General and Special Clinical and Pathological Work done by Members of the Staff at the Institute during the Year. Edited by JOSEPH WALSH, A. M., M. D. Phila-delphia: Henry Phipps Institute, 1908. Pp. 430.

Each succeeding annual report of the Henry Phipps Institute is found more interesting and valuable to the student of tuberculous disease. only is the material considered in the statistics constantly increased—there are now nearly five thousand cases on the records—but each report finds the records more complete. The reader is struck by the thoroughness with which the material is studied from pathological, clinical, and sociological aspects, and there comes to mind the vast amount of valuable clinical material which slips through our dispensaries and hospitals with no further attention than a superficial search for "teaching material" or at best a proper examination and a very incomplete record. A critical study of five thousand cases of even the much despised leg ulcer would no doubt demonstrate one or two truths that are new. Furthermore, every one of the five thousand patients would be considered as a person with a leg ulcer instead of a leg ulcer with a person. Thorough study and full records take time, and at the Phipps Institute the work is divided among a large and en-

It is somewhat difficult to form an opinion as to the clinical results obtained, as four years is too short a period, and the different stages of the disease are all considered together, but for city treatment and a mixed class of patients the results seem to be remarkably good.

The report of the medical director, Dr. Lawrence Flick, is a general review of the statistical data, clinical and sociological, of the year. It deals with a remarkable number of items, and Dr. Flick's deductions from the statistics are conservative and reasonable. Some of the figures might be a little more explicitly defined, such, for instance, as the tables relating to temperature, pulse, and respiration. Here it is not stated whether the figures refer to the record on admission or to the maximum temperature, etc. Dr. Flick unconsciously corrects his own statement that a temperature of 100°, a pulse of 100, and a respiratory rate of 30 represent about the same relative disturbance, by statistics showing that "the percentage of cases which had a disturbance above this is much the highest in the pulse rate; next highest in the temperature; and lowest in the respiratory rate." Among the points brought out in this paper is the demonstration that there is no relation between the prevalence of right sided pulmonary tuberculous disease and right handed-

Dr. George B. Wood's study on the importance of the upper respiratory tract in the ætiology of cryptogenic infections, especially in relation to pleurisy, is of peculiar interest. According to Wood, the anatomical arrangement of the cervical lymphatics, with rare exceptions, precludes the possibility of a direct extension of infection from the tonsil to

The Pathological Report of the Year, by Dr. C. Y. White, is a record of sixty-six exhaustive autopsies, and furnishes an interesting study of the pathology of advanced tuberculous disease. The report of the bacteriologist, Dr. J. W. Irwin, brings out strikingly the rôle of the pyogenic bacteria as a terminal factor in the disease

A Comparison of the Pathological Findings with the Recorded Clinical Signs in Nine Cases of Tuberculosis of the Lungs, by Dr. Joseph Walsh, is a study in physical diagnosis checked by autopsy findings. The importance of such a study is self evident, and we are glad to note that Dr. Walsh intends to enlarge his series.

Other papers on the urine, the blood, the laryngeal findings, the pleura, the bones and joints, the relation of the pneumococcus to hæmorrhage, etc., represent a large amount of work and are well worth

Manual of Psychiatry. By J. Rogues de Fursac, M. D., Formerly Chief of Clinic at the Medical Faculty of Paris, Physician in Chief of the Public Insane Asylums of the Seine Department. Authorized Translation from the French by A. J. Rosanoff, M. D., Second Assistant Physician, Kings Park State Hospital, N. Y. Second American from the Second French Edition. Revited and Enlarged. New York: John Wiley & Sons: London: Chapman & Hall, Limited, 1908. Pp. 1x-406.

Attention has been called to the first edition of Fursac's manual. This author is one of the most thoroughgoing of the younger French school to accept the teachings of Kraepelin, and as such has given in short compass an excellent, though superficial, résumé of this author's teachings. It may be read with profit by those particularly who are unable to correlate French and German teachings in this difficult branch of medicine.

The translation has been well done, and many

crudities and even inaccuracies of the first edition have been eliminated. The French délire, we note, is correctly handled in this edition, whereas in the first there was much confusion in the translation of the term.

BOOKS, PAMPHLETS, ETC., RECEIVED.

A Manual of Clinical Diagnosis. By James Campbell A Manual of Clinical Diagnosis. By James Cambour Todd, Ph. B., M. D., Associate Professor of Pathology, Denver and Gross College of Medicine (University of Denver), etc. Illustrated. Philadelphia: W. B. Saunders Company, 1908. Pp. 310. (Price, \$2.)

On Means for the Prolongation of Life. Third and Entered Life in the Prolongation of Life. Third and Entered Life in the Prolongation of Life.

larged Edition of a Lecture delivered before the Royal Collarged Edition of a Lecture delivered before the Royal College of Physicians on December 3, 1903. By Sir Hermann Weber, M. D., F. R. C. P., Consulting Physician to the German Hospital, etc. London: John Bale, Sons, & Danielsson, Ltd., 1908. Pp. viii-214.

Les Préjugés sur la folie. Par la Princesse Lubomirska. Avec une préface de M. le Dr. Jules Voisin, médecin de la Salpétrière, président de la Société de patronnage des aliénés sortant. Paris: Bloud et Cie, 1908. Pp. xv-87.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service,

| during the week ending October 9, 1908: | |
|---|------------|
| Smallpox-United States. | 70 .1 |
| | s. Deaths. |
| California—Berkeley Sept. 12-19 Indiana—Indianapoles Sept. 13 - 1 | |
| Indiana—La Fayette S-t. 14-21 | |
| Indiana South Bend I | |
| Kansas—Topeka | |
| Ohio—Cincinnati | ī |
| Ohio—Cincinnati | |
| Tennessee—Nashvile | |
| Sandy v—Insular. | |
| Philippine Islands-Mar Fig. Aug 8-22 12 | |
| Smally v-Porcian. | |
| Aden Aden | 5 |
| Brazil-Rio de Janeiro Aug. 16-23751 | 36 |
| Brazil—Rio de Janeiro. Aug. 16-23 | 3 |
| Caulan Chamba Aug Sar | 1 |
| Ceylon—Colombo Aug. 8-15. 3 Ecuador—Guayaquil. Aug. 15-29. 3 | 9 |
| Egypt—Cairo Aug. 26-Sept. 2 3 | ĭ |
| India—Bombay Vig 1825. India—Calcutta. Vig 8.5. | 4 |
| India-Calcutta | 0 |
| Italy—General Sept. 6-13 5 Italy—Names Sept. 13-20 5 | 1 |
| Italy—Naples | 1 |
| Mexico-Aguasca! 12 | 1 |
| Mexico-Mexico City | 21 |
| Norway-Christian 14 | 2 |
| Peru—Callao | 14 |
| Russia—Warsaw July 28 Aug. 8 Turkey—Bagdad Aug. 22-20 | 6 |
| Turkey-Constanting sie Aug. 30 Sept. 6 | 8 |
| Yel. to Fere Firegn. | |
| Brazil-Manaos | 1 |
| Brazil-Para Sert 5-12 | 1 |
| Ecuador-Guayanui Aug. 10 22 | 1 |
| Mexico—Vera Cruz Oct. 2-7 5 Martinique—Fort de France Se t. 5-12 5 | 1 |
| Cholera—Insular. | |
| Philippine Islan & Mar Y No. 8 22 10 | |
| Philippine Islands—ProvincesAug. 8-221,729 | 1.186 |
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| China—Hankan | 1,35 |
| China- II wang | 1.0 |
| China-II o gkorg Ang 12 22 3 | |
| China Stanchar Stat to | P:: |
| China – Winesang To Aug 18. Indus– Homby Aug 18. Indus– G thoutta Aug 8.5 | 2.11 |
| Incha (doutta | 1 |
| India Malias Vig 1521 | 70 |
| Indo Chine (h ' | 4 |
| India Madras Vog 15 21 | 1 |
| Russia—St. P. tersleri | 1.2 |
| | |
| Azores- Laval | 4 |
| Azores Terecon To Sept. 1 | 2 |
| thile—Long to Set 18 | 3 |

| China-Hongking | 1112 15-22 | | 3 23 |
|-------------------------------|------------|---------------|------------|
| Chima—Hongking | in Chinese | hospital not | previously |
| reported.) | | | |
| Ecuador Guayaqui | Aug. 22 29 | | 1 |
| li ita-General | Aug. 15 22 | | 1,015 |
| Inma-Rombay | Aug. 18-25 | | 0 |
| India-Calcutta | Aug. 8-15. | | 14 |
| India-Rangoon | Aug. 8-15. | | 35 |
| Indo-China-Cholen | | | 3 13 |
| Indo-Can a - Augen | | | 4 4 |
| Javan-Awaji Island | | | 3 |
| Japan-Kobe | | | 4 1 |
| Peru—General | | | 2 9 |
| Peru-Callao | | | : |
| Peru-Lima | | | 4 |
| Torne & December 201 | | | 1 1 |
| Turkey in Asia-Bagdal | 102 20 20 | | 1 1 |
| Note-Plague at Trieste, Austi | ia, Septem | ber 21, denie | d. |
| | | | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 7. 1408:

BLANCHARD, J. F., Acting Assistant Surgeon. Granted two days' leave of absence from October 7, 1908, under par-

days' leave of absence from October 7, 1908, under paragraph 210, Service Regulations.

BRYAN, W. M., Assistant Surgeon. Granted thirty days' leave of absence, from November 1, 1908.

CARRINGTON, P. M., Surgeon. Directed to report at the Bureau upon special temporary duty October 3, 1908.

CARRINGTON, P. M., Surgeon. Relieved from special temporary duty at Washington, D. C., October 6, 1908.

Detailed to represent the Service at the Association of Williamy Surgeons at Atlanta Ga. October 12, 15, 16. Military Surgeons at Atlanta, Ga., October 13 to 16,

CARRINGTON, P. M., Surgeon. Granted six days' leave of absence while en roule to join station.

EARL, F. D., Acting Assistant Surgeon. Granted seven days' leave of absence, from October 7, 1908, and excused without pay for two days from October 14, 1908.

GOLDSEOROUGH, B. W., Acting Assistant Surgeon. Leave of absence for five days, granted September 16, 1908, amended to read three days.

amended to read three days.

Lewis, F. S., Acting Assistant Surgeon. Granted six

weeks' leave of absence, from September 20, 1908.

Marsillan, C. J., Acting Assistant Surgeon. Granted thirty days' extension of annual leave, from July 21, 1908, on account of sickness, and twenty-five days

thirty days' extension of annual leave, from July 21, 1908, on account of sickness, and twenty-five days' leave, from August 20, 1908.

RIDLON, J. R., Acting Assistant Surgeon. Directed to proceed to Stapleton, N. Y., for duty, reporting to Commanding officer, Marine Hospital.

WALKER, R. T., Acting Assistant Surgeon. Granted four days' leave of absence, from October 26, 1908, under paragraph 210, Service Regulations.

WERTENBAKER, C. P., Surgeon. Granted seven days' leave of absence, from October 5, 1908.

WERTENBAKER, C. P., Surgeon. Detailed to represent the Service at the Association of Military Surgeons at Atlanta, Ga., October 13 to 16, 1908.

WETMORE, W. O., Acting Assistant Surgeon. Granted three days' leave of absence, from September 10, 1908, under pararaph 210, Service Regulations.

WHITE, J. H., Surgeon. Detailed to represent the Service at the meeting of the Southern Medical Association at Atlanta, Ga., November 10 to 12, 1908.

WHITE, M. J., Passed Assistant Surgeon. Detailed to represent the Service at the Association of Military Surgeons at Atlanta, Ga., November 10 to 12, 1908.

Dr. J. R. Ridlon appointed an acting assistant surgeon for duty at Stapleton, N. Y., September 30, 1908.

Board of medical officers convened to meet at the Marine Hospital, Chicago, Ill., October 7, 1908, for the purpose of making a physical examination of an applicant for the position of cadet in the Revenue Cutter Service: Surgeon G. B. Young, chairman; Assistant Surgeon C. E.

Board of medical officers convened to meet at the Marine Hospital, Savannah, Ga., October 7, 1908, for the purpose of making a physical examination of an applicant for the position of cadet in the Revenue Cutter Service: Surgeon F. W. Mead, chairman; Acting Assistant Surgeon A.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for the week ending October 10, 1908.

Barney, Fred M., First Licutenant, Medical Reserve Corps. Ordered from Fort Myer, Va., to Fort McHenry, Md., for temporary duty.

BAYLEY, EDMUND W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month. BOWMAN, MADISON M., First Lieutenant, Medical Reserve

Corps, and Patterson, Edwin W., First Lieutenant, Medical Reserve Corps, relieved from duty in the Philippines Division, and ordered to the United States for

DUTCHER, BASIL H., Major, Medical Corps. Ordered to duty at Plattsburg Barracks, N. Y., at the expiration of his present leave of absence.

FOLEY, THOMAS M., First Lieutenant, Medical Reserve Corps. Assigned to active duty, and ordered to Fort

Moultrie, S. C., for duty.

FORD, CLYDE S., Captain, Medical Corps. Relieved from duty in the Philippines Division, June 15, 1909, and ordered to the United States; granted six months. leave of absence about December 15, 1908, with permission to go beyond the sea

Stoff to go beyond the sea.

FREEMAN, PAUL L., Captain, Medical Corps. Granted leave of absence for ten days.

HARRIS, JESSE R., Captain, Medical Corps. Granted an extension of twelve days to his leave of absence.

HAVARD, VALERY, Colonel, Medical Corps, and LYNCH, CHARLES, Major, Medical Corps. Detailed to represent the medical dearthcast of the Army at the prefixed of the medical department of the Army at the meeting of the Association of Military Surgeons, at Atlanta, Ga.,

October 13 to 16, 1908.

Hoff, John van R., Colonel, Medical Corps. Relieved from duty in the Philippines Division. December 3, 1908, and ordered to proceed to San Francisco, Cal., for fur-

KEAN, JEFFERSON R., Major, Medical Corps. Detailed to represent the medical department of the Army at the meeting of the Association of Military Surgeons, Atlanta, Ga., October 13 to 16, 1908, and on completion of that duty to rejoin his station in Cuba, having completed the duty for which he was ordered to the United

MABEE, JAMES I., Captain, Medical Corps. Granted an ex-

tension of two months to his leave of absence.

Schier, Anton R., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States.

SNYDER, CRAIG R., Captain, Medical Corps. Granted leave of absence for one month.

SLAYTER, JOHN T. H., First Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort William Henry Lawring Mark to his home Cambridge Mark and Harrison, Mont., to his home, Cambridge, Mass., and

STEPHENSON, WILLIAM, Major, Medical Corps, and PHIL-LIPS, JOHN L., Major, Medical Corps, Having com pleted examination for promotion at Washington, D. C., ordered to return to their proper stations.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for

the week ending October 10, 1908:

Cottle, G. F., Assistant Surgeon. Appointed an assistant surgeon, from October 3, 1908; ordered to a course of instruction at the Nava! Medical School, Washington,

DE FIGANIERE, P. A., Acting Assistant Surgeon. Appointed dered to a course of instruction at the Naval Medical

School, Washington, D. C.

Donce, A. H., Assistant Surgeon. Appointed an assistant surgeon, from October 3, 1908; ordered to a course of instruction at the Naval Medical School, Washington,

FARWELL, W. G., Passed Assistant Surgeon. from the Marine Recruiting Station, Philadelphia, Pa, and ordered to duty at the Naval Hospital, Philadelphia Pa.

FREEMAN, G. F., Surgeon. Commissioned a surgeon, from

August 2, 1908.
Higgins, M. E., Assistant Surgeon. Detached from the *Illinois* and ordered to the Naval Hospital, Canacao,

KOLTES, F. TES, F. X., Assistant Surgeon. Detached from the Connecticut and ordered to the Wilmington.

Mann, W. L., Assistant Surgeon. Appointed an assistant surgeon, from October 3, 1908; ordered to a course of instruction at the Naval Medical School, Washington,

MURPHY, J. A., Surgeon. Ordered to the Franklin.

POLLARD, J. B., Assistant Surgeon. Appointed an assistant surgeon, from October 3, 1908; ordered to a course of instruction at the Naval Medical School, Washington,

SMITH, H. L., Assistant Surgeon. Detached from the Missouri and ordered to the Villalobos.
SNYDER, J. J., Surgeon. Unexpired portion of leave re-voked; detached from the Franklin and ordered to the Marine Recruiting Station, Philadelphia, Pa.

Births, Marriages, and Beaths.

BALCOM—VON DÜRSCH.—In Providence, Rhode Island, on Monday, October 5th, Dr. F. O. Balcom and Miss Marie Eugenia von Dürsch.

DRAPER—FIRADEN.—In Shelbyville, New York, on Wednesday, October 14th, Dr. Edwin Lyon Draper and Miss Mary Frances Headen. EVANS—MORROW.—In Philadelphia, on Wednesday, Sep-

tember 30th, Dr. Roland Curtin Evans and Miss Jane

FISHER-BULLOUGH .- In Washington, D. C., on Wednesday, October 7th, Dr. Raymond Adams Fisher and Miss Elizabeth Stafford Bullough.

Greene-McKnew.—In Washington, D. C., on Wednesday. October 14th, Dr. Samuel H. Greene, Jr., and Miss Edna Isabelle McKnew.

ANDERSON.-In Salem, Ohio, on Thursday, October 1st, James Anderson, aged fifty-seven years

BIRCHMORE.—In Philadelphia, on Friday, October 2d, Dr. Woodbridge Hall Birchmore.

BLAIR.—In Cincinnati, Ohio, on Monday, October 5th, Dr.

J. J. Blair, aged sixty-one years.

Greenough.—In Boston, on Friday, October 2d, Dr. Eustace W. Greenough, of New Bedford, Massachusetts. aged twenty-nine years.

HADLOCK.—In Oswego, New York, on Thursday, October 8th, Dr. J. W. Hadlock, aged seventy-one years.

Heidemann.—In Elmhurst, Illinois, on Tuesday, Septem-

ber 20th, Dr. George F. Heidemann, aged seventy years.
Herschler.—In Buffalo, New York, on Thursday, October 1st, Dr. Albert A. Herschler, aged twenty-four years.
Holsten.—In Bridgeport, Montgomery County, Pennsylvania, on Friday, October 2d, Dr. George W. Holstein. aged eighty-seven years.

aged eighty-seven years.

KATTENHORN.—In Cincinnati, Ohio, on Saturday, October
3d, Dr. Henry F. Kattenhorn, aged thirty-nine years.

Loch.—In Norristown, Pennsylvania, on Saturday, September 26th, Dr. John W. Loch, aged seventy-eight years.

McGAUGHEY.—In Winona, Minnesota, on Sunday, September 27th, Dr. J. W. McGaughey, aged seventy years.

PARTZ.—In Philadelphia, on Sunday, October 4th, Dr.

August Partz.

Rogers.-In Harrisonburg, Rockingham County, Virginia, on Saturday, October 3d, Dr. H. M. Rogers, aged forty-

SALE.-In Bedford City, Virginia, on Saturday, October 3d, Dr. Frederick Sale, son of Dr. John W. Sale

SANDERS.—In Booneville, Kentucky, on Saturday, October 3d, Dr. S. G. Sanders.

Stern.—In New York, on Thursday, October 1st. Dr.

WISWELL.—In Philadelphia, on Sunday, September 27th, Dr. Miranda P. Wiswell.

Woon.—In Chicago, on Saturday, September 26th, Dr. Samuel E. Wood, aged sixty-nine years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and Medical News

A Weekly Review of Medicine, Established 1843.

Vol. LXXXVIII, No. 17.

NEW YORK, OCTOBER 24, 1908.

WHOLE NO. 1560.

Original Communications.

THE ALCOHOLIC PSYCHOSES. CHRONIC ALCO-HOLIC DELIRIUM (KORSAKOFF'S PSYCHOSIS).

A Chineal Lecture.

By Smith Ely Jelliffe, M. D., Ph. D., New York,

Clinical Professor of Psychiatry, Fordham University; Visiting Neurologist, City Hospital; Attending Physician, New York Hospital for Nervous Diseases.

I have already pointed out the immense rôle that the various types of intoxications play in the development of mental disturbances. We have seen that the toxic, infectious, and exhaustion psychoses have many signs in common, and that it may, for instance, be impossible to distinguish the mental disturbance due to the toxine of the influenza bacillus, from that due to the typhoid organism, i. e., seen purely from the mental side.

This same truth is to be seen in a much less marked form in the consideration of the toxemias of a genesis, chemically speaking, much more definite. For in the specialized type of mental disturbance, Korsakoff's psychosis—or polyneuritic psychosis—of which we shall speak, it is well known that the symptomatology will show a fairly uniform picture, notwithstanding a very marked variation in ætiology—alcohols, certain metals, lead, arsenic, diabetes, tuberculosis, carcinoma, puerperal infection at a series of the ser

tion, etc. We have just opened the discussion on alcohol in its relations to mental disturbance, and I have given you a picture of the effect of alcohol in its power to dissociate the mechanisms of both mental and neural integration: We have gone hastily over the subject of acute drunkenness, which from a medical point of view is a very definite psychosis. Whether it should be regarded as an insanity from the standpoint of legal requirements is a knotty problem. We have discussed that type of subacute or chronic poisoning known as delirium tremens; noted the extreme variability in its various aspects, and I have tried to show that in the analysis of this type of alcoholic delirium we may find many practical suggestions as to how to study other mental The relation of acute hallucinosis disturbances. to delirium tremens and to other forms of mental disturbance has been pointed out. You have been warned not to confound this type of an alcoholic psychosis with other more sinister mental disturbThere remains for discussion but two other fairly well crystallized groups in this alcoholic medley—those forms which show a tendency to chronic delusional development—the so called alcoholic paranoias, and the mental disturbance which is associated with a more or less marked degree of polyneuritis, the so called polyneuritic psychosis, or Korsakoff's psychosis. We shall take up the latter this afternoon.

History.—Alcohol has been the boon companion of man ever since we have any records. Acute and chronic drunkenness have probably always existed, and it is inconceivable that multiple neuritis with marked mental symptoms did not occur in ancient Greece and Rome; yet we cannot credit the Greeks this time with the knowledge of a polyneuritic psychosis. Magnus Huss has recorded that mental symptoms accompany neuritis as early as 1849.

The term Korsakoff's psychosis is more or less popular at the present time: Jolly, professor at Beriin, having used the term first in 1897. Up to the present time no one has shown that Korsakoff's description is not the first fairly complete and accurate account that we have. It is true that Jackson, in America, as early as 1822, in describing alcoholic multiple neuritis, says that in these cases "the mind is weakened, but that it is free from delirium ordinarily," from which by inference we learn that Jackson recognized the occasional presence of delirium.

Dr. M. Allen Starr, in his Middleton Goldsmith lectures in 1887, on Multiple Neuritis and its Relation to Certain Peripheral Neuroses, *Medical News*, February 5, 1887, p. 141, makes the following remarks concerning the mental features in certain cases of multiple neuritis:

One feature of alcoholic paralysis remains to be noted, viz., the cerebral symptoms. These are hardly ever wanting. There is, first, the excitement rising to the degree of active delirium, with illusions and hallucinations of the various senses: there is the insomnia which so soon exhausts the patient if it is not remedied; there is the loss of memory, especially of recent occurrences; and the lack of power of attention or concentration which prevents intelligent conversation. The indifference to bodily wants may be so great as to lead to uncleanliness, and since paralysis of the sphincter is the rare exception, incontinence is usually to be ascribed to the mental state. It is impossible to get any reliable history of their illness from these partients. Their statements are unintelligible or unreliable; and here it may be well to notice a symptom first described by Strümpell. These patients will relate occurrences as having happened recently with such elaboration of detail, when, as a matter of fact, the story is entirely a product of the imagination. Thus, one patient of my own, who had been confined to bed for many days, told me one afternoon that she had been out to see an eminent gynæcol-

¹Compare Dupré. Traite de pathologie mentale, 1p. 1131-1140, where a full list of atiological factors, some twenty-six or twenty-seven, are listed.

ogist during the morning, had gone to his office and waited for him several hours; had seen other patients there, and finally had been told by the doctor's brother that he would not return in time to see her, so she had come home again. And this was all related in apparent good faith, so that I have no doubt that she believed that what she said had occurred. With the possibilities of such delusions in view, it is evident that the statements of these patients cannot be accepted regarding anything, especially as to their own history. One patient who was admitted to Bellevue, during my service there, told me a different story of her case every day for a week, and it was only by interviewing her friends that the correct account was obtained.

In Starr's account it cannot be said that he grasped the causes for the falsifications of memory. He calls these statements delusions.

Names, after all, are but symbols standing for things, and the only requirement that science demands is that when a symbol is used, the user should have a clear and thorough idea of what is meant. It is for this reason that I shall quote to you at some length fragments from descriptions given by Korsakoff himself—then a privatdocent in the University of Moscow. I cannot give you his earliest descriptions, as they are published in Russian,3 but in 1890 (Archiv für Psychiatrie, xxii, p. 669), under the title of Ueber eine besondere Form psychischer Störung combinirt mit multipler Neuritis, he first calls attention to his earlier paper, published in (Vestnik Dushevnikl Polieznei, iv. No. 2) 1887, in which he describes a peculiar form of mental disturbance occurring in cases of multiple neuritis of nonalcoholic origin. This psychic disturbance is sometimes characterized by a very definite irritable weakness in the psychic sphere, at times in the form of confusion with marked characteristic mistakes with reference to place, time, and situation, and at times as a nearly pure form of acute amnesia in which memories of very recent events are profoundly modified, while events which took place in the past remain comparatively intact. Such a form of psychic disturbance, he writes, is highly characteristic of multiple neuritis of alcoholic origin. It does not, however, belong to alcoholic neuritis exclusively, but occurs in forms of neuritis due to other toxic agents, chief of which he held were toxæmias of gastrointestinal origin.

Korsakoff was aware of the fact that in literature there had been cases of multiple neuritis reported, in which psychic symptoms had been noted, but such mental abnormalities had not been carefully analyzed. In the article which I show you he reports two of his earlier cases showing the characteristic mental symptoms, in whom the neuritis was not of alcoholic origin. He then proposes the name cerebropathia psychica toxæmica-then follows the description of six cases of alcoholic multiple neuritis with the characteristic symptom picture.

These are the six cases which I have had the opportunity to observe in the past two years. They all have much in common; in the first place the psychic alterations bear a close resemblance. It is true that these vary, in one case being more marked, in another milder—but in all the most prominent symptom was a more or less deep disturbance of association of ideas and of the memories. In the severer cases there developed a complete loss of relation between the single ideas, while in the milder cases the ideas simply were mixed, the memories were tossed about, and

forgetfulness was very striking. In all of these cases it was specially characteristic that there was a marked confusion with reference to different occurrences, which often had no foundation in fact, which the patient would narrate in the most natural manner. In one case there was added to this condition a state of emotionalism, of anxiety, with accompanying hallucinations and illusions.

The presence of a neuritis was a second characteristic present in all cases, although varying considerably in its intensity. All cases showed weakness in gait, the rectus

femoris being involved.

Speech disturbances were noted by him, and in one case nystagmus. Summing up (p. 700) Korsakoff gives the following very terse description, which naturally has been somewhat enlarged at the

The fundamental symptoms of the disease are, as a rule, the following: A high grade of irritable weakness of the psychic spheres, then a more or less deep disturbance of association of ideas, and finally a clouding of memories. The weakest expression of the involvement of the psychic spheres in this disease seems to be an irritable weakness which shows itself in sleeplessness, in easy tire of the brain, which gives rise to fear and anxiety. Toward evening especially, the patients are easily excited, fear something, wait for something, literally are discontented with everything. To this, not uncommonly, may be added inability to concentrate the attention and the impossibility of ridding themselves of certain ideas, by reason of which compulsory ideas arise which are often of exciting or fearful nature.

Associated with these ideas arise many strange and impossible wishes. If the psychic disturbances go deeper the impossibility of the correct effort of thought becomes apparent, the attention is not any longer in a position to lead to the association of ideas, these ideas therefore become mixed, inconsequent, and incorrect in consciousness. Such a condition may develop acutely even in the beginning of the disease, or simultaneously with the initial symptoms of the multiple neuritis, occasionally before. In the majority of cases there arises in the beginning a condition of strong emotional disturbance, chiefly in the form of fear (panophobia) accompanied by distinct delirium, hallucinations, and emotional conduct. This irritable condition, as a rule, does not last very long, but either passes over into recovery or into a chronic state. This chronic form bears the character of a stuporous dementia, or an apathetic confusion.

The stuporous dementia shows itself in a deep disturbance of judgment, with associated delirious ideas, illusions, and hallucinations, often with short attacks of fury. In some cases the dementia reaches a very high grade, the patients become weak minded, uncleanly. During this period the symptoms of multiple neuritis such as an irregular, weak gait, disturbances of the patellar reflex, tremor of the extremities, sometimes due to the involvement of the cranial nerves, may all be present, so that one may confound the disease with paresis, and be surprised to find the patient get well. For the most part, however, such cases of neuritic pseudoparalysis are comparatively few

Cases with simple stupor, or with temporary excitement where the patients either get well in from five to nine months, or remain unchanged are the more common.

In other cases the chronic form of this disorder shows the character of an apathetic confusion, occasionally as an end stage there arises an acute hallucinatory fury with confusion, in other cases it develops gradually without any going on to such a furious stage. It is characterized by confusion of ideas, disorientation with reference to time and place, numerous mistakes and weaknesses in memory. The patients often do not know where they are, even when they are in their own rooms, confound the persons about them, call them by the names of those long dead, accredit to themselves actions which they have never done. These patients mix in a remarkable manner ideas of real facts with old memories to form very peculiar combinations of thought; the memory is as a rule deeply disturbed, the patients often forgetting everything of what goes on around them. As a rule such patients are comparatively quiet, apathetic, emotional states do not arise, at times there is a mild tendency to laugh or cry, and many patients who are quiet in the day time are excitable at night, talk constantly, cry aloud, are quarrelsome, want to get up and go about.

This form of confusion is most common, it appears in

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more marked, or less marked degrees, sometimes passing away with comparative rapidity, again persisting for a long time. For the most part it increases gradually and becomes so marked that the patient not only confounds acquaintances with strangers, but loses entirely the significance of

objects, words, and signs.

I have already said that in this form there is nearly always a clouding of memory, of a greater or lesser in-tensity, but there do occur forms of psychoses in neuritis in which the memory is disturbed, but there is a relative clarity of consciousness and of judgment. In these cases it is highly striking how the same patient, who is able to grasp clearly everything about him, who is able to follow serious conversation, yet whose memory is so distinctly involved that he literally forgets everything that has been said, and this forgetfulness reaches such a grade that the patient, five minutes after his lunch, does not remember that he has eaten it, he forgets with whom he has been, and what he has said. Amnesiæ of this type (amnesia acuta) limit themselves mostly in that occurrences which have taken place since the beginning of the disease, or shortly before, are forgotten, whereas that which has occurred in times long past often remains clear in the memory. The more severe the case, as a rule, the deeper is the amnesia In severe cases the memory of old events may also be bad, and in the mild cases recent events may not be entirely forgotten, but there is above all a forgetfulness, an inaccurate memory of time, etc., apparent.

The symptoms of the multiple neuritis, and the appear-

ance in the peripheral nervous system are not always developed in the same way in this disorder. In some cases they preponderate so that the psychic alterations, consisting for the most part only in an irritable weakness, constitute the background. Thus in some there arises a very severe form of multiple neuritis, which runs the course of an acute ascending paralysis, in others there is a long drawn out severe form of paralysis, hyperalgesia contributes and muscle atrophies. In other forms the peripheral and psychic symptoms show with equal force, and finally there are other forms in which the physical symptoms of neuritis may be present in mild degree, and may be entirely overlooked. This stage may be limited solely to the occur rence of paræsthesiæ in the extremities (feeling of coldness, feeling of binding about the feet or hands, tickling as of crawling of ants) with mild disturbances of coordination, and ready fatiguability in walking associated with altera-tions of the patellar reflexes, and mild pains in the extremities. Such cases should awaken our special interest since they come mostly to the attention of the practitioner.

In addition to the appearance of multiple neuritis, other symptoms appear which indicate disturbances of the nervous system; often they point to a local disease of the brain. Again the symptoms are those of a spinal cord disorder, then they seem to point to an independent disease of the muscles, a myositis which may be spread over many muscles. Nearly always there are signs which prompt one to state that the entire body is involved. General loss of flesh is noticed with a very distinct loss of power; the pulse is often very rapid and irregular and the urine is usually deep colored, in quantity, and shows a relatively high percentage of destructive products. Disturbances in the intestinal canal, obstinate vomiting, retained menses, and a slight increase

of temperature, etc., are usually found.

The course of the disease is also interesting and characteristic. For the most part it arises in consequence of a definite cause, whether that be exposure to cold, a previous acute disease, poisoning, or marked fatigue, or by a cachexia, which arises at the same time. Very frequently the disease begins with obstinate vomiting, following which the appearance of psychical disturbance in one or another form takes place. Frequently at the same time, often earlier, not seldom later the appearances on the part of the peripheral nervous system show themselves.

According to the onset whereby the disease is developed it may run an acute course, and reach its maximum in a short time. For the most part, however, it runs a subacute short time. course, and less seldom a very slow chronic course occurs.

If the disease develops on the basis of an incurable cachexia it terminates with the death of the patient, if this is not the case, however, there follows after the acute period of the disease, a second period in which the condition improves, the psychic and physical symptoms recovering in parallel manner. There are certain cases in which the psychic symptoms clear up sooner than the physical ones, and vice versa, where symptoms of the psychic alteration still remain after the disappearance of the multiple

The improvement is usually accompanied by a general increase in the strength, the interrupted functions again take their place, the body weight commences to improve, especially the functions of the nerves increase.

Very frequently there remains, after the cure, a very marked fatiguability of the nervous system, especially in the psychic sphere, and a great tendency to a recurrence.

With this description in mind as an original from the founder of this disorder, let me turn your attention to a patient who was admitted to the City Hospital about ten days ago.

CASE I.--J. K., twenty-nine years of age, a traveling salesman, an active, intelligent, able man.

This patient, as you see him lying in bed, presents an interesting type of physiognomy, to which I would like to call your close attention. It is neither normal nor yet markedly abnormal. You see that it expresses a fair de-gree of alertness but is a trifle stupid save when he smiles, which, as you notice, he does not infrequently. This slightly stupid expression, when you come to analyze it, is dependent largely upon the fact that the skin is swollen, the lips are slightly swollen, the eyelids droop somewhat, the eye-balls are slightly injected, and the fine veins of the nose and cheeks are somewhat prominent. The color of the face is a trifle unhealthy, being a little less bright as far as the lips and conjunctivæ are concerned than they should be, as though there were some modification of the aeration of the blood, which is probably accounted for by the somewhat quick and altered breathing.

In response to a question as to his name he tells you. with a laugh, that it is somewhat silly, that it is J. K.; that he is twenty-nine years of age, that he has been a traveling salesman selling shoes, and on asking him where he is, you will notice that he looks around, and says that he guesses he is here, and on wanting to know where "here" is, he tells us that "it looks like a hospital," and in response to the question "How long have you been here?" he tells us that he arrived this morning (whereas as a matter of fact he has been here nearly ten days). You may have noted that as I gave him my hand to shake, as we approached the bed, he lay motionless and nodded, but beyond some ineffectual movements of the arms was unable to take my hand. We shall examine into this a little later. On asking him what is the matter with him, he tells us that he feels all right; "Why do you not get up and walk?" you will note that his response is that he was up all the morning. out on the roof, and that the day before he had been walking all day, and he did not feel like getting up just now.

As he talks, note that his speech is somewhat halting, that the muscles of his face show slight tremors, and that his tongue, as he shows it to us, is coated and tremulous. He was partially asleep, you will recall, as we approached the bed, and should you turn away, you will find that he

will become somnolent again, or even seem stuporous. Testing his sense of smell, his sight, his hearing, his taste, his feeling to pin prick, etc., you will note that he answers more or less correctly. You will note that when I first approached him, some four or five minutes ago, I in-I hist approached him, some root of the himstes ago, I his troduced myself, and introduced you all as members of a class of young physicians interested in the study of mental disorders, and I now ask him what is my name, and you will notice that he is unable to reproduce it, and I tell it to him again at this time, and will ask you to remind me to ask him the same question again when we have finished our investigations. I will also tell him at this time the "polar story from your Outlines of Psychiatry with which you are familiar, and will ask him to try and tell it to us again at the close of the clinic, impressing on him the necessity for his holding it in his memory.

ty for his holding it in his hields?.

Further you will notice that as I ask him again where he had talls us that he is in the store. "What store?" is he tells us that he is in the store. "What store?" "Macy's"; and should we test him still further you would find that there is a very distinct loss of orientation, which as we have seen already involves time, since he has not been out of bed for ten days, and yet he tells us that he only arrived to-day; and so far as orientation in place is concerned his answers are still more confused and con-

tradictory.

Let us see what he did yesterday when he said he was

out walking all day. In response to my suggestion, "You remember that we sat on the wall and were fishing," he says "O yes! and those were pretty good fish that we caught." And in response to my further suggestion that it was a fine haul, he says, "Yes, more than three men could carry home," and I then am able to lead him to the story of a horseback ride that he took this morning with me, and with one of you whom I point out and whom he remembers perfectly as having been with him.

I call particular attention to this type of suggestion confabulation in this disorder which we have before us. It is very typical. As he still further rambles on, you will notice that he gives a very highly colored picture of his ac-tivities for the past week, he tells us of deeds that he has performed, which, in spite of the fact that he has been helpless in bed, paralyzed in his hands and feet, do not

seem to him to be at all incongruous.

You will notice that throughout all this conversation, my questions and his answers, that he is fairly alert, that his attention is fairly easily gained, but that he very rapidly wanders off into other fields which have nothing to do with the subject of the conversation, but that he can be very readily brought back again, showing a fairly light and easy grade of fixation of attention which, however, you can see is very superficial. You will notice, furthermore, that his grasp on things is very slight; that whereas he seems to understand what we are talking about it is very evident. that, beyond the merest superficial hold on the subject, it does not penetrate very deeply into his thought processes I have tested his book memory, his ability to multiply and subtract, to write the names of some of the Presidents of the United States, places in New York city with which he is familiar, and find out that his memory of things which have taken place in the past is fairly good, but that, the state of the past is fairly good, but that, for at least a period of six months, his memories are very poor, and are mostly supplanted by the confabulations of which we have already had ample illustration.

We did not notice the presence of any hallucinations. although when the patient at first came into the hospital at night he cried aloud, was uneasy, and gave evidence of having acute hallucinations of sight and of hearing. He was then in a mild state of delirium quite comparable to the

delirium of delirium tremens.

Asking him if he is a heavy drinker, of course he says that he "drinks a little beer, and a little whiskey, well, once in a while," and he finally is made to confess that perhaps he sometimes drinks a little more than he ought, but we learn from his wife that he has been a hard drinker for the past six months and more, and, for days at a time has been drunk.

I next call your attention to his arms and legs. You notice that he is able to extend his wrists with considerable difficulty, that the whole forearm is weak; he has some power to grasp the hand, but you will observe that it is very weak. Examination of the feet shows that there is a mild degree of foot drop, that extension is almost gone, and as we get him up to his feet to walk, he is hardly able to stand, walks with support, with his feet far apart, and the exertion is almost too much for him. His knee jerks.

arikle jerks, wrist jerks, and elbow jerks are all gone.

As I press upon the ulnar nerve, you notice that he winces, although my pressure is very slight. Pressure along the scratic provokes the same painful sensation, and the entire body shows marked tenderness on pressure of the skin and muscles, especially over the nerve trunks. I call your particular attention to his pupils, which you will perceive are unequal, and do not react to light, although they do to accommodation. In other words, this patient shows a fairly typical Argyll Robertson pupil. Let me add that upon his admission, ten days ago, there was almost complete paralysis of accommodation, and that the convergence reaction was very slow. I call your particular attention to the presence of this Argyll Robertson pupil, since you will find it recorded in reliable textbooks that this condition is not found in the disease which we have

A brief recapitulation of this case shows us a chronic drinker who has frequently been drunk and who came into the hospital unable to walk, with the signs of a multiple neuritis and an active delirium associated with hallucinations of sight and of hearing. That after he had lain in a semistuporous condition for a few days, his delirium abated, but instead of making a complete recovery, as many cases of delirium tremens do, we find him passing over into a chronic phase, in which he has some delirium at nights, although otherwise he is quiet and clear. His mood is more or less happy, and his general conduct is all that could be desired. He shows no marked alteration of personality and understands everything that is going on about him.

A physical examination shows unmistakable signs of polyneuritis, severe in grade-not causing complete paralysis of his arms or legs, yet involving

the reflex mechanism of the eve.

Mentally he shows some very striking changes. (I) In the first place there is a definite disturbance of his power of attention. He was not well oriented as to his surroundings, as to time, as to place, although this has improved somewhat. Now, at times, he seems to be correctly placed, and in half an hour later he may be distinctly lost. His sense of time is particularly involved, and he cannot tell within days how long he has been here.

(2) He further shows marked memory defects. A retrograde amnesia which stretches back several months. He has almost no ideas of what he has

been doing for some time past.

(3) To make up for these obvious memory defects we noted that the patient attempted to fill up the gaps by telling us of things that he had done, which were manifestly impossible. This confabulation is promptly negatived by another and then still another, and the patient by suggestion may be led to say almost anything. You may recall how easily one may suggest hallucinations to patients suffering from delirium tremens. This patient thus shows us two definite types of confabulation, the so called opportune confabulation, i. e., an attempt to fill up the gaps in his memory, and the suggestion confabulation already spoken of. Sometimes the patients will show a rich phantasy confabulation, built up largely on a basis of a mild hallucinosis. It is almost a dreamy delirium, similar in type to that which Regis assures us Hercules suffered in Euripides's tragedy of the Mad Hercules. In some instances the confabulation approaches very closely the delusions of grandeur of the paretic. Yet alongside of this active confabulation the patient interrogated with reference to old events is usually pretty clear and orderly. This is not the invariable rule, however, since much depends on how widespread the cortex may be involved in the neuritic process.

Before passing to the history of another case, let me say a few words concerning the general pathology of Korsakoff's psychosis.

Pathology.

The lesions which have been described in chronic alcoholic delirium, or Korsakoff's psychosis, do not differ in any essential respect from those that we know of when studying multiple neuritis; the varying symptom picture depends exclusively upon the distribution of the lesions. Furthermore, it should not be forgotten that, not only is the nervous system very extensively implicated, but that other organs of the body are also involved, so that one has to consider, for the graver cases at least, that Korsakoff's psychosis is a combined result of localized

neurological lesions as well as of a general toxæmia. A complete analysis of the pathological findings in the different cases would be beyond the purposes of this talk. I can only remind you of what I have said with reference to the distribution of the lesions in general paresis; it emphasizes the diversity in the clinical picture and its correlations in pathological involvement.

You will best understand the pathology of this intoxication by assuming the same type of degenerative changes in the neurons which are seen peripherally to be extended into the central nervous system. Thus the changes in the functions of the spinal nerves are to be explained largely by reason of peripheral involvement, and the changes in the psychical functions are due to more or less extensive intraneural disease. I shall again call to your mind the analogy which I outlined in discussing the subject of alcoholism, that alcohol is the great dissociator of function, and in the profound alteration in the psychosis in question we find that organic changes make permanent, to a greater or less extent, these dissociations which functionally are seen in the simpler types of ordinary drunkenness. It can thus be seen that Bonhoeffer, in assuming that chronic alcoholic delirium, which is his name for Korsakoff's psychosis, is practically nothing more than a prolonged and chronic delirium tremens, has not only the weight of evidence of symptomatology, but also the findings of pathological anatomy to support him.

It has only been in recent years that the degenerative changes in the brain stem, basal ganglia, and pallium itself have been subjected to critical analysis, more particularly by the methods of Marchi, Herxheimer, and Nissl. The initial changes are those of any type of acute toxic delirium; they need not detain us. The Marchi method utilized in the early stages of the disease. as Siefert has done in a case dying six days after the onset of the affection through a bronchial pneumonia, shows very widespread degeneration in the fibres of the pallium, the intracortical fibre network, and also the tangential fibres show signs of neuritic degeneration. In Siefert's case, in particular, the fibres of the central lobes bore the brunt of the

degenerations. Heilbronner has also found the same type of degenerative changes in the cortex, particularly in the central lobes, but he has also reported cases of two weeks' duration, and of six weeks' duration without any marked signs of degeneration. This latter finding is not difficult of interpretation, when we bear in mind how great a functional loss may be present without any necessarily permanent organic basis. In the various brains that have been examined an extraordinary amount of variability in the locations of the lesions has been observed, but in all cases one expects to find distinct changes in the fibres of the associated mechanisms, thus accounting for the clinical pictures. On the groundwork of the precise localization of such lesions one is unable on pathological foundation ofttimes to define between a Korsakoff syndrome of senility or of alcoholism. The bloodvessels usually show very characteristic changes. These are usually very widely dilated, and there is a tendency to an increase in the number of

small bloodvessels, somewhat similar to that which has been observed in the new vessel proliferation of paresis, rarely, however, reaching such a severe Hyaline degeneration of the walls is extremely common, whereas many of the vessel walls are thickened and arteriosclerotic. As in delirium tremens, so in chronic alcoholic delirium, there is a tendency to minute hæmorrhagic extravasations. These are found not only in the cortex, but also in the basal ganglia and nerve nuclei, and even in the peripheral nerves. Such extravasations are usually localized along the course of the bloodvessels, and not infrequently give rise to large degenerative masses, thus accounting for the localizing symptoms so frequently observed in Korsakoff's psychosis and in polioencephalitis superior (Wernicke). In this latter disorder it is only necessary that the extravasations should occur in the neighborhood of the nuclei of the eye muscles.

Miliary hæmorrhages are the rule, but occasionally they may be macroscopic in size. Thus in a case of Eisenlohr, a protracted delirium with dizziness, vomiting, and ophthalmoplegia (showing Wernicke's syndrome), there were hæmorrhagic foci in the region of the third ventricle and of the aqueduct at least one to two centimetres in diameter. Bonhoeffer has described a case of Korsakoff's psychosis, which resulted fatally, in which a large hæmorrhagic area was found in the cerebellum.

As a rule the changes are of a noninflammatory nature, but it must be borne in mind that the precise significance of many of the anomalous cells found in these cases has not yet been established. I can only refer you again to Alzheimer's monograph, already referred to, and also to some recent work of Perusinis on the Körnchenzellen done in Alzheimer's laboratory.

Changes in the neighborhood of the nuclei of other cranial nerves are known, and it is highly probable that many of the cases of sudden death are due to involvement of the vagus nucleus. Thomson, Gudden, and Strümpell have reported such findings.

Changes in the spinal cord are no less striking than those in the cortex iself, especially degenerations in the columns of Goll and Burdach. Degenerative changes in the intermedullary portions of the anterior horn cells, in the pyramidal tracts, and the lateral cerebellar tracts, have been described by Heilbronner.

Summarized then we see that a diffuse, severe, destructive process is at the foundation of Korsa-koff's psychosis; that such process involves the entire nervous system very irregularly, including the parenchyma, bloodvessels, the fibres, with the frequent occurrence of small hæmorrhagic foci. Such a process is not pathognomonic for Korsakoff's psychosis by any means; certainly, in the acute stages, the clinical as well as the pathological picture is not distinct from other acute intoxications. However, study may show that the chronic processes are characterized by types of localization not found in other mental disorders, but at best the research involved is time consuming and extremely difficult.

With such a varying pathology, withal so definite, and apt to follow certain trends, the symptomatology becomes all the more interesting to in-

Let me call your attention to another case which you saw in the Bellevue wards about three weeks ago, and which you now find in Ward's Island.

shall be very brief with this case. CASE II .- L. W., forty-two years of age, married, housewife, two children. She had been a moderate drinker for several years, but of late had lost powers of self control and was taken to Bellevue in an attack of delirium tremens,

which was not her first offense She had been having a steadily advancing neuritis for a short time previous to her admission, and while there as you saw her, you will recall an active delirious patient, with hallucinations of sight and of hearing, the former predominating, and yet unable to move her arms or legs, by reason of a flaccid paralysis and with lost knee jerks. tient's pupils were unequal, were sluggish to both sight and accommodation, but there was no marked Argyll Robertson

After her initial delirium she did not clear up as is usually the case-Bonhoffer tells us that about three per cent. of the cases do not, and go on in the manner in which this case has progressed. It is now four weeks since we saw the case in Bellevue while in its delirious phase, which phase is present in from fifty to sixty per cent. of the cases, and in which condition many of the patients die. She still presents the signs of a multiple neuritis, although the paralysis is not so marked as it was, and the indications that she will make a partial recovery at least

The chief interests in her case consisted in the mental symptoms. She had been more or less somnolent throughsymptoms. She had been more of less sommored through-out the time and had shown during the past week unmis-takable signs of asymbolia; i. e., she had not known her-bed, put her clothes on upside down, and did not recognize which clothes were which.

At the present time she speaks clearly but has been para-At the present time site speaks clearly but has been para-phasic and paralexic; even now she reads badly, only partly understanding what she reads. You may recall another patient that I showed you who tried to read with the newspaper reversed. She is badly oriented as to time. Does not know the year, or month, or day; nor can she tell how long she has been here, although she seems perfectly clear superficially. It may be of interest to recall that all of the sensory perceptions may be involved, or, as in a case described by Liepmann, the patient was inattentive to and unable to grasp optic perceptions only.

She has a mild degree of retrograde amnesia, yet you find her comparatively clear for events which antedate her last drinking bout. Her memory for recent events is very bad. She cannot remember anything ten minutes. What she had for lunch has gone from her recollection.

You noted an interesting feature of her confabulations,

She was all the time talking about her children. She told you she had been playing with them this morning, and was apparently in a comparatively happy mood notwith standing her deplorable condition. She gave a number of pseudoremissences regarding her husband and children. The type of confabulation here was of the opportunity type, rather than of the suggestive variety which we saw in another case, J. K. You noted she was less liable to take hold of my suggestions, but wandered on in a sort of fantastic dream about the children

food of my suggestions, our wantered on me a soft of fair-tastic dream about the children.

For the past week the patient remained apathetic, and had no initiative. As in our other case, it was possible to gain her attention quite easily, and the quick response gave one the idea of an active intelligence, but you noted the attention soon wandered, and in the wards she was never able to go on with anything she started to do. There was a distinct difficulty in her ability to grasp ideas. There was no change in the patient's ability to reason on ordinary topics; than the patient's abinty to reason on ordinary topics; her personality was not altered, and beyond the memory defects, and the confabulation, she seemed well mentally. Her mood was for the most part happy, but toward evening she was apt to get anxious, and at times cried very easily.

Permit me new to call your attention to the neuropathological disturbances which may occur in Korsakoff's syndrome. The cases which I have

shown you exhibit a number of anomalies to be noted, but you are probably aware-from your work in neurology-how very extensive, and vet how variable may be the changes in multiple

Cranial Nerves.—So far as changes in the sense of smell are concerned there are no observations on

The optic nerve is frequently involved. There may be a temporary or a permanent optic neuritis. Wernicke has recorded retinal changes similar to those found in acute hydrocephalus. Optic neuritis with hæmorrhage has been observed, and irregular pupillary pallors are frequently seen. Central scotomata to certain colors, a not infrequent picture of the neuritis retrobulbaris, has also been found.

Inasmuch as there seems to be no doubt that a true optic neuritis may be seen accompanying Korsakoff's syndrome it behooves one to be on one's guard relative to the distinctive diagnosis from tumor, for instance, abscess, or meningitis. occurrence of a temporal pallor, reported by Bonhoeffer, Oppenheim, Strümpell, and others should be borne in mind in the distinctive diagnosis from multiple sclerosis.

Pupillary disturbances are so common as to have been recognized by almost all observers. Dreschfeld, Kiefer, Gudden, Möli, Thomsen, et al.

It is peculiar, however, that little mention of them is made in English literature. White is practically the only American author who notes them. pupils are frequently unequal. The reaction may be slow; there may be true Argyll Robertson pupil, or there may be paralysis of accommodation. Oppenheim has reported such a case," and I have had one in my service at the City Hospital showing the phenomenon, which cleared up in about four weeks. Myosis is the rule, the pupils being very small. Nonne, however, speaks of a case with marked dilatation of the pupil. I have seen several cases in the Bellevue psychopathic ward, especially in patients suffering from the initial delirium.

Weakness of the eye muscles is common, the abducens seeming to suffer more than the others. Nystagmus is not rare, and ocular palsies not infrequent. In view of these complicating eye symptoms it may be seen at once that the distinctive diagnosis from paresis, or Wernicke's polioencephalitis superior comes into review. In the presence of disturbances of associated eye movements the diagnostic difficulties become even more acute.

Pain in the trigeminus is not rare.

Speech difficulties are very frequent. They are complex in causation. The facial, hypoglossal, and subcortical innervation may be severally involved. Bonhoeffer (l. c.) states that difficulties in tongue movements are common. This is my own experience. Roth¹³ and Kast ¹⁴ report lingual atrophy. Such findings are rare.

The facial nerve is not spared. Whereas its im-

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plication is not an infrequent accompaniment in multiple neuritis without mental involvement, it seems to be rare in Korsakoff's syndrome. Knapp, in his recent monograph, states that he has never observed it. Paralysis of the soft palate has been seen by Bonhoeffer. Ptosis is not infrequent.

The vagus is frequently implicated; pulse anomalies being exceedingly common. Cyanosis, tachycardia, a characteristic dyspnœa, and short breathing indicate its disturbed action. Frequently the pulse runs up to from 120 to 130, while Knapp (l. c.) reports cases of vagus irritation, the pulse dropping to 38 beats to the minute, accompanied by marked reduction in temperature.

Bulbar symptoms, difficulty in swallowing, etc.,

are rare, but have been observed.

So far as the upper extremities are concerned, they are less frequently involved than the lower. Pain, paresis, or paralysis with atrophy, especially in the distal portions, are to be expected, and there

is frequently marked ataxia in the arms.

The lower extremities are usually more severely implicated. The gait is frequently widespread, or halting, occasionally steppage; rarely it shows the cerebellar swaying. Occasionally it is typically tabetic in character. The peronei are most often involved, although Knapp's experience points in other directions. The quadriceps are also implicated, Bonhoeffer says, as frequently as the peronei. The knee jerks are usually lost, although in a few anomalous cases they are increased, and Knapp reports a case of ankle clonus.

I have already alluded to a case with quadriceps paralysis, the peronei remaining comparatively

active.

The sensory and trophic disturbances are in accordance with what is known for alcoholic neuritis.

The bladder is not infrequently involved.

It may thus be seen from these symptoms that a distinction from tabes dorsalis may be necessary. Symptomatically this may be impossible in the early stages. Furthermore, the two conditions may co-exist

Temperature depression is the rule. This may be due, says Knapp, to an involvement of the vasomotor centres in the medulla. This depression may exist for months, the temperature remaining about 95° F. for all this time. Such subnormal temperatures are noted in cases of mental disturbance associated with brain tumor, and abscess, and in paresis. Other vasomotor disturbances, such as transitory cedemas, transitory erythemas, are of occasional

Focal Symptoms.

Certain focal symptoms are of particular interest. In discussing the pathological findings I called attention to the changes in the brain stem and subcortical ganglia and to degenerations in the fibre tracts of the cortex. I spoke of the hæmorrhagic foci that occasionally were present, and also inferentially called your attention to the fact that oft-times the degenerations in the fibres themselves were clustered or concentrated, so as to form pseudofocal lesions. In many of the chronic cases we have to consider the focal symptoms as largely due to such concentrations of the diffuse degenera-

tions present throughout the brain area. Some of the more important neurological symptoms remain to be discussed.

Speech.—Those of speech are perhaps the most striking. So called stuttering speech of chronic alcoholism, especially in the delirious, is frequent. Korsakoff himself, in his original description, which I have already given you, called attention to it. Such speech disturbances may be of purely cortical origin, although Bonhoeffer is inclined to think that

they are mostly bulbar.

Motor aphasia.—This has been observed in a number of instances, in fact, many cases of profound Korsakoff's psychosis usually seem to show a motor aphasia. It is of the transcortical type, however, which has been called by various authors a pseudoaphasia (Tiling), a parakinetic aphasia (Knapp), sensory aphasia (Pick), Bischoff, Liepmann, Bonhoeffer, Wernicke, Gudden, have all reported cases in which sensory aphasia of greater or less degree

has been observed.

It is natural that in a disorder showing such diffuse changes in the cortex the sensory apparatus should be involved. Knapp has reported a case of word deafness, Bonhoeffer several cases of paraphasia; amnesic aphasia and echolalia are known.

Reading disturbances.—Many cases of Korsakoff's disease showed marked disturbance when reading; false words are read, many small words left out or frequently interjected. Knapp has suggested the term "confabulatory reading disturbance" for the most typical of these changes.

Disturbances in writing are equally present. Perseveration, incoherence, verbigeratory writing are common. Patients very frequently write their names over and over again, and the same character of confabulatory feature may be present in the writing as in the speech or reading. Bonhoeffer has reported a case of sensory aphasia agraphia.

Apraxia.—Liepmann's ideatory apraxia is not infrequent in this disorder; such cases have been recorded by Liepmann, Knapp, Gudden, Wernicke,

and Bonhoeffer.

Transitory homonymous hemianopsia, word blindness, soul blindness, cortical taste paralysis, asymbolia, agnosia are among some of the rarer disturbances observed.

In a number of cases epileptiform attacks, which may be unilateral or bilateral, occur. These are very frequently associated with an active delirium, are accompanied by unconsciousness, and in most respects resemble an epileptic convulsion. Apoplectiform attacks occur less often although pseudoapoplectiform attacks are by no means rare.

Clinical Forms.

I have said enough to indicate that great variability exists in the general clinical form in these patients. Truly speaking, the erection of hard and fast types is more or less pernicious in such a kaleidoscopic affection, yet certain trends or tendencies of development are worth recording. This I shall do, telling you the forms described by two authors who have made special studies. Dupré, who in Paris sees all of the prisoners of that large city suspected of any mental disturbance, has written, in the textbook already cited, an excellent

résumé of the disease. He gives five clinical forms: (1) Amnesic form, in which the profound involvement of the memory stands in the foreground. (2) Confusional form, in which the mental haziness remains, the patient remains heavy and stupid, speaks slowly, vaguely, and hesitatingly; is inert, indifferent, unstable, undecisive, and anxious. (3) Delusional form. Here the patient shows a characteristic dreamy delirium. The combination of loss of memory, mental confusion, suggestive hallucinations, loss of critical power, automatic pseudosensory dreaminess-makes the patient carry on a line of capricious and incoherent waking life. The patients are frequently attacked with delusions of persecution; or have ideas of negation, or of a depressed hypochondriacal type. These are usually fleeting conditions, but may form the basis of a secondary systematized delusional state. (4) Anxious form, characterized by the predominance of ideas of disquietude, of anxiety, of panphobias, and active emotional reactions. Emotional paroxysms usually are worse at night. The depressions are largely affective rather than intellectual. (5) Demented form, in which the major trend is toward marked intellectual enfeeblement. The asthenic and typhoid types of this form usually lead to a more or less rapid death.

Knapp's monograph, already cited, distinguishes: (I) Delirious form, which is present in the beginning at least of two thirds of all patients with this psychosis. (2) Stuporous form, quite comparable with Dupré's Confusional Form. (3) Demented form. (4) Hallucinatory form with hallucinatory excitement and hallucinatory confusion, without any systematization of false ideas. (5) Hallucinatory form with systematization, quite comparable with Wernicke's acute hallucinosis. Ideas of reference and anxiety producing hallucinations are frequent. Ideas of injury arise, and ideas of persecution are not infrequent. The confabulation in these patients is filled with ideas of injury. Many of these cases are diagnosticated as paranoias, especially if the neuritis is comparatively mild. (6) Paranoid forms with episodic attacks of delusional interpretations or pseudoreminiscences of being persecuted. Illusions are not infrequent, and the patients are continually explaining their sensory perceptions by the delusional assumption of external ideas of influence. Ideas of reference and of injury are frequent; being electrocuted, magnetized, etc., are not infrequent; being hypnotized by their enemies they are unable to walk, etc. (7) Anxiety forms. (8) Expansive forms, in which ideas of grandeur appear in the confabulations. These cases are frequently diagnosticated as cases of paresis, and enter into the statistics of some physicians as "cured cases of paresis." (9) Manic and melancholic forms. Such are rare. (10) Polyneuritic motility. rare. (10) Polyneuritic motility psychosis of Wernicke is a type well recognized by those acquainted with Wernicke's teachings. It is a melange with characteristic motility changes, into which we cannot enter here. (II) Anomalous forms with irregular psychical anomalies. Some patients show impulsive ideas; others a peculiar foulness of thought-obscenities constantly obtruding themselves upon them-others show typical Vorbeireden.

Diagnosis.

Little, in addition to what has already been said, need be taken up in the discussion of the diagnosis. The chief danger point is the elimination of general paresis, and mistakes may occur either in the prodromal period, during the acute initial state, during the chronic stages, in which the patient's disorder remains stationary, or in the terminal phases.

Irregularity and excessive mixture of symptoms with bizarre groupings make one think of paresis rather than of a Korsakoff, but it should not be forgotten that there are a number of cases of true paresis which run a course very similar to that of a Korsakoff, so that not only is it essential that one should not mistake a Korsakoff for a paretic, but the obverse is true, although less liable—one should not falsely diagnose a paretic as a Korsakoff. Naturally the use of spinal puncture and the cytological examination of spinal fluid has cleared up a number of the difficulties with which psychiatrists formerly had to deal, and has given a precision which has heretofore been lacking. The Wassermann-Plaut serum reaction should also be tried in all doubtful cases.

In the acute delirious stages, Korsakoff's psychosis may be mistaken for a number of things, and it is practically impossible to state with certainty just what the condition may be. Thus the distinction of Korsakoff's delirium from a recurrent delirium tremens or a polioencephalitis hæmorrhagica superior may be impossible. In the stuporous forms and apoplectiform forms, acute internal hyprocephalus and meningitis may have to be borne in mind.

Course.

The course of this disorder is extremely variable. Many patients, following the acute delirium, enter into a chronic, stuporous state, and die in from two to three weeks; others go on in a less stuporous apathetic condition, gradually growing weaker and weaker, and at the end of three or four months die. These patients frequently show the accompanying effects of disturbance of the liver and kidneys. There may be ascites, ædema, albuminuria, etc. Some patients die of quickly developing miliary tuberculosis.

A comparatively large proportion gradually recover from the effects of the acute delirium and go into different stages of restitution. The grade of restitution is impossible to tell in advance.

The age of the patient, the number of attacks of delirium tremens, the physical condition, the cause of the neuritis, whether alcohol or one of the many other causes—all these determine in some measure the outcome.

It may be said that but few patients make a complete recovery. A number make such recoveries that only a skilled observer can detect the impairment, but impairment in some degree usually persists. Still, after a number of years of careful treatment, in patients who may be carefully treated, a restitution ad integrum may be posited.

The most frequent cures are those in which only a slight intellectual weakness persists. The amnesias clear up, but the patients remain more or less incapable of sustained, efficient effort. They may become good dilletantes in intellectual pursuits, but rarely accomplish much. Every patient is worth

working for, however, and when defects are found to exist, psychological pedagogy may be interested to repair the defects by building up associations in heretofore unused tracts which presumably have not suffered any loss.

Treatment.

The treatment differs but slightly from that which you already know to be laid down for multiple neuritis. The preliminary indication is to allay irritability as much as possible, further treatment should retard degeneration, conserve function, and finally aim to educate the damaged organ to better working. In order to allay irritation, hot baths are useful, both to control the delirium, and to limit the pain; hot packs may be used if a hot bath is not at hand. Other eliminative measures in addition to heat should be encouraged for a certain time. Thus fair catharsis and active diuresis should be encouraged, since there is a marked tendency for serous extravasations, which may be even hæmorrhagic, into vital centres, and it is essential to keep the blood pressure within normal limits. usually best accomplished by heat, but it may be necessary to keep the internal and external capillaries fairly well dilated by pressure reducing drugs -drugs that cause excessive vomiting are preju-

It is highly important that the nutrition of the patient be maintained. Overfeeding, as soon as the stomach will permit, is a *sine qua non* in the treatment of Korsakoff's psychosis, which overfeeding should include a high percentage of fat. Milk, butter, and eggs are the most palatable of these foods.

Whether there is any direct lesson to be read from the teachings of Meyer and Overton concerning the relationship of fat and alcoholic absorption I do not know, but it seems reasonable that if the absorption of alcohol in the nervous system stands in more or less direct relation to the solubility of the alcohol or other narcotic in fat, that one should bear this word picture in mind, and realize that fat destruction is an integral portion of the pathology of Korsakoff's disease.

Whether other forms of fat producing food would be better than those that I have mentioned I do not know; that is one of the problems of construc-

tive metabolism.

The neuritis needs to be treated by methods with which you are undoubtedly familiar, massage, elec-

tricity, and strychnine.

As to the training of the memory, little progress has yet been made so far as the acute stages are concerned. The patient's grasp of things is so slight and so evanescent that applied pedagogy will bring its own reward in loss of time and effort; but later on in the course of the affection a true scientific pedagogy may need to be called upon, especially if the defects observed are more or less localized. If it is found, for instance, that the patient's optical memories seem to have borne the brunt of the storm and have been left with reduced capacity it may be desirable to apply the principles of a constructive education to other less affected receptors or their connections. In these cases each patient is naturally a law unto himself, but there is little doubt that many cases of Korsakoff, which seem to be helpless, and which go on to a terminal dementia for lack of initiative on the part of the physician to search out what part of the mechanism may still be utilizable, might be helped if the principles of scientific peda-

gogy could be applied.

In the actual treatment of these patients, after the neuritis has recovered to such a degree as to permit of a more or less free going about, occupation cures promise the most. For the more well to do, outdoor games, horseback riding, golf, swimming, are desirable. Carpentry, blacksmithing, bookbinding, or even manual labor on a farm, or training in the open, is advisable.

One principle should not be forgotten in all your therapeutic efforts, and that is not to overdo them, bearing in mind that excessive physical work calls for an amount of nervous functioning just as mental work, that no adaptation to hit even a golf ball correctly can be carried out without an immense amount of nervous functioning, and that therefore in the earlier stages those games or occupations should be chosen which do not call for a high degree of nervous tension—such as the lazy lolling about of swimming—and that no exercise treatment should be overdone. Hard muscles, ruddy cheeks, ability to run twenty-five miles after a dog cart, these may be the delusive signs of a healthy musculature at the expense of mental restitution.

Naturally I need not insist upon the avoidance of all tonics which contain alcohol in any form, especially such tonics as peruna and the ilk, some of which I have known to be responsible for the de-

velopment of Korsakoff's psychosis.

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DIAGNOSIS OF ERYTHEMATOUS AND EXAN-THEMATOUS RASHES.*

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The dermatologist approaches his cases in a different attitude from the internist. The physician asks his patient "What is your principal complaint?" and "How long have you been ill?" He first gathers up the history and symptoms, and striking a balance makes a provisional diagnosis. He then seeks for the physical signs and revises or confirms it. The specialist says: "Have you something the matter with your skin? Take off your clothes and let me see it." The lesions being all upon the surface, he is taught to "look and say." Having made his diagnosis, he may inquire into the history. If that is corroborative, all is well. But if not, it has been said "so much the worse for the history."

An eruption well described can often be recognized by the specialist without seeing the patient. Dermatology has a patois of its own, and at the risk of being tedious, and of reviewing what you already know, I will recount briefly the common lesions of

the skin.

The color of the skin is a combination of the creamy white of the connective tissue, the brown pigment in the epidermis, and the varying shades of

[&]quot;Read in part before the Medical Society of Westfield, N. J., April 7, 1908.

the blood in the dermal capillaries. The blood may vary from pale to deep scarlet, to crimson, and on

through the purples to bluish black.

A localized change in the color of the skin without swelling is called a macule. Macules are usually pinhead to lentil sized, though they may be as large as a dime. They may be due to an increase of the pigment, of which a familiar example is freckles. But more often there is a change in the circulation and dilatation of the papillary loops as is seen in scarlet fever, measles, and the indigestion and drug rashes.

If now there is a spasm of the muscular coat of the dermal vessels, there will be a whitish elevated spot surrounded by a red border. These lesions are called wheals, and commonly follow the bites and stings of insects. On sensitive skins they may be seen after the use of the hypodermic needle.

A thickened spot in the skin is called a papule. There is a deposit of plastic exudate in the true skin. These elevations can be felt by passing the ends of the fingers lightly over them. And if the skin be stretched they do not disappear. Larger infiltrations involving deeper structures are called

tubercles.

A droplet of serum separating and elevating a portion of the cuticle forms a vesicle. Large vesicles are called blebs or blisters. Vesicles are often surrounded by a red border. They may be single or multilocular. The layers of cuticle covering them may be few and thin, in which case they rupture easily, or the walls may be thick and firm.

Small collections of pus are called pustules. They may come from changes in vesicles or they may

arise de novo.

Small hæmorrhages into the skin are called petechiæ, and if they are arranged in straight lines are called vibices.

Many diseases are accompanied with increase in the horny layer which is later thrown off in scales. The process is called desquamation. If the scales are fine and branny it is furfuraceous. If the cuticle comes off in large flakes, the desquamation is lamellar.

An inspection of the visible mucous membranes affords valuable assistance in the diagnosis of many eruptions. Of course the most convenient are those of the mouth and throat. The anatomy of the mucous membrane is similar to that of the integument. Only the horny layer is lacking. Owing to the absence of this protective layer the vesicle soon becomes a superficial ulcer and the papule a mucous patch.

Macular Eruptions.

Suppose now a patient is brought before you, a well nourished boy of five years, covered with a brilliant and finely punctate rash, more abundant on the trunk than on the face, the nates and parts subject to pressure of a uniform redness, in other places the intervening skin slightly ædematous and of a yellowish color. The child has a high fever and a rapid pulse. The submaxillary glands are enlarged. The tonsils and uvula are much swollen and bathed in transparent mucus. The color of the fauces is livid, and there are a few punctate maculæ on the roof of the mouth. There is a singular absence of the eruption from the central part of the face pro-

ducing a white ring about the mouth that is pathognomonic. The diagnosis is scarlet fever. The tongue is coated with a white fur through which some of the larger papillæ show. This is not the "strawberry tongue." A few days later in the disease the epithelium will be shed from the edges of the tongue leaving a bare surface with a crenated or scalloped border, the convexities toward the centre. These denuded areas are red in color and the swollen papillæ give them a striking resemblance to a red raspberry or strawberry. The exudate upon the tonsils will also become cloudy from the admixture of white blood corpuscles, and the physician then is apt to think that diphtheria has supervened. One must not forget, however, that diphtheria does often complicate scarlet fever.

Suppose now another case. A girl, twelve years old, has a punctate rash on the neck and hands, no fever, no angina, no change in the buccal mucous lining, no adenopathy. A slight ædema of the hands causes some stiffness and a feeling as if they were encased in tight gloves. No eruption on any other part of the body. She has a simple erythema. It is very difficult to distinguish between this harmless eruption and mild cases of scarlet fever. The resemblance is so great that sometimes it has the right to be called scarlatiniform. Some cases may be held in suspicion for three or four days until we are sure that no angina will develop or desquamation follow. In this connection may be mentioned erythema multiforme, which is more general in its distribution, presents a greater variety of lesions, and may be accompanied by nodular swellings on the extremities. There may be slight fever and a coated tongue. It seems to depend on autointoxication from retained fæcal matter.

Suppose again, a fair blonde child of four years, with flushed cheeks, a scarlet macular eruption irregularly distributed over the body, pinhead to lentil sized and somewhat itchy. There may be redness of the faucial arch. On inquiry you will learn that the child had symptoms of a cold and had been given medicine to break it up. If the family believe in regular practice, it was quinine or antipyrine. If of the homocopathic persuasion, it was belladonna, either with or without aconite.

After the injection of antitoxine a rash appears in one half the cases. It usually begins near the site of the injection and spreads in all directions. It may be macular erythematous in type, or may be in small wheals, urticarial. In the latter case it is very itchy. Papular urticaria from other causes

may also be mentioned in this connection.

Suppose now a young woman, with a rose colored, macular, lentil sized eruption, which has come out suddenly overnight on the face and is spreading over the body, with a fever of 102° F., malaise, headache, and backache. She has slight coryza and conjunctivitis. The fauces are injected, and the macular rash is reproduced on the soft palate. The tongue is coated, red papillæ showing on the edges. The submaxillary glands are not much swollen, but those of the posterior cervical chains are notably large and tender. The epitrochlear, the axillary, and the inguinal, both of the groin and Scarpa's space, may be involved. The macules vary in size from a pinhead to a small bean. There is a slight

ædema of the spots giving them a papular appearance especially on the forehead and around the mouth. She has rubella, or German measles. When the larger macules preponderate, the rash resembles true measles; when the smaller, scarlet fever. It is the latter, or punctate, form which has been recently described by Clement Dukes as the "fourth disease."

Let me conjure again and bring up a sturdy boy of fifteen years. He has a high fever (104° F.), coryza, conjunctival injection, and photophobia, and an extensive erythema of the upper lip. He coughs incessantly, is hoarse, and complains of dryness of the throat. The tongue is heavily coated, the fauces deeply injected, the palatal and buccal mucous membranes covered with a partially diffuse crimson eruption in which appear faint, blue white dots. On the sides of the neck an irregular lentil sized, crimson, macular eruption is visible. He is coming down with the measles.

The next patient is a man with a coffee bean to filbert sized macular eruption on the face and trunk. Its color is crimson to purple. The macules are darkest in the centres with the edges fading off into the natural skin. It does not itch, and it has come out rather suddenly. There are dark circles under his eyes, and the patient complains of wakefulness and headaches at night. His hair is falling out. The submaxillary glands are much swollen and of a stony hardness. The adenopathy is general. There is a small ulcer with a hardened base on the border of his lower lip, which has persisted for two months, and he cannot get it to heal. This man has syphilis in the early secondary stage. Acquired innocently, the initial lesion being on the lip.

At a subsequent visit he brings with him two friends. Their record is not so clear as his. They have been dallying with the demimonde, and fear they have contracted some dreadful disease. One of them shows on the anterior fold of each axilla a cluster of lentil sized, brownish spots with some discoloration extending over the shoulders, and several other spots from a dime to a half dollar in size scattered over the sternal and hypochondriac regions. On the back are similar lesions. By scratching, fine branny scales can be detached, leaving sound skin underneath. He has no venereal trouble. The discoloration is due to tinea versicolor-the growth of a minute fungus upon the skin.

The other friend has a bright crimson macular eruption, pretty generally distributed, sparsely on the face, abundantly on the belly and hips. Here and there can be discovered little wheals on the macules. It itches. He has no fever, no enanthem in the mouth. The inguinal glands are enlarged, and there is a purulent discharge from the meatus urinarius. He has acute gonorrhœa, and has been taking copaiba for its relief.

The next patient is a young man of blonde complexion, with rosecolored dime to nickel sized macules widely scattered over the trunk, oval in shape with the long axes at right angles to the axis of the body. There are slight polar elongations of the red border. The centres are fading to a tawny color. The spots are covered with very fine branny scales. For a few days back he has had slight fever, lassitude, and loss of appetite, and then this came

out. He has a comparatively rare disease, occurring in the spring and fall, called pityriasis rosea.

Our next patient is a young woman with a very high fever, inflamed eyes and throat, headache, and severe pains in the back extending through the waist and much gastric disturbance. A broad band of diffuse erythema covers the middle part of the face. on either side of the nose and around the mouth. A crimson macular eruption is most prominent over the lower part of the abdomen and the inner surfaces of the thighs. She is menstruating, and the flow has come on a little before the expected time She has smallpox, or varioloid, in the beginning of the period of invasion.

Papulosquamous Eruptions.

Of papulosquamous eruptions I shall present three cases. The first is that of a young married woman of a blonde, nervous type, who has distributed over her shoulders and breast, lentil to half dollar sized scaly patches, with well defined borders. The scales come off in flakes that are greasy, leaving tender, reddened skin beneath. She has been troubled with dandruff for a long time, and parts of the scalp will be seen shedding the same greasy scales. She has seborrhœic dermatitis.

The second patient is a young girl with lentil to nickel sized scaly patches, irregularly distributed over the body and extremities. The face is free, but she has a few in the borders of the hair, some of the larger ones have partially healed leaving segmented or complete circles. Confluent patches are present on the knees and elbows. The scales are dry and silvery, and when removed leave a thin pellicle, which sometimes bleeds. She has psoriasis.

The third patient is a young man in the pride of youth. Rather sparsely distributed over his body are lentil to pea sized papules, hard to the feel and of a brownish color. Many of them are surmounted with white scales. Some are grouped in segments of circles. There is a distinct infiltration of the skin of these papules. He has deep ulceration of the tonsils and mucous patches on the edges of the tongue and inside the lips. All the superficial lympathic glands are enlarged. It is syphilis in the second period of the secondary stage.

Vesicular Eruptions.

A woman recovering from pneumonia presents the whole chin swollen and tender, with a number of yellowish crusts. Some of them are blackened by the admixture of a drop of blood. A few vesicles can be made out on the border of the affected area. The inner surface of the lower lip has a few superficial ulcers, yellowish in color, surrounded by a narrow ring of red. Others are grayish. This is an outbreak of herpes febrilis.

A child with a vesicular eruption irregularly distributed on the face, forearms, and hands. The spots, which are pea to nickel sized, tend to spread peripherally and heal in the centre. The vesiculation is superficial and ruptures easily, covering the spots with yellowish crusts. The secretion is inoculable, both on the patient himself and other persons. The disease is contagious impetigo.

A girl, of eight years, has a polymorphous eruption scattered over the body. A few lesions appear on the face and scalp. Some are rose colored, lentil sized macules. Some are bean sized, oval in shape, surmounted by vesicles, filled with a clear serum. In a few the contents are cloudy. Some have finished their course and are replaced with black crusts. The traces of vesiculation appear on the soft palate. She has chickenpox.

A girl, of ten years, complains of great pain and lameness in the front part of one thigh. Examination shows little groups of vesicles quite firm and very painful, distributed over the skin, supplied by the middle cutaneous branch of the anterior crural

nerve. She has zoster.

A boy, of five years, has a papulovesicular eruption, pretty generally distributed over the nates and Simon's triangle, which includes the lower part of the abdomen and inner surfaces of the thighs. Lesions are also found on the anterior folds of the axillæ and the flexures of the elbows and wrists. They are mostly pinhead papules with the heads torn off and replaced by blood crusts. Here and there are vesicles. On the genitals they take the form of shotty papules. He has scabies. Careful search may discover the furrow of the itch insect, looking like a short, black thread in the skin, and you may be fortunate enough to dig her out from the bottom.

Pustular Eruptions.

A boy of eight years has pea sized lesions irregularly scattered over the face, hands, and body. Some are filled with pus and stand up prominently from the skin. They may have a narrow, red border. Some have ruptured and are covered with a loosely adherent, light greenish crust. Others are covered with a thick black crust, easily detached and leaving a raw surface. He has impetigo.

A young man has papulopustular lesions scattered over his face and scalp and pretty generally over the body. They are lentil to pea sized. Some are filled with a clear fluid and have a dimple in the centre. Others are round and full, and the contents are gray or yellowish in color. All have hard bases. And as we rupture them with a needle but a small part of the fluid escapes. They are multilocular. His voice is husky, the fauces are injected a deep red, and there are small ulcers on the roof of the mouth. The soles of his feet hurt him, and there are imbedded in the thick epidermis of the palms and soles, thick lentil sized black crusts. He has a little fever. Last week he was quite sick for a few days and thought he was going to have the grip. He has been vaccinated, but it was several years ago. He has varioloid, and we report him to the board of health.

This occasions some excitement in the neighborhood and our attention is called to another young man. He has a papulocrustaceous eruption also distributed over his face, scalp, and body. The lesions are pea to dime sized, and covered with very thick crusts. The palms of his hands are sore. There is in each palm an exfoliating bleeding tender patch the size of a quarter. He has mucous patches in the mouth and throat. There is general adenopathy. Much of his hair has fallen out, and the back of his head presents a singular moth eaten or plucked out appearance. He has syphilis, and his case is not reportable, though perhaps it ought to be.

Hæmorrhagic Eruptions.

A woman, forty-two years of age, shows on the legs and about the knees and on the backs of the thighs dark red and purplish spots which do not disappear on pressure. Some of them are fading and have a greenish color. They are pinhead to lentil sized. The patient is anæmic, emaciated, and overworked. She had a few days of malaise last week with chilly and feverish sensations and pain in the larger joints. But these symptoms have mostly disappeared. She has simple purpura.

The other cases are too serious to come to the clinic, and may be seen in the hospital. In one of the reception wards there is a thin man with pale lips and dark circles under his eyes, and bronzed patches on his cheeks and neck varying in size from that of a finger nail to a quarter dollar. He is thirty-two years of age. On the arms and legs and loins are a number of hæmorrhagic spots, lentil to finger nail sized. A few are recent and dark blue in color. The older ones are fading and are of all shades of green, orange and yellow. On the calves of both legs and on the right side just below the axilla are large, brownish discolorations with desquamation. The subcutaneous tissues are thickened and hardened, almost boardlike to the feel. These areas have been painful but are not so now. On the flexor surfaces of the forearms and thighs, the skin is roughened like goose flesh. In many of the petechial spots can be seen a central hair. The gums are swollen and spongy with an intense red line next to the teeth. Here and there are small patches of greyish membrane. The teeth are very sore, and some of them are loosened. The gums have receded from them in many places. The remainder of the buccal cavity is pale. The man has hæmic murmurs. He becomes breathless on exertion and is lame from the swellings in his legs. He is recovering from scurvy, and his history is a tragic one. He was first mate on a steamer homeward bound from India with a cargo of teak wood. His vessel was wrecked in mid-Atlantic in a severe storm. The rigging was carried away and the funnel stove in. Her stores were badly damaged. As soon as the storm subsided, the crew seized the boats and were never heard from afterward. Four men were left on board. The wreck drifted about for a long time, never coming within hailing distance. Finally she was reported as a derelict. Meanwhile the little crew had sickened of scurvy and two faithful fellows succumbed one after the other. The captain also took pneumonia and became delirious. The only redeeming feature was fair weather. Then a tramp steamer with a light cargo came near and sent a boatload of sailors to board the derelict. The captain died the same night, but the first mate and the cargo were brought to New York.

In another ward lies a young woman with a high fever and great prostration. Though somnolent, she can be roused, but does not always give a coherent answer. She is a brunette, with heavy black hair, and the congestion of her face gives her complexion a mahogany tint. Her eyes are bloodshot and watery, and black sordes are on her lips. On the neck and chest there is a macular, crimson eruption resembling measles, but with no tendency to

assume a crescentic outline. On the folds of the axillæ and the abdomen are irregular pinhead to lentil sized, brown spots which do not disappear on pressure. They are also on the dorsal surfaces of the wrists. Some of them are livid and resemble purpura. She has typhus fever. She is a Hungarian by birth, and after five years residence in this country, paid a visit to her old home. On her way back, she visited friends in London and sailed in company with some of them. One was taken with a chill on the day of landing and detained at Ellis Island Hospital. Three days later she was attacked in the same way.

The last patient is in the isolation ward, and we may look at him through the observation window in the corridor. He is a young and well nourished man of about twenty-eight. His face is crimson and swollen beyond recognition. Dark hæmorrhagic circles surround his eyes, and ecchymotic spots are seen in the conjunctivæ. His nostrils and mouth are stained with blood, for he has hæmorrhages from those orifices. He has a troublesome cough, and the sputum is bloody. The tongue is swollen and white, contrasting strangely with the dusky countenance. On the arms and thighs are dark red and purplish spots which do not disappear on pressure varying in size from a lentil to a half dollar. On the trunk and legs are larger discolorations of irregular outline. formed by the coalescence of similar circles. Hæmorrhages have occurred from the bowels. He has no fever, but his pulse is rapid, and there is great depression. Yet withal his mind is clear and will be till near the end. His case is one of purpuric, or black, smallpox. This is the fourth day of his disease, and he can not survive more than one or two days longer.

Nothing has been said about eczema in this paper. This is so varied in its manifestations that it would require an evening by itself. It may be erythemaious vesicular, weeping, papular, pustular, or squamous. These are not different forms, but stages of the disease, and it may pass quickly from one to another.

273 WEST SEVENTIETH STREET.

A SUMMARY OF THE RESULTS OBTAINED BY THE X RAY TREATMENT OF EXOPH-THALMIC GOITRE.*

By G. E. PFAHLER, M. D., Philadelphia.

In the preparation of this paper I have made a hasty review of the literature upon the subject. I have omitted from this report any reference to simple goitre. This review convinces me that the Röntgen rays deserve a more prominent place in the treatment of exophthalmic goitre than they have heretofore received. The reports have been made by well known and careful observers and therefore deserve consideration. Since "results" form the main topic of discussion, I have made little reference to the technique. Most of the reports have been made in 1906 and 1907. Williams (The Röntgen Rays in Medicine and

Read in a symposium upon exophthalmic goitre before the Phila delphia County Medical Society, September 9, 1908.

Surgery, 1902) noted marked improvement in a case after five exposures in about three weeks' time.

Pusey (The Röntgen Rays in Therapeutics and Diagnosis, 1903) reported a case which after mod-

erate exposure showed effects.

Dr. Thrush and I on February 14, 1906, reported before this society a case of exophthalmic goitre (Therapeutic Gazette, March 15, 1906). This patient was a married woman, thirty-six years old, who had noticed the swelling of the neck about two months previously, but during several months before the goître appeared she had noticed restlessness, insomnia, twitching of the muscles of the lower extremities, and a peculiar sense of oppression in the chest as if drowning. About a month before the goitre appeared, she had a spell of some kind, after which she was unable to see for an hour. She had distinct exophthalmos. She was treated three times a week, and after a month there was distinct improvement, both in the general condition and in the reduction in the size of the gland. The improvement continued for three months, when she appeared to be well. Her pulse had been reduced from 120 to 72, and she had gained 25 pounds in weight. At the time of that report I had only found three (incomplete) reports of cases treated by the Röntgen rays. This woman was well when seen a year later, and a letter states that she has remained

One of the best reports made upon the subject is that by Freund (Münchener medizinische Wochenschrift, 1907, Nos. 7 and 22). He reports five cases. Three were treated exclusively with the Röntgen

Case I.—Patient was a woman, thirty-four years of age, who had symptoms for eight weeks. She had an enlarged who had symptoms for eight weeks. She had an enlarged left lobe of the thyreoid, pigmentation of the skin, and the pulse rate was 120. There was an increase in cardiac dullness to the left, and a systolic murmur. Stellwag's symptom was present but no exophthalmos. She was treated three times in three weeks, each exposure being ten minutes, with a medium soft tube. Fourteen days after the last exposure the enlargement of the gland had dispense of the gland appeared, also the systolic murmur, and there was an increase in weight of eight pounds. These improvements were still present seventeen months later, and the weight

had increased to fourteen pounds.

Case II.—Patient was a woman, forty-three years old, who had been complaining for two years of palpitation, and difficult urination. She was poorly nourished, with double exophthalmos, bilateral goitre, and nephroptosis and gastroptosis. Following an operation for nephroptosis the Basedow symptoms increased. There was also present tremor of the hands and a systolic cardiac murmur. treatments in five days were followed by so much improve-ment that she was discharged. When examined twelve months later, she was feeling well, with no Basedow symptoms, no exophthalmos, the goitre was smaller, and her weight had increased.

CASE III.—Patient was a girl, twenty-six years of age. CASE III.—Patient was a girl, twenty-six years of age.
During eight weeks she had noticed a swelling of the
neck, excitability, tremor of the hands, insomnia, and
sweating. She had slight exophthalmos, a systolic murmur, pulse rate 124, and the thyreoid was of the size of a
hen's egg and not compressible. Four treatments in three
weeks caused the symptoms to diminish. The goitre decreased two centimetres. After five months she was well
except for some enlargements of the thyreoid.

CASE IV.—Patient was a woman, forty-eight years of
age. She had been treated for Basedow's disease by

age. She had been treated for Basedow's disease by medicinal means for three years, with some improvement, but finally there was an increase in the symptoms—rapid loss of weight, great weakness, orthopnea (40), cyanosis, increased cardiac dullness to the left, and a loud systolic murmur at the apex heard also at the other valves. Pulse

was small and irregular. The liver was enlarged, cedema was present, there was a tremor of the hands, increased reflexes. The right lobe of the thyreoid was the size of a walnut and not compressible. Internal treatment caused the cardiac weakness to disappear, but the Basedow symptoms remained. Four treatments in five weeks caused these symptoms to disappear. Immediately after the first treatment she complained of vertigo and headache. The other treatments caused no symptoms. In the five weeks under Röntgen ray treatment she had gained ten pounds

CASE V.—Patient was a girl, eighteen years old, who had been generally nervous and had tremor of the hands and palpitation of the heart for six months. She was pale and emaciated. She had a goitre on the right side the were increased. There was no cardiac enlargement and the pulse was 92. She was given two treatments in two weeks. After the second week, the goitre had nearly disappeared, and after four weeks all the other symptoms

had disappeared

From these results Freund concludes that the exposure to the rays causes the disease of the thyreoid to disappear, and thereby the symptoms. The body weight then increases, and the other symptoms may disappear. The soft compressible goîtres are more easily influenced, and it appears that the more recent the development, the more rapid the disappear-

Rutinger (Deutsche medizinische Wochenschrift, 1907, No. 1) found that after each exposure there was a diminution in the excretion of nitrogen and an increase in the phosphates. Both his patients showed increase in weight, a diminution in the circumference of the neck, and an improvement in the nervous symptoms. He concludes from these investigations on the metabolism in these two patients under treatment that if, after a single exposure, the previously increased breaking down of albumin is replaced by retention of nitrogen the Röntgen ray treatment should be continued.

De La Cany (Mitteilungen des ärztlichen Vereins, Marburg, February 21, 1907) reported three cases. He does not agree with Rutinger that the retention of nitrates is directly due to Röntgen ray exposure, but rather that the cure of the disease is followed by this retention. In one of his patients galvanization of the sympathetic nerves previous to the Röntgen ray exposure was followed by

good results.

Wiederman (Gesellschaft für innere Medisin und Kinderheilkunde in Wien, January, 1906); reports three cases. In one, only an increase in weight was observed. In the other two there was an increase in weight and an improvement in all other symp-

Hirschl (Verein für Psychiatrie und Neurologie in Wien, February 13, 1906) reports two cases in which good results were obtained. There was an increase of about ten pounds in weight, a decrease in pulse rate, and a remarkable improvement in the

Schwarz (Verein für Psychiatrie und Neurologie in Wien, February 13, 1906) reports the case of a young girl of twenty-one years in which very good results were obtained: Pulse was reduced from 120 to 80, exophthalmos decreased to half, the dyspnæa disappeared, and the weight increased twenty-six pounds, but the goitre remained the same.

Holzknecht in discussing these reports believed that the Röntgen rays cause cell degeneration in the diseased parenchyma of the thyreoid and thereby cause a decrease in the pathological secretions.

Stegmann (Wiener klinische Wochenschrift, 1906, No. 3) reports three cases, in which excellent results were obtained. The goître and the other symptoms disappeared and the weight increased. He believes that the rays cause alteration in the cells of the gland which lead to qualitative and quantitative changes in the secretion.

Sklowdowski (Deutsche mediziniche Wochenschrift, 1906, Nos. 30 to 36).—A fifteen year old girl had been treated with antithyreoidin, under which treatment the nervous symptoms disappeared without affecting either the goitre, the exophthalmos, the tremor, or the pulse. Prompt improvement followed the exposure to the rays. There was an increase in weight of tweny-two pounds in two months. The improvement was permanent at least

a half year to the time of the report.

Beck (Berliner klinische Wochenschrift, 1905, No. 20) reported three cases in which Röntgen ray treatment followed operation. The first two had half the thyreoid removed, respectively eighteen and thirteen months. Their operations were followed by improvement, but not complete recovery. After a few exposures, the tachycardia and the nervous symptoms improved. These results led him to use the rays in a third case eight days after the operation. This third case was an especially bad one. In two days one five minute and one ten minute exposures were given. The pulse dropped from 180 to 120. The palpitation of the heart and the dyspnæa disappeared. Five treatments produced a dermatitis. One week later the pulse was 80, and the exophthalmos and all the Basedow symptoms had disappeared.

Beck (Journal belge de radiologie, 1908, No. 7) later reported on eight patients. All were cured except one, and this one interrupted the treatment too often. The first three had remained well three He considers the cases most favorable in which the gland is soft and in which the parenchyma is involved. He recommends the rays as a supplement to operations, when the thyreoid is large; when the symptoms are severe and forbid an immediate operation; and when the goître is small. (Postgraduate, twenty-fifth anniversary, 1908.)

Dohan (Verhandlungen der deutschen Röntgen Gesellschaft, July, 1907) reports eight cases. Two patients who had the typical symptoms have been well eight months and a year respectively, and free from all symptoms, excepting that one still has slight exophthalmos. One gained twenty-two pounds in eight months, and the other gained eighteen pounds in three months. In two other cases there was marked improvement. In four additional cases there has been practically no change even after several months' treatment, excepting that one patient gained in weight, and another had some reduction in the size of the goître. Dohan gives a dose sufficient to produce a mild dermatitis at each seance and then waits two weeks before repeating.

De Castello (Dritter Congress der deutschen Röntgen Gesellschaft) reports the case of a woman, sixty-eight years old, who had a goitre for fortyeight years, but in the last year it grew rapidly, and was the size of an apple and extended beneath the sternum to the third rib. One exposure by Kienböck, from three directions, aggregating over an hour in time, was given. In nine days the tumor was reduced to half the size, signs of toxæmia developed, and Gräffe's symptom appeared. goitre continued to decrease, but the Basedow symptoms did not improve. He concluded that the first

exposure should not be an excessive one. Fabers (Hospitals Tidende, August 21, 1907) reports eight cases of exophthalmic goitre with remarkable results in a few instances, even allowing for a spontaneous tendency to recovery in some cases, and the effects of suggestion in others. patient, a married woman of twenty-five, had presented the symptoms for four years, but they subsided under seven applications of the Röntgen rays for ten minutes in the course of twelve days. The same treatment was repeated about a month later. Four months afterward she wrote that she had never felt so well.

Summary.

There have been recorded in the literature at least fifty-one cases treated by the Röntgen rays. Of this number forty-two cases were followed by good results. In nine patients there was little or no improvement. In other words, good results were obtained in over seventy-five per cent. of cases, with no risk to the patient and no great inconvenience. This is surely in marked contrast to the results obtained by other methods.

The number of cases treated is still small, but surely sufficient to justify further trial, since there seems to be nothing lost and a chance for much gain

by the trial.

One author states distinctly that three of his patients received no other treatment. It is possible that others received no other treatment, but it is to be assumed that in most cases some internal treatment was used. Beck used the rays after surgery failed to produce satisfactory results, and recommends a combination of operation and Röntgen ray treatment. Since, however, results followed so promptly after all other methods had failed it seems folly to leave the best and least harmful method until last. It will be observed that the good results showed themselves in some instances within fortyeight hours, and almost without exception within a In most cases almost complete recovery was obtained in from three to six months. It would seem, therefore, that the trial of the Röntgen rays for a month, with from six to a dozen treatments, could do no harm, and is likely to be followed by good results. If some improvement is not shown in a month it should be discontinued for at least a month.

The treatment should be localized upon the goître, and may be carried to the point of producing a mild dermatitis, but not more. The first dose

should not be excessive.

The permanency of the results is still a question, yet all the patients in which good results had been obtained, had improved or remained well up to the time of the reports, which varied from a few months to three years.

The earliest and most noticeable improvement is the increase in weight. This is followed by improvement in all the symptoms. The two symptoms that remain longest are usually the enlargement of the thyreoid and the exophthalmos.

Conclusions.

1. Decided improvement may be expected in about seventy-five per cent. of cases.

2. This improvement consists of an increase in weight and strength, and gradual disappearance of the Basedow symptoms.

3. Some improvement should be noticed within a

month, and after six to a dozen treatments.

4. When this treatment is properly given there appears to be no danger, and I can see no objections to recommending this trial of a month in all

1321 SPRUCE STREET.

A CASE OF SQUAMOUS CELLED EPITHELIOMA,

Apparently Primary in the Thyreoid Gland. Metastatic Growths in the Lungs, Lymph Glands, and

By W. MILTON LEWIS, M. D., Baltimore, Md.

So few cases of squamous celled epithelioma of the thyreoid gland have been recorded that the report of an additional one, which was observed by the writer a few years since, appears at the present time of value.

Unfortunately, because of the incomplete autopsy, it is not possible to definitely say that the seat of primary growth was the thyreoid gland, but the great size of the tumor mass in the thyreoid gland, the extensive ulceration, and the absence of all symptoms pointing to a primary lesion elsewhere, make the diagnosis extremely probable.

Clinical history: Mrs. X, white, married, at. 64, consulted Dr. Charles E. Simon, of Baltimore, in the fall of 1896 for relief from cough, expectoration and general debility.

Family history: Mother, sister, and several brothers died

of tuberculosis

Previous history: Patient passed through the usual diseases of childhood. She was married about the age of twenty-five. Her husband thinks that she had a small goitre at the time of marriage, but she is of the opinion that the enlargement did not come on until after the birth of the first child, which took place one year after marriage. It then began to grow, and became quite prominent. It gave no trouble, however, excepting that due to shortness of breath. Her weight at the time of marriage was 108 pounds, but increased within two or three years to 152 pounds. At the age of thirty-two, she had intermittent fever. She had two children in addition to the one already wentioned the less one at the age of twenty nine. With mentioned, the last one at the age of twenty-nine. With the exception of an attack of dysentery in 1890, she was otherwise in good health until the fall or winter of 1895. The occurrence of a death in the house during this winter disturbed her a great deal.

Several months ago she began to have cough and expectoration, the cough being very distressing at night, and interfering markedly with sleep. The patient lost some flesh, and weighed about 125 pounds.

Present history: Patient first seen in October, 1896, and

Patient is of small stature, complexion sallow, expression anxious, and eyes slightly protruding. The general nutrition is fair. The left supraclavicular region is occupied by an irregular hard mass, which is continuous with the right lobe of the thyrcoid.

The pulse rate is 120 per minute. Cardiac dullness is within normal limits, and a very soft systollic murmur is audible at the base. Respirations are increased in frequency. The lungs are clear on percussion, both in front

and behind. At the right base behind, a few moist râles are audible. In front the respiratory murmur is distinctly enfeebled in the left infraclavicular region. Liver and spleen are within normal limits. Abdominal examination negative in general. The uterus is entirely prolapsed. The urine is free from albumin and tube casts, and contains no

Examination of sputum: The sputum was frothy and ood tinged. The total quantity in twenty-four hours was blood tinged. The total quantity in twenty-four hours was ten ounces. Upon careful examination no tubercle bacilli and no elastic tissue were seen. There were no cells pres-

ent suggesting carcinoma.

During the ensuing three or four weeks, the patient remained about the same. The mass in the left supraclavirular region became distinctly softer. The temperature varied between 98° and 101° F. The cough continued about the same, but the expectoration was a little less bloody, the saile, which the capeting and light red in color. Patient suffered especially from violent paroxysms of coughing, which were most distressing at night, and the weight remained about

On November 29th, the doctor was called at 7 a. m., and the following condition was noted: The patient had passed a wretched night, the color of the face was ashy, and there was a considerable degree of dyspnœa. The pulse was 140, weak, and very irregular. Free stimulation with whiskey, strychnine, and digitalis being resorted to, there ensued a very considerable improvement, the patient becoming quite

comfortable by evening.

On December 3d, the patient was transferred to the Johns Hopkins Hospital, where she remained until December 17th. On December 10th, she was seen by Dr. J. N. Mackenzie, and a small papilloma was removed from the anterior commissure of the 'arynx, with considerable relief from the violent paroxysms of coughing. The patient's general condition, however, continued to grow worse, and during the next ten days, the odor of the expectoration became very offensive. On December 17th, the patient returned to her home, and was manifestly much worse. Morphine had to be administered once or twice daily in order to relieve the distressing cough. The patient was, moreover, unable to take anything but liquid food, and this only in very small amounts.

amounts.

On December 10th, a fluctuating swelling was noted in the left supraclavicular region. Upon incision into this, a teacupful of bloody pus, very similar to that seen in cases of amebic liver abscess, was discharged. No ameeba were found in the pus, but a large number of cells, epithelial in appearance, were seen. These cells were probably correctly regarded as being referable to a carcinomatous growth.

December 21st: The patient had spent a miserable night, and at 5 a. m. a copious serous discharge was noted taking place from the wound. At the same time the hissing sounds of escaping air were heard during respiration.

On December 23d, after a fair night, the patient was still able to take a moderate amount of nourishment, but it was noted that some of the food escaped through the wound.

December 25th, at 9:30 a. m., the patient was manifestly dying. She was, however, still conscious at 4 p. m. At 4:30 p. m., tracheal râles were heard, the pulse was scarcely perceptible, and death occurred at 4:50 p. m.

The clinical diagnosis made at this time was carcinoma-

tous degeneration of the old goître.

Autopsy 8:30 p. m., December 25th, 1896. Section, four hours after death, length of body 160 cm. Rigor mortis fairly well marked, emaciation considerable, with a moderate grade of cachexia. Mucous membranes pale, pupils equal, eyes and mouth closed. Post mortem mottling of the dorsal surfaces of the neck, shoulders, back, buttocks and legs.

In the left supraclavicular region was seen a linear incision between 3.5 and 4 cm. in length, from which a sero-sanguinolent fluid exuded. Lying in front of the trachea, and corresponding in position to the thyreoid gland, was a swelling of considerable extent. Upon the left side, this mass appeared of cartilaginous hardness, and was rough and mass appeared of carriagnous naturess, and was rough and nodular. A finger passed through the incision already men-tioned was readily carried down behind the mass. The walls of the cavity were rough, crumbling readily upon pressure, and containing gritty or calcareous particles.

The right side was smooth in outline, uniformly enlarged, and precinted a degree of resistance suggesting dense fibrous tissue. None of the superficial lymph glands were enlarged, nor were there any moles or marks present. There was no œdema. No nodular masses or bony swellings were anywhere present, except as already noted.

The thorax was opened by an incision beginning at the upper border of the cricoid cartilage, and extending as far as the tip of the xiphoid cartilage. The tissues were bloodless and flabby, and the subcutaneous fat about two centimetres in thickness.

Dense fibrous adhesions bound the left lung firmly to the wall of the thorax. These were most marked in the lower portion. About 200 c.c. of bloody serum, closely resembling that exuding from the incision already mentioned, were found in the left thoracic cavity. There were a few slight adhesions present on the right side, and the serum con

tained in the right plural sac was normal in appearance and amount.

The lungs were mottled in black, or bluish black gray spots, crepitated under pressure, and floated upon water. In the apex of the left lung an area 1.25 by 5 cm. in extent was observed, which was of a leathery consistence, and of a grayish white mottled color. Upon section, this mass was smooth, opaque, and of a grayish white color, somewhat paler than upon the surface, and measured one line in thickness. A little reddish frothy serum could be pressed out from the lung substance beneath this mass.

Upon the anterior surface, 3.75 centimetres below the pex, a shallow, irregularly round depression was seen. This depression varied from one to four lines in depth, and its walls corresponded in general macroscopical appearances to the structure of the first described mass. Upon section, an area 5 by 2.5 by 1 cm. was revealed, which was dense, fibrous, and in some places cartilaginous to the touch, and which contained a cavity of very irregular shape, over the surface of which a smooth, glistening layer of tissue was spread, which closely resembled endothelium, but was

slightly more opaque.

Scattered throughout both lungs were small, dark areas,

Scattered throughout both lungs in diameter, each containwhich averaged about two lines in diameter, each containing in the centre a small, grayish white, globular mass, of about the size of a millet seed, and which was very hard, cutting with much difficulty. No nodules were to be found

on either the visceral or parietal pleura.

The heart was not enlarged, and occupied its normal position in the thoracic cavity. The pericardial sac contained about 15 c.c. of bloody serum. Covering almost the entire surface of the heart was an abundant fibrous ex-udate, which was dense, and which was principally composed of villous masses of fibrin, which were more or less elevated above the free surface, constituting the so called "hairy heart." It measured 16.25 by 15 by 8 cm. The wall of the right ventricle was thin, averaging about 1 cm. in thickness. The outer one third to one half was of a yellowish color, and projected beyond the level of the surrounding muscle. It was collected into clumps or lobules, and was of a greasy feel. In the apex of the right ventricle was a mass measuring 2 by 2.5 cm., which projected into the lumen of the ventricle, apparently corresponding to one of the musculopapillares. This mass was surmounted by a thrombus, which was undergoing organization. Upon section, this mass had the same general characteristics already described in connection with the deposits found in the lungs, i. e., the surface was smooth, more or less homogeneous, of a grayish white, mottled color, and quite dense and hard. It was, however, somewhat softer, and not quite so smooth, as the masses in the lungs, and very fine, gritty particles were scraped away from its cut surfaces, which had a somewhat milky appearance.

The wall of the left ventricle was of an average diameter of 2 cm., one quarter to one third of this space being made up of yellowish, lobulated, greasy masses, similar to those found in the right ventricle. The auriculoventricular valves were normal. Large yellowish white, opaque patches, varying from 0.35 to 2.5 cm. in diameter, were scattered over the inner wall of the larger blood vessels. These patches were particularly well marked around the origins of the innominate, the carotids, the subclavian, and the intercostals. They also extended into these vessels, as well as into

the coronary arteries

The mediastinal glands were considerably enlarged, and particularly so, one very large cluster situated at the base of the heart. In the latter mass two small cysts were noted, which were surrounded by a light colored border, which was irregular, dipping down into the surrounding tissue.

A small nodule about the size of a millet seed was found in the wall of the esophagus, just where it passed behind the arch of the aorta. Immediately above this point, 3.75 cm. above the origin of the left carotid, a small ragged opening in the wall of the esophagus, 2.5 by 0.85 cm. in size, was seen, which communicated with the abscess cavity

to be presently described.

Examination of the thyreoid gland showed a considerable enlargement of the whole organ, the two lobes, together with the isthmus, measuring 14.25 cm. transversely and about 3.75 cm. perpendicularly at the isthmus. The left lobe measured 10 by 10 by 2.625 cm. It was extensively necrotic, and communicated with the esophagus, the trachea, and with the artificial opening made in the supraclavicular region, in each case by means of several ragged openings. The walls of this abscess cavity were very ragged and friable, the tissues being easily scraped away by the finger. Extending in various directions across the cavity were trabeculæ, some of them of almost bony hardness, and very brittle, but which did not crumble under pressure. This abscess cavity extended deeply into the cellular itissues below the thyreoid, its deepest portions being 10 to 12 cm. below the external artificial opening.

One of these pockets extended deeply down behind the arch of the aorta, resting directly upon the wall of that vessel. Another area of ulceration passed down in front of the great vessels to the base of the heart, reaching about the same level. In front of the trachea, and about 1.25 cm. below the lower border of the thyreoid isthmus, just at the beginning of the pocket which passed in front of the aorta, were three ragged openings which communicated with the abscess cavity, and which varied from 0.625 to 1.875 cm. in length. These openings were subcutaneous, and were connected through the subcutaneous cellular tissues with the

supraclavicular incision.

Posteriorly, a communication existed between the trachea and the abscess cavity by means of several ragged openings, the largest of which was 0.625 by 1.875 cm. in size. These openings were situated about I cm. below the lower border of the cricoid cartilage. Above this point, the tracheal mucous membrane was smooth and pale, while below it was very dark red, this injection extending about 7.5 cm. downward

The trabeculæ were for the most part bony in appearance, although in parts of the mass calcareous deposits were found. At the base of the heart a mass of calcareous matter occupied the situation of a group of bronchial glands.

Masses similar in appearance to those found in the lungs were also found in the bronchial glands. The margin of the epiglottis was rough and excavated, the mucous mem brane being necrotic. The right thyreoid lobe was unusually enlarged, was hard and fibrous, and upon section presented the characteristics of thyreoid tissue, i. e., cystlike formations, containing colloid, and embedded in a network of fibrous tissue. The acini were greatly distended, and the nbrous tissue. The acm were greatly distended, and the fibrous partitions were very robust, causing a very considerable increase in the size of the gland, as already noted.

An incision through the diaphragm being made, and the

liver being carefully palpated, no nodular involvement became apparent. The gallbladder and ducts were free. tween the liver and the diaphragm were some slight adhesions, which were, however, easily separated. The stomach was apparently normal. A complete examination of the abdominal viscera was not, however, permitted. The

cranium was not opened

The larynx, thyreoid gland, trachea, lungs, and heart, to-gether with the large blood vessels, were removed entire and placed in a five per cent, formalin solution for future

Microscopical examination of the tissues:

Small bits of each lobe of the thyreoid gland, the lung, the heart, the esophagus, the epiglottis, the lymph glands, and the blood vessels were hardened, embedded in celloidin, and stained by the hæmatoxylin eosin method.

Sections prepared from the left lobe of the thyreoid showed the presence of a chronic fibrous hyperplasia. groups of normal acini being separated from each other by dense bands of fibrous tissue, in which but few nuclei were present. Other acini were compressed and their outlines lost, their places being occupied by groups of small cells, having densely staining nuclei

Among these cells were seen a few small bloodvessels. and a supporting structure of more delicate fibrous tissue

The compression of these acini appeared to be due to the increased development of fibrous tissue. Some of the blood vessels were seen surrounded by dense aggregations of lymphoid cells, outside of which were alveolar groupings of large polyhedral elements with vesicular nuclei, some of them undergoing mitotic changes.

In many places, however, this alveolar marking was not so distinct, the individual cells being separated from each other by a more or less well defined fibrous tissue. At other points, these cells were arranged in the form of strands, as it were, being made up of two, three, or more rows, and separated from each other by connective tissue

in which were seen a few small blood vessels.

With a higher power, the endothelial lining of these vessels was seen to be swollen, and in some places penetrated by lymphoid cells. The walls of the abscess were necrotic. by lymphoid ceils. Ine waits of the assess were necroit. Scattered through the cellular areas were numerous epithelial whorls, the cells of which were undergoing hyaline degeneration. The individual cells entering into the formation of these whorls and the "cell strands" varied greatly in size and appearance. Many of them were necrotic and indistinct. Others, while not suggesting a genuine necrosis, were nevertheless not well differentiated by the hæmatoxylin eosin method, but were colored a dark brown or black, as though the stain were precipitated into the cell protoplasm.

Still others were exquisitely stained, the chromatin and achromatin elements of the nucleus standing out most beautifully. In some areas mitotic changes were taking place, and one could observe indistinct cell division in all its phases, both typical and atypical. The multiplication of these cells had produced ingrowths closely corresponding to tumors of the epithelial type. The cells making up these ingrowths seemed to correspond to cells of squamous epithelium, and not to those of columnar or cylindrical type.

Forming a part of the wall of the abscess cavity, and numerous trabeculæ extending across this space, were several masses of bony hardness, which upon decalcification showed the histological structure of bone.

In various regions was seen a more diffuse lymphoid cell infiltration, which appeared to precede the complete development of the growth. On one side could be seen the normal thyreoid gland structure, while on the other hand were isolated groups of the characteristic cells, together with varying degrees of acinal obliteration resulting from invasion of the interalveolar sæpta by lymphoid and epithelioid cells, preliminary to the formation of fibrous tissue.

The right lobe presented simply the characteristics of

fibrous or fibrocystic goître of long standing. The acini were distended with colloid material, but there was no evidence of malignant disease in this portion of the gland, nor in the thyreoid isthmus. The fibrous sæpta were much increased in size, and very scantily supplied with cells. In the lungs and heart were, however, some very interesting

In the grayish white areas in the lungs, to which reference was made, were seen growths which closely corresponded in structure to those already described as occurring in the thyreoid gland. The tissues in which these growths occurred naturally exerted some influence upon this development. We hence saw in the lungs evidence of bronchitis and lobular pneumonia. The exudate within the bronchi consisted of polymorphonuclear leucocytes, desqua-mated epithelial cells, lymphoid cells, mucus, and broken down tissue

The nodular masses apparently had their origin in the walls of a blood vessel, spreading outward from that point. The normal alveolar structure of the lung was obliterated, its place being occupied by collections of irregularly shaped cells, of considerable size, with large vesicular nuclei, mostly oval, sometimes round, and with faintly staining

protoplasm.

The type of growth corresponded closely with that alcells around many of the blood vessels and in the walls of the bronchi. The cells of the new growth formed villa like projections, which penetrated and destroyed the sur-rounding pulmonary tissue. In the heart was found a most interesting condition. Around blood capillaries were seen collections of cells, similar in appearance to those already described, and which in many instances appeared to be developed directly in the muscle fibres, sometimes even suggesting a direct transformation of the muscle fibre into tumor cells.

In some places the capillaries were left, the muscle fibres having faded out. In others, the muscle fibre could be traced directly up to its abrupt termination in a tumor cell. Here, as in the lung, when the tumor cells were found around a blood vessel, the nuclei of the endothelial cells were swollen and leucocytes had escaped from the lumen of the vessel into the surrounding tissue.

Under the low power, the growth in the heart presented the appearance of a network of epithelial cells, enclosing islands of a loose connective tissue, containing here and there fragments of muscle, and groups of lymphoid cells. Occasionally single epithelium like cells were encountered,

which had two or more nuclei.

In some places the muscular tissue was necrotic, while in other regions the connective tissue framework which supported the fibres remained. The cardiac tissue was not displaced by, but was transformed into the new growth. Most interesting were sections carried through the thrombus. Here was seen an ordinary organizing thrombus, situated upon the ventricular wall of the right heart, which was being invaded by the elements of the new growth, and which contained many alveolar cell clusters.

The individual cells making up this portion of the tumor

The individual cells making up this portion of the tumor were smaller than those situated either in the thyreoid or in the wall of the heart, but the manner of growth appeared entirely the same. Metastases were found in the lymph glands of the bronchial and mediastinal systems. In these glands the growth consisted for the most part of irregular groups of large cells, whose protoplasm was nongranular

and took the eosin stain.

Many of the cells had more than one nucleus, and were most well distinguished. In others, the nucleus looked like a mass of very darkly staining pigment. Occasionally very large elements were seen, in which the nuclei were filled with very large granules. The stroma between the groups of cells was plentifully supplied with capillaries and fibrous tissue elements in all stages of development. Numerous cells, with long, rod shaped, faintly staining nuclei, were seen, held together by a homogeneous ground substance. Mingled with these were cells containing yellowish brown pigment. This pigment also occurred free as varying sized collections of very fine granules. Around the new growth was a fibrous capsule, and around certain lymph channels could be traced groups of large cells with vesicular nuclei, which closely resembled those of squamous epithelium. The growth occurred sometimes as strands or columns, and sometimes presented the appearance of dense alveolar structure. When the alveolar structure was pronounced, the stroma was better developed, and here the resemblance of the tumor growth to squamous epithelium was very marked. The deeper layers were columnar in type, while as the middle of the alveolus was reached the cells became more or less polyhedral in outline.

These irregular polyhedral cells were nongranular, or at least but faintly granular, containing large oval vesicular nuclei, many of them exhibiting mitotic figures. The extent of involvement varied, in some cases the entire gland being included, and in others a part remaining normal. In some of the glands extensive necrosis had taken place, the changes being due for the most part to karyorrhexis. Scattered through the entire necrotic area were seen granules of

brownish pigment.

Sections of the œsophagus at various levels showed no involvement of the mucous membrane. In many situations the growth approached very closely to the lumen of the tube, and in one place, to which reference has already been made, there were several ragged openings. The borders of these openings were necrotic, but there was no evidence of carcinomatous involvement. In the blood vessels, as the zorta, carcitids, innominate, and the coronary arteries, the yellowish patches before described were due to the development of fatty atheroma. The walls of the vessels were largely composed of dense fibrous tissue.

No report was secured of the growth removed from the larynx, except that it was a papilloma. The nodule in the wall of the escophagus was an enlarged lymph gland. There were probably metastases in other organs, but their exam-

ination, as already intimated, was not allowed.

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THE DIAGNOSTIC VALUE OF PERVERSE SECRETION OF HYDROCHLORIC ACID BY THE MUCOUS MEMBRANE OF THE STOMACH.

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In discussing the diagnostic value of perverse secretion of hydrochloric acid by the gastric mucosa it is well, I think, first to cite certain physiological facts bearing on the subject:

- (1) Pawlow and his pupils demonstrated that the vagus is the secretory nerve of the stomach, and that it contains stimulating and probably inhibitory fibres
- (2) Gastric juice, the secretion of the various glands of the stomach, is a clear liquid containing in addition to a small amount of mucus and some mineral constituents, hydrochloric acid and three ferments, namely pepsin, rennin, and gastric lipase.
- (3) Pawlow showed that there are two phases in gastric secretion. During the first phase psychic impressions such as the sight and odor of food, desire to eat (appetite) and mastication are the stimuli; and during the second some form of chemical stimulus is the excitant. He was also able to demonstrate that mechanical irritation alone is unable to produce a flow of gastric juice.
- (4) Edkins extracted from the pyloric mucous membrane of a dog a substance, gastric hormon, which when injected into the blood of an animal produces a free secretion of gastric juice. This, he believes, is the stimulus of the second phase of secretion in the stomach.

This hormon would naturally be produced as long as substances are present to act upon the pyloric mucous membrane.

- (5) The acidity of the native juice of a dog, obtained from a gastric fistula, the animal being "sham fed," was found by Schoumow-Simanovski to be 0.46 to 0.58 per cent.
- (6) In the case of a girl with fistulæ of the œsophagus and stomach, subjected to "sham feeding," Bickel found the acidity of the native juice to be relatively constant, varying from 0.35 to 0.55 hydrochloric acid. Bickel is of the opinion that the variation of acidity depends principally upon the degree of neutralization of the juice by gastric mucus. Similar results have been obtained by other investigators.
- (7) The principal function of the stomach is to convert the food into a gruelly mass fit for intestinal digestion. This is brought about by gastric ferments, especially by pepsin in presence of hydrochloric acid, which dissolves gelatin forming substances, elastic tissue, and all true proteins.

(8) The evacuation of the stomach is due to tonic contraction of the fundus and peristalsis of the pyloric portion. Cannon demonstrated this by radioscopical examination.

(9) The chyme is not propelled into the duodenum continuously but in jets, the pylorus opening and closing alternately.

+10) Serdjukow demonstrated that the pylorus

remains closed as long as the duodenal contents are

These are normal physiological phenomena and should always be kept in mind when one is studying perversion of gastric functions. It will be observed that the native juice, free from food, obtained from a gastric fistula during "sham feeding" has an acid content more than twice that of gastric contents, after a test breakfast. If one gives a meal 35 grammes of white bread and 400 c.c. of water or weak tea without sugar or milk, and after an hour removes by siphonage the gastric contents, the normal acidity calculated as hydrochloric acid varies from 0.14 to 0.22 or 40 to 60 (expressed in 1/10 solution sodium hydroxide). However this is not the acidity of the gastric secretion but of the native juice, modified by the evacuation of acid chyme into the duodenum and by partial neutralization by saliva, food, mucus, and transudate. Thus there are so many factors which take part in the genesis of the acid content of gastric contents that it is very difficult in some cases to determine the kind and degree of perversion of gastric secretion by chemical analysis. I can readily imagine cases of diminished secretion of gastric juice as a whole (subsecretion) diagnosticated, by our present methods of examination, as hypochlorhydria; and similarly hyperchlorhydria may be mistaken for oversecretion. This view is, I think, supported by my observation in cases of chronic gastritis, carcinoma of the stomach, and achylia gastrica, in which the absence of marked motor insufficiency, diminished percentage of hydrochloric acid is usually associated with greater consistency of the gastric contents; and similarly hyperchlorhydria with diminished con-This character of gastric contents is usually evident from visual examination and from the viscosity as determined by means of a stirring rod. I have also confirmed it by determining the specific gravities of the gastric contents. As a rule diminished percentage of hydrochloric acid is associated with an abnormally high and increased percentage, in the absence of much mucus, with an abnormally low specific gravity.

In this connection one should remember that the maximum percentage of hydrochloric acid in native juice is 0.58 or about 160 (expressed in c.c. 3/10 solution sodium hydroxide) which according to my observations is greater than the total acidity (per cent.) of the gastric content in the most severe form of hyperchlorhydria. The writer after analyzing a large number of gastric contents-probably one thousand—has never observed a total acidity above 140. This suggests that increased percentage of hydrochloric acid in gastric secretion may be a rare occurrence. In the past we have paid too much attention to percentage and too little to mass of hydrochloric acid in gastric contents. I may add that I know of no evidence, physiological or pathological, which proves beyond doubt that the percentage of hydrochloric acidity in the secretion of

the stomach is subject to marked variation. In gastric analysis we do indeed find great variation in percentage of hydrochloric acid in the contents of stomach after a meal; but this may be explained by variation of gastric secretion as a whole or by variation in degree of neutralization by saliva, mucus, food, and transudate, and also possibly in some cases by bile and pancreatic juice.

The motor and secretory functions are so interdependent that in interpreting the results of chemical analyses it is frequently very difficult to determine which perversion of function is the more important morbid factor.

According to the teaching of physiologists—confirmed, I believe, by clinical experience-motor insufficiency due to spasm or stenosis of the pylorus, gastroptosis, or myasthenia gastrica should modify the acidity of the gastric contents which in the absence of carcinoma, pernicious anæmia, and other markedly debilitating diseases is usually an increase in the percentage of hydrochloric acid.

On the other hand over secretion of hyperchlorhydria by producing spasm of the pylorus might modify the gastric motility. The observation of Edkins has an important bearing on this relationship of motility to secretion. He has shown that the chemical stimulus of gastric secretion is a hormon formed in the pyloric mucous membrane, during gastric digestion. One should expect therefore the chemical phase of gastric secretion to continue as long as there are substances in the stomach to act upon the pyloric mucous membrane. This is a most important consideration in studying the pathogenesis of gastric affections. Perversion of motor function is a very common disturbance in diseases of the stomach; and is probably more active than perverse secretion in causing subjective symptoms. Patients whose gastric contents show a high percentage of acidity frequently suffer more from stagnation of food and hyperæsthesia of the gastric mucosa than from excess of acid. Hyperæsthesia especially is a frequent cause of subjective symptoms, particularly in patients suffering from some forms of neurasthenia. A patient with normal percentage of hydrochloric acid in gastric contents may have subjective symptoms very similar to those usually observed in cases of the so called hyperchlorhydria. Thus in two cases recently under my care the analyses of gastric contents were practically normal but still the patients suffered from heartburn, pain after eating, and other complaints usually observed in the symptom complex of the so called hyperchlorhydria. The pain was relieved by the ingestion of food or by the exhibition of baking soda. These patients suffered, I believe, from neurasthenia with hyperæsthenia of the gastric mucosa.

In the treatment of diseases of the stomach these facts are very important. In the past, particularly in cases of gastric neuroses, too much contention has been given to percentage of hydrochloric acid in the gastric contents and too little to the motor and sensory functions, and psychic state of the

I shall now briefly state some observations and considerations on some diseases of the stomach usually characterized by perverse secretion of gas-

In 1842 Golding Bird showed the absence of free hydrochloric acid in the gastric contents in a case of carcinoma of the stomach. However, very little attention was given to this observation until Van der Velden in 1870 made some observations in a series of similar cases. Since then this has been looked upon as one of the most useful signs in the

distinctive diagnosis of gastric diseases.

There are, however, many exceptions to the rule, particularly in the early stages of the disease. According to my observations free hydrochloric acid is present in about ten per cent. of the cases at first examination. In the advanced stages of the disease the exceptions become fewer probably less than five per cent.

With regard to the sign of cancer I feel that many physicians have a wrong conception of its They speak of the absence of free hydrochloric acid as a sign of perversion of gastric secretion quite distinct from diminished secretion of gastric juice or of hydrochloric acid. One should remember that free hydrochloric acid only appears in the contents of the stomach after the saliva, food, mucus, and transudate are neutralized or chemically satisfied. If the gastric secretion do not contain sufficient acid to satisfy all these affinities then free hydrochloric is absent; but combined hydrochloric acid, i. e., hydrochloric acid loosely combined with protein, may be present. After a time the quantity of this acidity diminishes until in advanced cases there may be neither free nor combined hydrochloric acid in the contents of the stomach. we take this idea of the perversion of secretion then the condition of the stomach before the development of the carcinoma must be taken into consideration; and we can also give an explanation of the exceptions, i. e., cases in which free hydrochloric acid is present in gastric contents.

According to my observations all the cases of cancer of the stomach, in which free hydrochloric acid was present in advanced stages of the disease, gave a history of having suffered from gastric ulcer or acid gastritis, affections usually characterized by excess of free hydrochloric acid in gastric contents, and frequently by a large excess. I am aware that cases have been recorded in which free hydrochloric acid was present in advanced stages with no previous history of gastric diseases. It is possible that in some of these cases an acid catarrh might have been present without producing appreciable dis-

tress.

The absence of free hydrochloric acid in gastric contents or better diminished secretion of gastric juice or of hydrochloric acid is, I believe, a valuable sign in the diagnosis of gastric cancer. Alone it is of very little value, as it is also a sign of acute gastritis, chronic catarrh of the stomach, pernicious anæmia and other affections. Associated with other signs such as rapid loss of weight, vomiting, presence of Oppler-Boas bacillus, much lactic acid in gastric contents, coffee ground vomitus, etc., it is very valuable, particularly in the absence of palpable tumor. Without it, it would be frequently impossible to make a diagnosis.

Acid Gastritis

This is a chronic disease characterized by excess of mucus and of hydrochloric acid in gastric contents. The total acidity is high (70 to 120), of which free hydrochloric acid is 20 to 60.

According to my observations this gastric affection is common among alcoholics. In fact over 80 per cent. of the cases of chronic gastritis among

persons who use alcohol in excess have been characterized by excess of hydrochloric acid in gastric contents.

Another observation worth recording is the not rare association of this affection with gastric ulcer and carcinoma. My experience teaches me that acid gastritis predisposes to both ulcer and carcinoma. The latter is more apt to develop in persons who have a hereditary predisposition to malignant disease.

When carcinoma complicates acid gastritis or gastric ulcer free hydrochloric acid may be present in advanced stages of the disease. This is particularly true of cancer engrafted on a pyloric ulcer, in which I have observed in five cases free hydrochloric in gastric contents in very advanced stages.

Achylia Gastrica.

This is a disease characterized by absence of free as well as of combined hydrochloric acid in gastric contents. It may be primary neurosis or secondary to organic disease of the gastric mucosa.

The symptomatology, of course, varies with the pathology of the morbid condition. A symptom of common occurrence is chronic diarrhœa. One should, therefore, in patients suffering from chronic diarrhœa, always consider achylia as a possible cause.

In my practice there have been at least three cases of achylia gastrica of the primary type. In one patient, a physician suffering from Graves's disease, there was a history of chronic diarrhœa of fifteen years' duration. In another, a Swedish woman who had lost a husband and four children with tuberculosis, there was a history of diarrhœa of four years' duration.

In both of these cases the exhibition of dilute hydrochloric acid checked the diarrhœa. This suggests a use of hydrochloric acid in the diagnosis of achylia. Whether achylia is present in all cases of diarrhœa controlled or cured by the administration of a mineral acid I am not prepared to state; but I do know that hydrochloric acid is a most useful agent in the treatment of diarrhœa in cases of pernicious anæmia and of severe infections, diseases in which achylia may be present. How it acts it is difficult to explain. Possibly by starting peptic digestion it leads to the formation of the gastric hormon which stimulates gastric secretion. With gastric juice in the stomach the food is protected against putrefaction and prepared for intestinal digestion, and the normal mechanism of the pylorus is restored.

HYPEREMESIS DURING THE GRAVID STATE IN TWO SUCCESSIVE PREGNANCIES

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In reporting this case of persistent vomiting in the early months of pregnancy in two successive gestations, only a clinical picture will be drawn, as no chemical and microscopical studies of the urine could be carried out, and only one blood examination was at hand. In both attacks of hyperemesis the clinical picture of the case was so alarming that radical measures were most urgently called for.

There was one feature in the case that was of interest in so far that a definite pelvic lesion existed. The patient was suffering with a retroverted gravid uterus, and in the absence of marked urinary changes the question arose whether relief could be given by replacing the gravid organ. Accordingly the uterus was replaced and held in position by pessary and packing, but without giving the slightest relief. In fact, during this procrastination the condition grew worse and a further delay might have

proved fatal. In the light of our present knowledge of hyperemesis, only the mildest cases of vomiting of pregnancy can be considered as "physiological" due to reflex causes, and it is a question if even these cases should be so considered. The literature abundantly shows that hyperemesis is a symptom complex of grave pathological process in the liver and kidneys, and that there is a close relation between this condition and eclampsia, as well as acute yellow atrophy of the liver. It has been demonstrated by careful investigators that the underlying condition in these diseases during the gravid state, is one of toxæmia; hence the term "toxæmia of pregnancy." condition of toxæmia of any kind is a most complicated one, very little understood, and the toxæmia of pregnancy is no exception. Out of the complex nature of the toxæmia of pregnancy this much has been learned, that there is a marked disturbance with the nitrogenous metabolism; the liver failing to oxidize the proteid derivatives into urea. The principal proteid derivatives are the amido acids and ammonia circulated freely in the blood. Ewing (1) says "The exact nature of the disturbance of introgenous metabolism which is responsible for the clinical manifestation of the toxæmia of pregnancy, is a failure of oxidizing capacity on the part of the liver. For this reason the proteid derivatives-principally amido acids and ammoniawhich are normally combined by the liver into urea, are no longer combined but circulate free in the blood in poisonous form, and are to some extent excreted by the kidneys." Ewing further says: "Besides ammonia and amido acids, other proteid derivatives-as those containing sulphur-fail to be oxidized and these doubtless contribute to the toxæmia.

In the toxemia of pregnancy, the urinary findings are of such a nature as to give us valuable information as to the severity of the intoxication. and hence the prognosis of the case. In these cases the urine contains acetone, diacetic acid, beta oxibutric acid, ammonia, uric acid, leucin tyrosin, indican; sometimes bile pigment, and other unoxidized proteid radicles, and instead of the sulphate salts the unoxidized sulphur compounds are found. Albumin and casts may be present in the urine, but even in the severe and fatal cases, both of these may be absent. Therefore, an ordinary urinary examination, such as can be carried out at the office of a physician, is of little or no value in cases of toxæmia of pregnancy. Only a complete urinary examination, carried out in a well equipped laboratory by a competent chemist and microscopist, can give us the desired information as to the degree of the disturbance of the introgenous metabolism in each individual case.

The complicated chemicophysiological questions involved in the toxemia of pregnancy have been studied from various points. Is the toxemia due to a chemical substance circulating in the blood, and if so, is it derived from defective metabolic changes in the organism, or does it reach the mother from the fœtus or placenta, are at present unanswerable questions.

The urine has been studied with greatest care in the toxæmia of pregnancy and it has been found that there is a disturbance in the normal ratio that exists between the nitrogen derived from urea, the nitrogen of ammonia, and the nitrogen of undetermined sources. Pregnancy has the effect of causing a disturbance in metabolism, resulting in lowering the excretion of urea, increasing the ammonia, increasing also the amino acids and those substances from which are derived the so called "undetermined nitrogen." As we cannot express in definite terms what really constitutes a normal nitrogen ratio in every case, it is also impossible to express numerically what constitutes an abnormal nitrogen ratio.

In a recent paper Dr. Craigins (2) says: "In order to intrepret the abnormal it is necessary to understand the normal nitrogen output"; and for this reason the writer placed in bed for nine days at the Sloan Maternity Hospital two normal pregnant women in their last month of pregnancy. Their diet was solely milk and water—the same diet which our toxæmic patients would be likely to have, and the nitrogen ratios in the twenty-four hour specimens of these women were determined by a professional chemist for each of the nine days, with the following results.

The average for the two patients for the nine days:

Urea nitrogen 83.26 per cent. of total nitrogen Ammonia nitrogen 5.16 per cent. of total nitrogen.

Amido acid and undetermined nitrogen. 6.43 per cent. of total nitrogen.

This may be taken as a normal nitrogen ratio in a gravid woman.

It has also been found that urinary findings and clinical evidences do not always harmonize. A patient may have a low urea nitrogen, high undetermined nitrogen, and present few or no symptoms of toxæmia. In her case the metabolism is disturbed, but she remains free from symptoms, while her sister with the same nitrogen ratio findings will suffer with persistent vomiting, headache, and undermined mental and physical vigor. In some cases the undetermined nitrogen ratio will be a better index of the severity of the toxæmia, while in other cases the high ammonia nitrogen ratio will be a better index.

Stone, the pioneer student of this subject, has divided these cases of hyperemesis gravidarum into three classes: 1, The fulminant; 2, the acute; and 3, the chronic type. The fulminant type proves rapidly fatal, with symptoms of acute yellow atrophy, without jaundice. The acute type develops jaundice, with high pulse, great prostration, nervous disturbance, while the chronic type may run into the preeclamptic stage. Ewing (3) says: "When toxemia develops in the early months of pregnancy, vomiting is usually prominent, low urea and high ammonia nitrogen is the rule, and the fatal cases take the form resembling acute yellow atrophy. When it develops in the latter months, vomit-

ing is less common, circulatory and cerebral symptoms are prominent, low urea and high undetermined nitrogen are usually found, with albuminia; and the fatal cases end in eclampsia." Ewing further says: "Considering the metabolic changes as indicated in the urinary nitrogen, there appears to be no distinct difference between eclampsia and preeclamptic toxemia and some cases of persistent vomiting."

While nephritis is more frequently present in the precelamptic stage of toxemia, and always present in eclampsia, it occurs also in cases of hyperemesis. In cases of persistent vomiting in the early months of pregnancy, the same patient may suffer with albuminuria in the latter months of her gestation. This may show apparently that the toxemia finally resulted in kidney changes, as is shown by signs of nephritis. Clinicians have observed cases with disturbed nitrogen ratio plus symptoms of toxemia, where several weeks later nephritis developed with a disappearance of the abnormal nitrogen ratio. It has also been observed that under the latter condition the prognosis of the cases is better than when a nephritis and a disturbed nitrogen ratio coexist.

The theory that the toxæmia of pregnancy is of the nature of an acid intoxication has been found lacking in so far as definite chemical confirmation goes. According to this view the toxemia results from abnormal acids circulating in the blood, these abnormal acids arising during the course of disturbed metabolism in the organism. The theory, however, fails to show why these acids develop. The suboxidation view explains the toxemia of pregnancy a little more favorably. According to this theory, toxic substances form and circulate in the blood because of the proteid bodies not becoming properly oxidized into urea and ammonia, and evidence of this suboxidation is abundantly found in the urine. A further clinical research into the question of oxidation has resulted in learning that it is not so much a question of true oxidation as of failure on the part of the metabolic processes to remove the so called amino group during the conversion of proteids into urea and ammonia. This particular failure of metabolism has been termed by Ewing "deficient desamidation." He further says, regarding the toxemia of pregnancy: "The conception of the disease as a disorder of metabolism removes much of the point in the long standing discussion whether the process is an affection primarily of the liver or of the kidneys and to what extent an hepatic insufficiency or intestinal intoxication may be The present theory of a deficient desamidation, itself of complex origin, places all of these factors in a subordinate position to the altered chemical processes in metabolism. Changes in structure and functions of the liver arise early in the disease, since the organ is chiefly, though not alone, concerned in nitrogenous metabolism. Once altered in structure by granular and fatty degeneration and crippled in function, there is good reason to believe that the liver contributes prominently in a vicious circle of influences which maintain the disorder. In this condition it often fails to detoxicate products of intestinal decomposition. At a later stage the kidneys are progressively involved by a mechanism which is little understood, and a prominent affection of this organ seems a necessary condition in eclamptic convulsions. In the latter months of gestation toxic products from the fœtus and placenta, and from the maternal tissues at all stages doubtless contribute to the complex picture of the disease, but all of these owe their existance and operation to the original disturbance of metabolism in the mother."

Not alone the abnormal urinary findings but definite pathological lesions in the liver, are the bases for establishing the toxemia of pregnancy as a definite disease. Eclampsia, acute yellow atrophy, and pernicious vomiting all may show pathological changes in the liver. Ewing thus describes (4) the liver changes in a case of eclampsia: "The liver in the gross is usually normal in size, reduced in consistency, while surface and section present many minute hæmorrhagical foci. Microscopically, there is a uniforn, and intense granular hydropic and fatty degeneration of the liver cells. which results in nearly complete disorganization of the protoplasm, and therefore in abolition of function of these cells there are also numerous focal necroses. There are finally many is ninute hæmorrhages, usually but not always, in renation to the necrotic foci. The lesion occurs practica lly without exception in all typical cases of acute fat; al eclampsia at term, and in at least ninety-five pent cent. of all cases of any variety of eclampsia, it is a pathognomonic of this type of the disease.

In the cases of acute yellow atrophy, the liver is diminished in size, and the microscope shows in the hepatic lobules a complete fatty degeneration continuous the interment wo thirds, an area of necroses and disprated cells outside of this, while the periphert of the lobules shows cells undergoing granular describes a case of acute yellow atrophy two month is after an abortion and calls the case "postgestational acute yellow atrophy." He says: "Liver weighed one pound ten ounces, was very soft, uniformly deep red, lobules obliterated." Microscopically, there are the changes of a late stage of acute yellow atrophy. Only a few islands of fatty liver cells remain. Nearly the entire organ is reduced to a disintegrated mass of microbical liver cells mixed with blood and bile.

That there are cases of toxemia without marked hepatic changes has been shown, but these findings do not necessarily argue that the toxemia does not depend on disturbance with liver function. The formation of urea is a liver function, and if the organ fails to functionate, a disturbance in the metabolism must occur. Disturbed function, however, does not necessarily mean anatomical changes. The histological changes in the liver cells may be very minimal, while the oxidizing capacity of the organ may be greatly at fault. As Ewing remarks: "The anatomical lesions certainly follow and do not precede the disturbance of function and there may very well be several steps between the loss of oxidizing capacity and the hydrolysis of fatty degeneration, and necrosis of the liver cells."

It is because of the inconstancy of the histological changes in the liver in some cases of toxæmia of pregnancy, that Herz, in 1868, elaborated the

theory of "functional paralysis of the liver." According to this theory the liver fails to oxidize the products of digestion into urea because the hepatic cells are functionally paralyzed. This paralysis is not easily explainable. Herz asserts that such a hepatic paralysis can be brought about experimentally by tying the ureters. It has also been stated that hepatic congestion is a frequent accompaniment of suppressed menses, irrespective of whether this suppression of menstruation is due to amenorrhœa, castration, menopause, or pregnancy. As a result of this circulatory disturbance hepatic enzymes fail to be produced, but no structural changes in the liver cells need, necessarily, occur. Under such a condition the oxidizing capacity of the liver will be at its lowest point, and this hepatic incapacity may continue for some time before histological changes occur in the lobules.

The following is the history of the case given to me by the attending physician, who saw the patient for the first time on October 25, 1906.

Mrs. B., age twenty-six, married six weeks, gave the following history: Her health had always been good, never suffered with stomach trouble or constipation. She began to menstruate at fourteen, and always normal. She flowed ro menstruate at fourteen, and always normal. She nowever your weeks with little or no pain. For the past three weeks she had been feeling very badly on account of the worstant nausea and vomiting. At first the vomiting occurred in the morning and once or twice during the day, but now the vomiting had become almost continuous and the property of the party retaining the party of t it was impossible for her to retain any nourishment whatsoever. She had to take to her bed, slept very little, bowels were constipated, and she complained bitterly of nausea and pain in the abdomen, especially the epigastric region. Temperature 98.6° F.; pulse 110. Vomitus green in color. The treatment at this time consisted of bismuth subnitrate, gr. x; cerium oxalate, gr. x; morphine sulphate, gr. ½, every four hours.

October 26, 1906. Vomiting stopped for short intervals, sometimes for a few hours at a time, but developed a burning sensation in the stomach. Bowels had not moved by enemata. She complained of acid eructations and burning in the stomach. Colonic irrigation was now resorted to

and rectal feedings given

She was not seen until November 16, 1907, when the attending physician was told that the condition of the patient had continued about the same; that she had remained in bed since October 26th; that all and every kind of food was vomited; that she did not sleep; that the pain

and burning in the stomach had continued

Bimanual examination showed the cervix long, uterus Bimanual examination showed the cervix long, uterus retroverted and gravid about two months. Iodine applications and tampons were now applied daily for three days without effect. Saline rectal injection, nutrient enemata were given, with iced champagne by mouth. Pulse 130; temperature 98.6° F. She had had no headache, but was externally restless. She rolled around the bed, turned from side to back and from back to side, scarcely remaintening and the position for more than a few minutes. She ing in any one position for more than a few minutes. presented the picture of abject distress and agony. She threw her hands about in a most restless fashion and begged bitterly for relief. While her actions simulated those of an hysterical patient, her face spoke eloquently of suffering and distress. Tongue was dry; examination of heart and lungs was negative. Vomitus green in color.

The whole abdomen was extremely tender to the touch and exceedingly hyperæsthetic. The slightest touch, especially in the epigastric region, caused most distressing retching. She moaned and groaned continuously. Her retching. She moaned and groaned continuously. Her condition had gradually become worse; she was delirious at times. Morphine in full doses gave no relief. She looked haggard, complained of pain in the abdomen, was very weak and restless, and prayed for death. Urine showed high specific gravity, was scanty in quantity, no albumin or casts. After consultation, uterus was replaced

and held in position with packing.

November 24th, patient was in very bad and dangerous condition. Pulse 140, weak, and temperature 99.6° F. She

was etherized and curetted. While recovering from the anæsthetic she vomited twice and her stomach symptoms

immediately began to improve.

November 25th. Pulse 150, weak, nutrient enemata con thread. On the third day following the evacuation of the uterus the patient began to take nourishment by mouth. She gradually regained strength and was out of bed in ten She soon grew stout, and gained twenty pounds over her average weight. The following month, examination showed uterus retroverted. Nothing was heard of her until March 27, 1907, when she said that she last menstruated on January 30, 1907, but did not have sexual relation until March 5, 1907. One week ago, or fifteen days after coitus, the begun to have proving sorting. she began to have morning vomiting. Since then the nau-sea and vomiting gradually increased and patient was unable to retain any food; even ice water was rejected. She was restless, unable to sleep, and complained of thirst and epigastric pain. Pulse 90; temperature 98.6° F; tongue clean. Heart and lungs normal. Great abdominal tenderness. Could not bear the weight of the bedclothes. Uterus enlarged and retroverted. Treatment consisted of cerium oxalate, cocaine, bismuth. No food by mouth, colon irrigation, nutrient enemata, etc.

March 28th. Vomiting was almost continuous. Patient

complained bitterly of epigastric pain and pain in the lower part of abdomen. She had to be restrained and watched constantly. Pulse 90; temperature 90° F. Under anaethesia uterus replaced and held there by tampons. Treatment

continued.

March 29, 1907. Patient's condition was much worse, similar to that in her first pregnancy. She vomited and retched continuously, and was delirious. Urine showed 1,030 specific gravity. No albumin, no sugar, no casts; urea 14 grains to the ounce. Blood showed over 4,000,000 red blood corpuscles; 11,000 whites; 85 per cent. hæmoglobin. March 30th. Patient was amesthetized, and uterus was emptied. Very profuse bleeding; pulse 130; uterus packed. Patient soon rallied. No vomiting after anæsthetic. Two days later food by mouth.

days later food by mouth.

April 7, 1907.. Patient out of bed and felt well, able to April 7, 1907.. Patient out of bed and felt well, able to take solid food. Urea secretion normal. When questioned she said she had no recollection of events three days prior to operation, and one day following.

I. American Journal of Obstetrics, February, 1905, p. 150.

2. Ibidem, March, 1908. 3. Ibidem, March, 1907, p. 298. 4. Ibidem, February, 1905, p. 145. 159 West One Hundred and Twentieth STREET.

THE NEED AND VALUE OF HEALTH INSPEC-TION WORK.*

BY LYMAN ASA JONES, M. D., North Adams, Mass., State Inspector of Health, District No. 15.

That the need for health inspection work should

require presentation and explanation to a body of every day citizens is easily understood. The average citizen thinks but little and knows less about matters pertaining to health. The subject seldom touches him individually except when preventable sickness has taken hold on him or some member of his family. And even then many of the more ignorant regard their case as something sent them by Providence, like the Frenchman whose house I was one day quarantining for diphtheria. After a somewhat lengthy disquisition upon the danger of infecting others and the precautions which should be taken, which I flattered myself I had made especially plain, simple, and convincing, the father of

^{*}Read at the annual meeting of the Massachusetts Medical Society, Boston, June 9, 1008.

the patient turned to me and said, "But, you know, I think the Lord He send these sickness, and it is not right to do anything to interfere with His will."

The sequel in this instance, owing to the lack of a contagious disease hospital, and the failure to realize that nothing short of a police guard would enforce quarantine, and owing to an entire change of the health board at this juncture, was that in related families near by a number of other cases occurred, two of which were fatal.

In another instance, when the mother of a little fellow who had diphtheria was remonstrated with for permitting the child to run about the house, and to cough and spit promiscuously, she replied, "He no sick, that no harm." That the remonstrance was ineffectual is shown by the fact that other cases occurred in the family, and that one or two of the

family died.

That this subject of health inspection and its need should require presentation to health officials not infrequently can also be readily understood in calling to mind the manner in which such bodies are formed and the personnel of which they are composed.

In cities, unless the charter provides otherwise, the mayor appoints annually a member of the board of health, one of whom must be a physician, to serve three years. As a matter of fact, in many cities the whole board is appointed annually. In towns the board of health may be elected, one member each year, to serve three years. In case no board is elected, the selectmen serve as such a board. If the population of the town is over 5,000, at least one member of the board, if there be such, must be a physician.

In consequence of this arrangement the larger places are apt to be better off than the smaller places. In the latter the selectmen frequently act as boards of health. The selectmen are largely representatives of one or another political party or faction, and they have no more knowledge of health matters than the ordinary citizen. Such medical advice as they may have occasion to seek from time to time, will not infrequently come from some one whose influence they desire to secure, or is made the occasion of returning some political favor, regardless of the qualification of the adviser to give sound and intelligent

They may refrain from insisting upon proper health measures or requirements for fear of estranging political supporters. In larger places this difficulty often arises from an unwillingness to proceed against prominent or influential citizens or corpora-

Narrow minded boards, through ignorance or failure to realize the necessity for health work, refrain from spending money through a desire to keep the expenditures under, and imagine that they are careful and economical of the taxpayers' money.

For example, a board of health, not realizing the value of negative cultures to release diphtheria quarantine, declined to pay a bill for such work, and further refused to spend even the small sum involved in paying the express charges on cultures sent to the laboratory of the State Board in Boston.

The chairman of a local board of health, a physician, was called one day to see a guest at a hotel, and found the patient ill with diphtheria. He informed the patient of the nature of the disease, that he would have to quarantine him, that he would go out and get the cards, etc., and return in an hour or so to put them up. He also informed him that there was a train leaving town within a half hour. his return the patient had departed.

In another instance, in another hotel, the same chairman acted in like manner. In this case, too, a train departed conveniently soon after his first visit. On his return with the cards to establish quarantine

the patient was missing.

As a subject of speculation it might be interesting to inquire whether the towns whither these patients went were notified of these facts as a matter of

courtesy.

At first thought it would seem quite unnecessary to say anything to a body of physicians as to the need of health inspection work in the State, and yet during a brief experience in public health work this very need has been assuming an increasing prominence; indeed, in some ways it is the thing of most importance at this time. Unfortunately, even by physicians themselves, its necessity and value are not sufficiently realized.

There are, for example, physicians like the one who, recently, when asked if he had any cases of measles-none having been reported by him-replied, "Yes, lots of them, but hell, I don't report such cases." Physicians who choose rather to deliberately endanger the community for the sake of currying favor with this or that family by thus enabling them to avoid quarantine restrictions.

One physician said he had been told he need not come again because Dr. X did not put any card on the door for such cases and they preferred to have

In a hotel outside of the State a clerk had scarlet fever. The physician called said the patient could either go home or else he would have to quarantine him there in a hospital. The patient chose to go to his own home in this State, and several cases of scarlet fever followed in his immediate home local-

A physician telephoned that a scarlet fever patient was ready to be released from quarantine. An inspection showed that desquamation was still in

progress on the hands and feet.

Another physician, annoyed by having his release cultures in a case of diphtheria returned positive, took a culture from his own throat, and when that too was reported positive, became more convinced than ever that the whole thing was foolishness, and the work of the laboratory in his opinion was dis-

Another physician decided that a given case was not smallpox, and was said to have advised that other physicians be not called in for fear they would pronounce it such. Seven other unmistakable cases of smallpox in the household later told the story

If physicians who are more or less prominent in their respective localities will do these things, the necessity that they be educated along public health lines is evident.

The conditions thus far pointed out, and the incidents given, all of which are actual occurrences within a comparatively narrow range of observa-tion on the part of a single individual, would seem to indicate unquestionably the need of health inspection work. If each physician could become so impressed with the urgent necessity for public health work that he himself would cooperate heartily with the various health authorities, and impress the importance of this work upon the laymen within his personal circle of influence, it would not be long before a splendid public health service could be built up.

In the abstract the value of individual health is usually recognized, though there are many people who are prodigal and wasteful of health, either through selfish indulgence, or through a feeling of compulsion that certain things must be accomplished regardless of consequences. No argument, however, is usually required to convince an individual that with health he may accomplish much, and that withhealth he may accomplish much, and that out what he may desire.

The value of public health is not so readily appreciated. In the abstract again, any one will admit that it is good and desirable, but that it is worth the expenditure of public money to secure, is quite another proposition. People do not readily see the gain which corresponds to the increased expense.

The funds expended by the street department have substantial results to show in return; witness, paved streets, sidewalks, and gutters. The sewer department with its funds establishes sewers, catchbasins, disposal plants, etc. The water department has reservoirs, miles of pipe, fire hydrants, and the like. So the park, school, and police departments show in various striking and evident ways returns for money expended.

The health department has no such outward results to bring forward for its expenditures. It is charged with the appropriation if perchance there is one, and it has gone largely for services, labor, and supplies, which have left nothing visible to the eye, nothing which shows on the treasurer's books.

This leads to a reluctance to supply this department with funds for much needed work, because it is regarded as a more or less unnecessary expense, as an extravagance, as money wasted on a fad which some radical and visionary people are urging without proper warrant.

In one town a prominent physician informed me that they had no board of health because they werafraid such a board would be a nuisance to the town on account of extravagant and unnecessary ideas they might wish to carry out. People who take this attitude are too much of the opinion that what sufficed for the fathers is good enough for us, evidently forgetful of the changed and changing conditions.

Health inspection work, however, has a very real value, none the less real because it does not appear on the credit side of the ledger. The following instances will perhaps serve to demonstrate somewhat this value.

In one city of less than twenty-five thousand, during a space of two years, there were 176 cases of typhoid fever, an average of eighty-eight each year. During the second of these two years preventive efforts, continued to the present time, were begun by the board of health. During the four years following there were only 120 cases, an average of

thirty each year, a saving of fifty-eight cases annually

If the expense of an illness like typhoid fever, counting loss of wages, expenditures for medical and nursing attendance, and extras of various kinds, is estimated at the extremely moderate sum of \$200, there is a saving of \$11,600 in each year for four years, or a total of over \$46,000, which is a real saving in dollars and cents, and none the less a saving because it does not appear in the financial statement of the city's affairs.

During this current municipal year, now six months advanced, there have been but nine cases of typhoid fever.

This showing of the value, of the profit if you will, of health work would be more striking if the lives saved were taken into account, for during this same series of years 15½ percent. of the cases were fatal. On this basis over forty-five lives have been saved. Surely this is a record to be proud of. The saving on this one disease in any one year has been almost double the entire amount appropriated for the usual work of the board for that year. And this represents only one item in the work such a board carries on.

In another instance, for lack of a proper system permitting the return of a child to school after quarantine, a boy was the means of communicating scarlet fever to thirteen or fourteen other children, two of whom died. The school was closed, and the school house fumigated, thereby entailing a direct loss, the amount of which cannot easily be estimated, which could have been successfully avoided had a suitable system for regulating such things been in force.

Health inspection work has a distinct value also in the affairs of individuals and corporations. I mean a direct financial value aside from its bearing on health, which factor is less easily estimated.

One concern, with thirty employees, situated in the country, had always used outside privies. Less than a year ago suitable modern closets were installed at an expense of over a hundred dollars. The manager assured me that in actual dollars and cents this sum and more had already been returned to him through increased efficiency resulting from the added comfort and healthfulness of his employees.

In another instance, in an establishment where forty men and women were employed the superintendent told me that they were losing at least five dollars every week, because the employees were obliged to go a considerable distance to use very poor privies. This sum has since been saved, for growing out of the inspection came the installation of modern closets.

Many other instances occurring in the course of health inspection work could be cited, but enough have been given to show that health inspection has a very genuine value, which is not generally recognized.

Granting that health inspection work is needful, the question comes, Why should this work be carried on by the State? Why not leave it in the hands of the local boards, which are already clothed with ample authority?

The answer to this question has already been suggested in part in pointing out some of the conditions under which such boards come into existence, and

the character of their members.

Grant further, however, that such boards are well informed about health matters, and that they are reasonably competent. This important fact remains true, that, generally speaking, we are all more or less selfish. Inasmuch as the whole is nothing more than the sum of its component parts, boards of health, too, are all more or less selfish. They are interested chiefly in preserving the health of their own town, and are prone to be not at all interested in the health of other towns, and often make special efforts to hold themselves aloof from cooperative Under such circumstances, though the boundary line is imaginary, and the dwellings continuous, the conditions affecting health existing near the border line within the one town, are rarely made the subject of a message of warning or advice to the authorities of the adjoining town.

One board allowed a case of smallpox to escape to an adjoining town, solely to avoid payment of the expense incidental to caring for the case within their

own borders.

Practically this means numerous boards, each going its own way, along its own lines, subject to no supervision or oversight except in the matter of diseases dangerous to the public health where the State board has coordinate powers with local boards, and in consequence the work is largely haphazard.

Further, the makeup of such boards undergoes frequent and sometimes entire change with each annual election. This is especially true in the case where the selectmen perform the duties of boards of

health.

The newcomers have no more training than their predecessors, and they lack entirely the year's experience which the retiring members have perchance laboriously and awkwardly acquird, and before this board has become really valuable, there is another change.

All these things point convincingly to the need for some means of uniting the various boards and making their work of mutual benefit, to the end that in safeguarding the health of the individual towns and cities, the health of the whole commonwealth may be

equally safeguarded.

The agency through which this should be accomplished is naturally the department of health. There should be the authority to supervise and coordinate through its agents the work of the local boards of health, and the right to force local boards to do any necessary work in case they failed through indifference, ignorance, or unwillingness to maintain the established standard.

Aside from the central authority just mentioned, there are other lesser factors which would aid in

securing an efficient health organization.

Local boards of health should be such, and should be independent of other officials, not identical with them. There would then be no temptation to consider the political effect in carrying out health measures. The only consideration then need be as to what will promote the public health. This point should receive further emphasis because public health is a most valuable asset, to preserve which arbitrary measures are often required, which under

other circumstances would not be tolerated. This means that the best results cannot be attained unless health officials are free to arrive at decisions unhampered by other than considerations of health.

Because health work reaches out in so many different directions, many of which come unexpectedly, some of which cannot be foreseen, and because the judgment of trained and experienced officials is of greater value than that of newly appointed inexperienced officials, there should be increased tenure of office, and members of health boards should be appointed in rotation. The present practice in some towns of appointing one member annually to serve three years should be made uniform. Members should be eligible to reappointment except for cause.

Having secured a health organization, experienced and capable, firmly convinced of the value of health work, various measures employed successfully in places should become uniform in their application.

A hygienic or sanitary history of each case of disease dangerous to the public health would be secured by the physician to the board, the appointment of whom is authorized under our present statutes, or through some properly trained agent.

through some properly trained agent.

This history would show the patient's name, age, residence, civil condition, occupation, school and church attendance, surroundings at home or shop, source of milk and water supplies, previous cases of the same disease in the home or neighborhood, etc.

These records would be kept and tabulated according to circumstances, and such tabulation would quickly suggest special investigation. For example, a second case of scarlet fever or typhoid fever on the same milk route would suggest looking up the dairy which supplied the patients. Two cases of typhoid fever, or even one, would suggest looking up the well, their source of water supply. One or two cases of diphtheria in a school room would suggest a special investigation of the room for a possible mild case of diphtheria untreated or unquarantined.

A system of showing cases of contagious or infectious diseases by houses would soon indicate whether any house was becoming infected, and would suggest a more or less complete renovation

according to circumstances.

To this latter point greater attention should be directed, and less emphasis placed on fumigation. Not that I belittle the process or need of fumigation in any way, but that there are many buildings so encrusted with accumulations of dirt and filth, that fumigation, however thorough, cannot eliminate the danger without renovation as well.

In larger places the provision of contagious disease hospitals should be obligatory, not permissive.

School inspection should not be dependent upon previous appropriation by the town, but should be made obligatory, carried on under uniform regulations adapted to the requirements of city, town, and country schools, rather than according to the varying ideas of each local school or health board.

These are only a few lines along which such work, already begun, may naturally be developed. These and others yet to come will be effective, however, only in proportion as we all come not only to realize their importance, but to act as if we believed them to be necessary, and succeed in impressing this necessity upon those with whom we come in contact.

We must appreciate, too, and insist upon the same

to others, that public health measures are aimed at the good of all, intended to secure for all the greatest measure of freedom in pursuit of their various pleasures and duties, to secure increased productiveness and prosperity, through the doing away with preventable disease, a luxury and extravagance always, which we can ill afford.

141 CHURCH STREET.

Correspondence.

LETTER FROM TORONTO.

The American Hospital Association.—The Training of Nurses.—The Management of Small Hospitals.—Internes and Nurses.—The Growth of the Association.—The Training of Housekeepers.—The Outdoor Work of Children's Dispensaries.—Tuberculosis Clinics.—Hospital Abuses.—Officers for the Ensuing Year.

TORONTO, October 12, 1908.

The tenth annual meeting of the American Hospital Association was held in Toronto during the week ending the 3d of October, under the presidency of Dr. S. S. Goldwater, of Mount Sinai Hospital, New York. There were about 130 delegates registered, and in addition there was a large number of visitors. Many prominent physicians of the United States and Canada were in attendance, among them being the superintendents of most of the larger hospitals in the two countries. The Rev. W. G. Wallace, D.D., of Toronto, opened the convention with prayer, after which the delegates were welcomed to the city by the acting mayor, Comptroller Dr. W. S. Harrison, who suggested that branches of the association be formed in every State and Province, and that these branch associations send delegates to the central organization.

The president, Dr. Goldwater, in his annual address, stated that the membership had doubled in single year, and that the total membership now reached to about five hundred. In his opinion, as membership in the association offered facilities for contact with the guiding minds of some four hundred institutions, it should include trustees, superintendents, and physicians and surgeons. He advocated modification of the organization to provide for a central body with working sections, each with its proper officers, and suggested sections on general administration, medical administration, and ex-

ternal administration.

The problem of training nurses came early before the association and commanded considerable discussion. This culminated in the following resolution presented by Dr. A. S. Kavanagh, of the Methodist Episcopal Hospital, Brooklyn, N. Y.: Resolved: That a committee be appointed, consisting of seven members of this organization, two nurses, two physicians, two laymen, and the president, whose duty it shall be to seek information from leading physicians, surgeons, nurses, and training school committes, and other available sources, bearing upon the curriculum and length of the course of training of our nurses; to consider to what extent hospitals should undertake to prepare a class of hospital nurses or assistants, and to re-

port upon the advisability of cooperating with such associations as the Young Women's Christian Association in the work; to present a model curriculum containing only such subjects as they think necessary for the proper training of a regular nurse or a nurse helper; and to report at the next annual meeting of the association. The sum of \$500 was appropriated to defray the expenses of the committee in gathering the information for their report.

A Layman's View of Hospital Work was the title of an interesting paper read by Mr. John Ross Robertson, chairman of the Trustees of the Hospital for Sick Children, Toronto. Mr. Robertson said that during the past thirty years hundreds of thousands of dollars had been received in voluntary contributions for the hospital represented by him. An intimate knowledge of the resources which sustained the work at this hospital showed that the dollars and dimes of the many were received rather than large donations from the wealthy; hence the millionaire and his money were not soon parted in this work.

In a paper on Problems in the Management of Small Hospitals, Dr. Theodore R. MacLure, of the Solvay General Hospital, Detroit, hospitals with fewer than fifty beds were dealt with. Dr. MacLure said that one of the hardest problems to deal with was the weakness of internes and nurses, showing that it was harder to keep the nurses away from the internes than it was to keep the internes away from the nurses. Another difficulty encountered was the egotism of young doctors, who, though they had just received their degrees, thought they knew everything there was to know about hos-

pital work. The Committee on the Development of the Association reported that 238 applications, of which sixtyfive were from trustees and members of hospital boards, had been received during the year. State of New York headed the list, with sixty-five applications, and Canada was credited with twentyfive. This committee suggested combining the offices of secretary and treasurer, with a renumeration, and the incorporation of the association. It was shown that the work of the association had developed to such an extent that in a few years it would dominate the entire hospital world in the United States and Canada. The treasurer's report showed receipts, including a balance of \$624.24 from 1907, of \$2,412.64, and disbursements of \$1,-143.74, leaving a balance of \$1,268.64.

Miss M. U. Watson, director of the Home Economic Department of the Macdonald Institute, in Guelph, Ont., gave an interesting talk on Trained Housekeepers. She pointed out that the training of housekeepers was at present in the initial stage, just as the doctor, the nurse, and the librarian had

to go through their initial training.

Field Work in Connection with Children's Dispensaries was the title of a paper by Robert W. Bruere, general agent of the New York Association for Improving the Condition of the Poor. He said that this branch of hospital work was of wide scope from the standpoints of health, public morals, and society. The field work was relatively of the same nature and effect among the poor as that of a Red

Cross corps among soldiers on the battlefield. The physical and social conditions were brought together by this medium under circumstances that differed from those of other occasions.

Dr. James Alexander Miller, president of the Association of Tuberculosis Clinics, of New York, in speaking on the subject of cooperation in dispensary work as exemplified by the Association of Tuberculosis Clinics of New York, dealt almost exclusively with the phase relative to educating people in the home as to the dangers of tuberculosis and

its treatment.

Then followed a discussion on the development of the work and restriction of the abuse of the out patient department. The discussion was closed by Mr. J. Ross Robertson, of Toronto, who made a few remarks from a local standpoint on the Hospital for Sick Children. According to him, the present indications were that some 8,000 to 10,000 people would be seeking assistance for their children. A few years ago they had discovered a large amount of imposition, but they had appointed an agent and this had to a great extent been remedied.

On the reformer, the man who was always job hunting, Dr. D. C. Potter, Chief of the Charitable Institution Division, Department of Finance, New York, came down pretty hard. On "grafters" he was particularly severe; woe unto the hospital where the reformer installed himself with the avowed purpose of economically administering its affairs. Under him there were sure to be changes which would involve dear fresh air, while fresh bandages would be an impossibility. There was no hippodrome of mirth so funny or so senseless as the general run of city governments, and sometimes they were tragic. The Canadian girls who went to the training schools of the United States he considered splendid types of young womanhood, and they became the best of good nurses.

The question of controlling infectious and contagious diseases was thoroughly gone into. Since 1802 it had cost the Hospital for Sick Children, Toronto, \$15,000 to \$20,000 by infection brought into the institution by people visiting the patients. This was corroborated by many of the delegates, who

stated they had a similar experience.

Dr. Donald McIntosh, of the Western Infirmary, Glasgow, who is making a tour of the hospitals of the United States and Canada, was made an honorary member of the association. He said he had gleaned valuable information in America, but he had yet to find a perfect hospital, even though he

had been in the United States.

Washington, D. C., was selected as the place of meeting in 1909, the time appointed being from September 22d to the 29th inclusive. Mr. Robertson was offered the presidency unanimously, but declined the honor. The following officers were elected: President, Dr. John M. Peters, of the Rhode Island Hospital, Providence, R. I.; vice-presidents, Dr. Arthur A. Aucker, of the City and County Hospital, St. Paul, Minn., Dr. J. N. E. Brown, of the Toronto General Hospital, and Miss Emma Henderson, of the New England Baptist Hospital, Boston; secretary, Dr. W. L. Babeock, of Grace Hospital, Detroit; treasurer, Dr. Asa Bacon, of the Presbyterian Hospital, Chicago.

Therapeutical Rotes.

The Use of Arsenic in Anæmia.—Lemoine, of Lille, while speaking on the treatment of anæmia in Le Nord médical, advises, among others, the following arsenic preparations:

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Vapor Compound for Use in Bronchitis of Infants.—In the treatment of bronchitis in infants it is recommended (Journal de médecine de Paris, September 26, 1008) to evaporate in the room three or four times daily a teaspoonful of the following solution added to five ounces of water heated in a teapot or a special vaporizer:

Wood creosote, 5i;
Tincture of benzoin, 3ii;
Oil of turpentine, 3iiss.

M.

Pruritus Senilis.—Levy remarks in the Berliner klinische Wochenschrift, September 28, 1908, that Leo, Köhler. and Ströll state in the Therapeutisches Jahrbuch, that it is possible to relieve, and very often to cure, pruritus senilis by the following:

B Diluted sulphuric acid, 5.0 grammes;
Distilled water, 175.0 grammes;
Syrup of rubu 30.0 grammes.
M. S. One tablespoonful every two hours.

A Lotion for Cracked Nipples.—Marfan remarks that the greatest care should be given to the dressing of tracked nipples, which should be washed with the following:

| F. | Rose water, | | | | | | .gr. xl; |
|-----|-------------------|-----|------|------|------|------|------------|
| | Glycerin, | | | | | | .gr. xx; |
| | Sodium borate, | | | | | | .gr. viii; |
| 2.5 | Tincture of benzo | iπ, | | | | | gr. xii. |

Diagnosis and Treatment of Fistulous Ducts.

—Beck (Zentralblatt für Chirurgie) injects through the opening of a fistula with a glass syringe and under very moderate pressure the following:

| | | G |
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| \mathbf{R} | Bismuth subnitrate, | gr. xxx; |
| | White petrolatum, | gr. lx; |
| | Paraffin, | gr. 5; |
| | Wax, | gr. v. |

He then takes a radiograph of the region injected and thus obtains a complete representation of the

The author has used this method in a number of cases, and always with success. In one of his cases the patient suffered for nine months from an empyema of the thorax, which discharged 120 grammes of pus in twenty-four hours, and the fistula had resisted all other treatments. It had been decided to subject the patient to the Estlander operation, but the author, as a last resort before surgical interference, wished to try his injection. After the twentieth injection the fistula closed and had not opened again at the time of the last examination, three months after it had closed.

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NEW YORK, SATURDAY, OCTOBER 24, 1908.

TROPICAL DISEASES IN THE UNITED STATES.

The American Society of Tropical Medicine has done much to arouse among us a proper interest in the diseases with which it deals, and much more may be expected from its further work. An additional impetus in the same direction is likely to be the result of the very scholarly oration in medicine delivered before the thirty-fourth annual meeting of the Mississippi Valley Medical Association, held recently in Louisville, by Dr. George Dock, of New Orleans, formerly of Ann Arbor, Mich. The address is published in the Lancet-Clinic, of Cincinnati, for October 17th.

In the early part of the address Dr. Dock paid a richly deserved tribute to the genius of Dr. Daniel Drake, whose monumental treatise on the diseases of the Mississippi Valley was one of the most conspicuous and valuable features of the American medical literature of the first half of the nineteenth century, quite equal in value to Dr. Elisha Bartlett's work on the fevers of the United States. Not the least of Dr. William Osler's great services to American medicine during his stay in this country was that of pointing out anew to us the value and undiminished utility of such books. In this age of rushing progress we are far too apt to overlook the work of those who have gone before us, forgetting that, though our predecessors had not at their command the full array of facts with which we of the present day are favored, their discernment and their critical power were such as most of us might envy.

Coming to his subject proper, Dr. Dock gave a masterly survey, though in general terms of course, of malarial diseases, amœbic dysentery, yellow fever, uncinariasis, Malta fever, dengue, spirillar fever, the Oriental plague, and pellagra. He properly pointed out that a disease might correctly be termed tropical even if its ravages were not confined to the tropics; it was only necessary, he said, that it should flourish in those regions preponderatingly. Not all of the diseases mentioned have ever prevailed in the United States to a serious extent, and we are not aware that Malta fever has been recognized here at-all, though Dr. Dock thinks that the conditions are favorable for its development in the Mississippi Valley. Others, such as uncinariasis, pellagra, and amœbic dysentery, however, must have flourished long before they were recognized. This is especially true of uncinariasis, for our present knowledge of which, especially as regards its ætiology, we are deeply indebted to a zoologist, Professor Stiles. Fortunately the disease is easily curable, and we may hope to see it virtually eradicated, especially as Dr. Dock tells us that Professor Stiles himself has entered anew upon a survey of the conditions which favor its diffusion. It has been a veritable menace to the welfare of our people in the southern States and a still greater source of peril in one of our new possessions, Puerto Rico.

Dr. Dock earnestly recommends the systematic study of tropical diseases as one of the features of our college curricula, and it certainly seems that the medical schools of the country must give particular attention to the new branch, as is now done in the medical schools of the army and navy. Of course it is true that tropical medicine is not wholly a new thing, but it is only within the last few years—since the war with Spain, we might say—that it has taken any pronounced hold of professional attention in the United States. If we are late to enter the field, let us at least put forth our best endeavors to make up for lost time.

A SUPPOSED PROTECTIVE INFLUENCE OF BOVINE TUBERCULOUS INFECTION.

In a paper read at the recent International Congress on Tuberculosis, an abstract of which will be found in the installment which we publish this week of the proceedings of the sections, Dr. Nathan Raw, of Liverpool, brought forward an idea that may yet be turned to advantage in the struggle against pulmonary consumption, provided further observation

shows it to be substantially founded. Dr. Raw's hypothesis is that infection with the bovine variety of the tubercle bacillus is generally productive of one of the "surgical" forms of tuberculous disease, and rarely if ever of the pulmonary form, also that the bovine infection has a tendency to confer immunity against the attacks of the human variety of the bacillus.

Lupus and the so called scrofulous glands of our older literature are among the diseases which Dr. Raw attributes to the bovine bacillus. Tuberculous glands might be tolerated if we were to become convinced of their playing such a part as that with which he credits them, but lupus is serious enough in itself to make it an unwelcome ally in the prevention of consumption, and the other affections imputed by the author to bovine infection are still more to be dreaded. If it comes to be established that these forms of tuberculous disease are really indicative of an infection which is antagonistic to the action of the human bacillus, it will be important to learn, further, whether it is their existence per se that is operative, or whether the general infected condition, of which they are only manifestations, is what we may depend upon. Upon this further knowledge would hinge the question of whether or not it was judicious to undertake the cure of tuberculous glandular disease.

Of course, what we have alluded to was not Dr. Raw's main contention, but rather the proposition that many forms of tuberculous disease were due to infection with the bovine variety of the tubercle bacillus. All of them are serious, and we may well join the author in calling for the observance of every possible precaution to prevent infection from cattle. The vexed questions of the relations between tuberculous disease in the human and in the bovine subject has been endowed with a new aspect by Dr. Raw, one that, we may suppose, will stimulate further research.

THE MORTALITY FROM TUBERCULOUS DISEASE IN THE UNITED STATES.

Among the data prepared for the use of the recent International Congress on Tuberculosis was an exceedingly instructive pamphlet, prepared by Dr. Cressy L. Wilbur, chief statistician for vital statistics of the Burcau of the Census, entitled *Tuberculosis in the United States*. Dr. Wilbur, who is a very careful writer, takes up many aspects of the subject. Not the least important of them is one which he deals with under the heading of Understatement of Tuberculosis in Returns of Deaths. He remarks that there is a large margin of possible error and probably of understatement in the recorded

deaths from tuberculous disease even in the registration area, and he asks how many deaths from pulmonary tuberculous disease have been reported as due to "heart failure," "congestion of lungs," "debility," "inanition," "marasmus," and the like.

He states that many deaths ascribed to "chronic bronchitis" and "bronchopneumonia" are really due to tuberculous infection. He cites Osler as maintaining that a majority of the cases of acute serofibrinous pleurisy are tuberculous, and adds that many of the deaths certified to as due to "hæmorrhage," practically all of those accounted for by "hæmorrhage of the lungs," are deaths of tuberculous persons, and that deaths from pulmonary tuberculous disease are concealed by the use of such terms as "lung trouble," "heart disease," etc. He says that, according to Dr. J. W. Irwin, physician to the Henry Phipps Institute, of Philadelphia, deaths attributed to abscess of the chest, hip, or lungs; iliac, lumbar, pleural, or psoas abscess; asthma; congestion of the brain, chest, or lungs; debility; disease of the brain, chest, hip, or lungs; dropsy of the brain, chest, or lungs; empyema; brain fever; inflammation of the brain, hip, or larynx; marasmus; tabes mesenterica. etc., are probably due to tuberculous disease. Among the deaths that the same writer thinks may possibly be owing to tuberculous disease are those imputed to cachexia; cerebrospinal meningitis; cholera infantum; convulsions; cyanosis; diarrhœa; diseases of the spine; typhoid fever (a certain proportion); inflammation of the bronchi, chest, lungs, peritonæum, pleura, spine, stomach, or bowels; influenza; teething; and whooping cough. Dr. Irwin's statements had reference only to the causes of death registered in Philadelphia.

Many of the misleading certificates argue ignorance almost inconceivable on the part of registered physicians, and a few are probably due to the difficulty of making a diagnosis in certain forms of tuberculous disease, but Dr. Wilbur suspects that there may in some instances be an element of intentional deception. The following reasons for the deception are suggested: The physician may have neglected to fulfil a legal requirement to report the illness as tuberculous in its nature, and in that case he would show himself to have violated the law if he reported the death correctly; the record of a death from tuberculous disease might conflict with representations contained in applications for life insurance made by persons closely related to the deceased; or the report of the true nature of the trouble may simply be "thought undesirable" by the

But, taking the returns as they stand, with all their defects, we still have to count tuberculous infection as giving rise to 11.2 per cent. of the entire mortality, a proportion greater than that caused by any other disease. This is graphically shown by a frontispiece which represents the following proportions: All forms of tuberculous disease, 11.2; all forms of pneumonia, 9.8; heart disease, 8.6; violence, 7.6; diarrhœa and enteritis, 7.1; nephritis and Bright's disease, 6.4; apoplexy, 4.6; cancer, 4.4; congenital debility, 2.2; premature birth, 2.2; ill defined causes, 2.1; old age, 2; bronchitis, 1.9; typhoid fever, 1.8; meningitis, 1.6; diphtheria and croup, 1.5; paralysis, 1.2; cirrhosis of the liver, 1; convulsions, 1; whooping cough, 0.7; and all other causes, 21.

THE CELL FORMULA OF THE LYMPH.

It is the general opinion among hæmatologists that the lymphocytes are furnished to the peripheral blood from the lymph nodes, through the lymphatic vessels, and that the other varieties of the leucocytes have their origin in the red bone marow, and reach the blood stream directly through the efferent veins from the marrow. There is much difference of opinion in regard to the origin of the large uninuclear leucocyte, some observers believing that it originates in the lymph nodes, others that it is produced in the bone marrow, and still others that it is the product of both tissues. There is the theory, furthermore, that these cells result from the desquamation of the endothelial cells lining the bloodvessels. The composition of the lymph is very indefinitely understood, and a contribution to our knowledge of its morphology by Dr. F. Peyton Rous (Journal of Experimental Medicine, July) is welcome. By making smears of the lymph in the usual way, and employing one of the tinctorial methods in general use in hæmatology, the author has been able to represent very definitely the character of the cells found in that fluid as it flows from the mouth of the thoracic duct in dogs. Lymphocytes form 87.6 per cent. of the cells found in the lymph taken as above indicated. The large uninuclear cells constitute an average of 5.2 per cent., and the eosinophile cells form 2.6 per cent. of the cellular elements. Mast cells were not seen; polymorphonuclear neutrophile cells were found only when the lymph was mixed with blood, and typical transitional elements were rare.

The eosinophile cells in the lymph were found to vary very much in number. In one instance they formed twelve per cent, of the total number of white cells. When food was withheld from the animal they became fewer, while on a mixed diet in which meat preponderated they increased in number. They did not seem to be influenced by the presence of intestinal parasites, of which a careful record was kept.

The number of transitional leucocytes found in the lymph and the number found in the circulating blood of the dog do not coincide at all; the cells are very rare in the lymph, but abundant in the blood. For example, in one of the animals there were no transitional cells in the lymph in 550 cells counted, while there were twenty-five in the blood in 311 cells counted, 8.03 per cent. Numerous observations of this kind would tend to show that the transitional leucocytes are not furnished to the peripheral blood through the thoracic duct. The comparison of the number of large uninuclear leucocytes in the lymph and in the peripheral blood gives similar but not such striking results. The relation of large uninuclears to the lymphocytes in the lymph was one to seventeen; in the peripheral blood, one to 4.4. The author is of the opinion, however, that this fact does not necessarily mean that the large uninuclear form is derived from other lymph elements in the blood or that it has its source outside the lymph. His reasons for this opinion are that the lymph does add a considerable number of large uninuclear cells to the blood; that these cells may persist in the blood longer than the lymphocytes, and so accumulate; and that there are certain technical difficulties in diagnosticating between the large and the small uninuclear elements.

PLAGUE IN THE UNITED STATES.

Under the heading "Danger!" Collier's Weekly for October 10th has a leading editorial on the plague situation in California, the gist of which is that the ground squirrels in the country about the region of San Francisco Bay have been found to be infected with plague, and that the business interests in Oakland are trying to conceal the truth, at the same time that they refuse to appropriate money for a suitable antiplague campaign.

The facts about plague in California are these: There was an epidemic in San Francisco in 1806, which was denied by the business interests of that city for the sake of the prevention of possible pecuniary loss. This epidemic and the attendant friction between the city, State, and federal authorities resulted in the resignation of an efficient officer, Dr. J. J. Kinyoun, from the United States Public Health and Marine Hospital Service, in the loss of many lives, and in the propagation of an epizootic among the rats in San Francisco. This epizootic, in turn, led to an insignificant epidemic among the inhabitants, which was confined practically to one quarter of the city. On May 23, 1907. a case of bubonic plague was discovered in the person of a sailor on a coastwise tug, and since that time there have been 159 cases of plague in San 800

Francisco, with seventy-seven deaths, besides fatal cases in Oakland, Cal., Seattle, Wash., and other California cities and towns. In 1907 Rucker (Journal of the American Medical Association, February 23d) maintained that Currie had found wild ground squirrels infected with plague. This observation has now been confirmed by Blue, by McCoy, and by Wherry (Public Health Reports. September 11th).

Through the excellent work of Dr. Blue and his associates there has been no case of human plague in San Francisco since January 30th. A plague rat is trapped at infrequent intervals, however. In other parts of the Pacific coast human plague and rat plague are still present. There was a case of human plague in Los Angeles on August 11th. A plague rat was trapped in Seattle on September 26th (Public Health Reports, October 9th).

In view of these facts we would remind the citizens of California of two old proverbs: "Honesty is the best policy" and "A stitch in time saves nine."

Rems Items.

The Tri-State Medical Association of Arkansas, Lou-

isiana, and Texas will meet in annual session in Texarkana, Ark., on November 11th.

The Southern Medical Association.—The second annual meeting of this association will be held in Atlanta, Ga., on Tuesday, Wednesday, and Thursday, November Ga., on Tuesday, Toth, 11th, and 12th.

Reception to Dr. John B. Murphy.—The Medical Club of Philadelphia gave a reception at the Bellevue-Stratford on the evening of October 16th, in honor of Dr. John

Murphy, of Chicago

The Boston Society of Examining Physicians.-The

The Boston Society of Examining Physicians.—The winter season of this society was opened on the evening of October 21st by a dinner at the Boston City Club. Dr. Francis Donoghue presided. Addresses were made by Dr. Morton Prince and Dr. Richard C. Cabot.

The Harvey Society Lectures.—The first lecture in the course of 1908-1909 will be delivered on Saturday, October 24th, at 8:30 p. m., at the New York Academy of Medicine, by Professor A. Calmette, of the Institut Pasteur de Lille, France, on Intestinal Infection and Immunity in Tuberculosis

Buffalo Academy of Medicine.—A special meeting of the academy will be held on Tuesday evening, October 27th, under the auspices of the Section in Obstetrics and Gynecology. The topic selected for discussion is ectopic pregnancy, and the paper of the evening will be read by Dr. Herman E. Hayd.

A Gift to the Presbyterian Hospital, New York .-A Gift to the Presbyterian Hospital, New York.—
Mr. John S. Kennedy, the New York banker and philanthropist, celebrated his golden wedding anniversary on
October 14th by making a gift of \$1.000.000 to the Presbyterian Hospital. The money will probably be used to
build a new administration building.
Scientific Society Meetings in Philadelphia for the
Week Ending October 31, 1908:

Mor 10.10 October 31, 1908:

Mos Section, Academy of Natural Sciences.
TURSDAY, October 27th.—Medicolegal Society.
Will all Physics County Medical

The Holyoke, Mass., Medical Society.—At a recent meeting of this society the following officers were elected to serve for the ensuing year: President, Dr. G. L. Gabler; vice president, Dr. T. E. Cavanaugh; secretary and treasurer, Dr. I. H. Farr; executive committee, Dr. G. L. Taylor, Dr. G. H. Cox. and Dr. J. J. Carroll.

An Emergency Hospital in the Waldorf-Astoria.-It is reported that an emergency hospital, the first of its kind in New York, has been opened in the Waldorf-Astoria. It is in a basement room and is well equipped with all necessary appliances. Dr. Calvin Thayer Adams and Dr. Robert Adams, house physicians of the hotel, are in

Contagious Diseases in Chicago.—During the week ending October 10, 1908, the following cases of contagious diseases were reported to the Department of Health: Diphtheria, 121 cases; scarlet fever, 94 cases; measles, 12 cases; chickenpox, 2 cases; pneumonia, 15 cases; typhoid fever, 61 cases; whooping cough, 11 cases; tuberculosis, 15 cases; diseases of minor importance, 4 cases; total, 335 cases.

diseases of minor importance, 4 cases; total, 335 cases.

Richmond, Va., Academy of Medicine and Surgery.—

A regular meeting of this academy was held on the evening of October 13th. Dr. W. L. Peple read a paper on the Diagnosis and Treatment of Tuberculosis of the Testicle, which was discussed by Dr. R. C. Bevan. Dr. Lewis C. Bosher read a paper entitled Diagnosis and Treatment of Suppurative Bone Disease, and the discussion on this paper was opened by Dr. William P. Mathews.

Examination for Internes at the City Hospital .- An examination will be held at the City Hospital, Blackwell's Island, New York, on Saturday, November 7th, at 130 p. m., of candidates for positions on the house staff of the hospital. Candidates are requested to submit their credenitals and to apply for further information regarding the examination to Dr. Joseph Collins, chairman of the Examination Committee, 37 West Fifty-fourth Street, New York.

The Mississippi Valley Medical Association.—At the

The Mississippi Valley Medical Association.—At the annual meeting of this association, which was held recently in Louisville, Ky., the following officers were elected: President, Dr. J. A. Witherspoon, of Nashville; first vice president, Dr. Louis Frank, of Louisville; second vice president, Dr. A. E. Sterne, of Indianapolis; secretary, Dr. Henry E. Tuley, of Louisville; treasurer, Dr. S. C. Stanton, of Chicago. St. Louis was chosen as the next place of tractions. meeting

Dr. Spratling Honored .- To commemorate the labors of Dr. William P. Spratling, who directed the work of the Craig Colony for Epileptics, Sonyea, N. Y. for fourteen years, the board of managers of that institution recently years, the board of managers of that institution recently passed a resolution naming the executive building Spratling Hall. Dr. Spratling recently resigned his position as medical superintendent of the institution to accept the chair of nervous diseases and physiology at the College of Physicians and Surgeons, Baltimore.

The New Corps of Women Nurses in the Navy.—

The recent examination of candidates for appointment in the naval hospitals resulted in the selection of sixteen women nurses, who have been ordered to report for duty at the Naval Medical Hospital, Washington, D. C., where for the next six months they will be under instruction as to the special duties required of them as naval nurses. At the end of this time they will be assigned to the naval hospitals at Yokohama, Canacao, and San Juan, Puerto Rico,

Army Commissions for Philadelphia Physicians.—

Army Commissions for Philadelphia Physicians.—Announcement has been made that a number of prominent physicians and surgeons of Philadelphia have been appointed first lieutenants of the Medical Reserve Corps of the United States Army. The commissions do not carry a salary with them, but they hold the recipient available for service in case of war. Among those who have received commissions are Dr. John B. Deaver, Dr. Francis D. Patterson, Dr. J. Chalmers Da Costa, Dr. Edward Martin, Dr. John G. Clark, Dr. Hobart Amory Hare, Dr. G. E. de Schweinitz, Dr. J. William White, and Dr. Charles B. Penrose

Penrose
The Mortality of Chicago.—During the week ending
October 10, 1908, there were reported to the Department
of Health of the City of Chicago 503 deaths from all causes, as compared with 518 for the previous week, and 498 for the corresponding period in 1907. The annual death 498 for the corresponding period in 1907. The annual death rate, in an estimated population of 2,166.055, was 12.10 in 1,000 of population. Of the total number of deaths 171 were of children under five years of age. The principal causes of death were: Apoplexy, 12 deaths; Bright's disease, 46 deaths; bronchitis, 11 deaths; consumption, 53 deaths; cancer, 29 deaths; diphtheria, 11 deaths; heart diseases, 39 deaths; intestinal diseases, acute, 116 deaths; nervous diseases, 15 deaths; pneumonia, 34 deaths; searlet fever, 5 deaths; suicide, 8 deaths; typhoid fever, 3 deaths; violence (other than suicide), 32 deaths; whooping cough, a deaths; all other causes, 87 deaths.

The Elmira, N. Y., Academy of Medicine.-A special meeting of the academy was held on the evening of Wednesday, October 21st, to celebrate the opening of the new rooms in the Federation Building, corner of Church and State streets. The programme included the following and State streets. The programme included the following papers: Clinical Manifestations of Uræmia, by Dr. Henry C. Bushwell, of Buffalo; The Nervous Child, by Dr. Henry L. K. Shaw, of Albany; Psychotherapy, by Dr. Edward B. Angell, of Rochester. The present officers of the academy are: President, Dr. R. G. Loop; vice president, Dr. A. J. Westlake; treasurer, Dr. C. G. R. Jennings; secretary, Dr. F. L. Christian.

Society Meetings for the Coming Week:

Monday, October 26th.—Medical Society of the County of New York (annual).

Tuesday, October 27th.—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetries and Gynæcology).
Wednesday, October 28th.—New York Academy of Medi-

cine (Section in Laryngology and Rhinology); New

York Surgical Society.

York Surgical Society.

Thursday, October 20th.—Brooklyn Society of Neurology.

Changes of Address.—Dr. William P. Spratling, formerly medical superintendent of the Craig Colony for Epileptics, Sonyea, N. Y., to 1110 North Charles Street, Baltimore Med. leptics, Sonyea, N. Y., to 1110 North Charles Street, Lindon, Dr. W. E. Hays. to 500 West One Hundred and Forty-fourth Street, New York.
Dr. Arthur B. Duel and Dr. John Randolph Page, to 27 East Fifty-seventh Street, New York.
Dr. S. Mason McCollin, to 1725 Arch Street, Philadel-

Dr. William P. Grady, to 1214 North Seventh Street,

The Tri-Professional Medical Society of New York held its nineteenth stated meeting on Tuesday evening, October 20th. Interesting cases and specimens were presented by Dr. Walter T. Dannreuther, Dr. Augustin H. Goelet, and Dr. B. S. Talmey. Dr. George M. MacKeerad a paper entitled Fulguration—A Special Method of Academic that Utils Tectures of Social Method of Section 1988. Applying the High Frequency Spark in the Treatment of Certain Diseases. Dr. I. L. Hill read a paper on Version, and reported fifty cases. Among those who participated in the discussion were Dr. William H. King, Dr. William H. Dr. William H. Dr. William H. King, Dr. William H. Dieffenbach, Dr. Augustin H. Goelet, Dr. Ross Mc-

Pherson, and Dr. Edward S. Gushee.

Personal.—Dr. William Seaman Bainbridge, of New York, returned from Europe on October 23d. Dr. Bainbridge attended the Second International Surgical Con-

gress, which met in Brussels in September.

Dr. Roswell Park, of Buffalo, returned recently from an extensive European trip. He attended the Second International Surgical Congress in Brussels, of which he is

the American representative on the executive committee.

Dr. Henry Asbury Christian, Hersey professor of the theory and practice of medicine at Harvard Medical School, and physician in charge of Carney Hospital, Boston, has been elected dean of the medical faculty. Dr. Christian is collected that the control of the medical faculty.

is only thirty-two years of age

American Hospital Association .- At the annual meeting of this association, which was held recently in Toronto, the following officers were elected to serve for the ensuing the following officers were elected to serve for the ensuing year: President, Dr. John M. Peters, of Providence, R. I.; first vice-president, Dr. Arthur B. Aucker, of St. Paul, Minn.; second vice-president, Dr. J. N. E. Brown, of the Toronto General Hospital; third vice-president, Miss Emma A. Anderson, of the New England Baptist College, Boston; secretary, Dr. W. L. Babcock, of Grace Hospital, Detroit, reelected; treasurer, Dr. Asa Bacon, of the Presbyterian Hospital, Chicago, reelected. Dr. Donald J. M. Schirteche superirendent of the Western Informary Glass Mackintosh, superintendent of the Western Infirmary, Glasgow, was elected an honorary member of the association.

The Philadelphia Academy of Surgery.-The following programme was presented at a meeting of this academy which was held on Monday evening, October 5th: Dr. William L. Rodman: (a) Exhibition of a case of americ dysentery cured by appendicostomy, (b) report of a case of secondary hæmorrhage from the popliteal artery, (c) exhibition of a specimen of a large exophthalmic goître; Dr. Charles F. Nassau: Report of three cases of gunshot wound of the abdomen, with the exhibition of patients; Dr. John H. Jopson: Report of three cases of gunshot wound of the abdomen; Dr. George G. Ross: Paper entitled Some Experiences in Removing the Vermiform Appendix in

Cases that had been operated upon; Dr. Edward Martin: Report of a case of shock and bleeding treated by the intravenous injection of twelve pints of normal salt solution; Dr. Charles H. Frazier; The exhibition of a new operating

The East Side Physicians Association.—The October meeting of this organization was held on Thursday evening, October 15th. Dr. George Friedmann presented a patient with bronze diabetes. A case for diagnosis was presented by Dr. Max Ghertler, and Dr. William S. Gottheil presented a patient with lepra tuberosa. Dr. S. Solis-Cohen, of Philadelphia, read a paper entitled Some of the Principles Governing the Use of Drugs in the Treatment of the Sick. Dr. Henry Illoway read a paper Treatment of the Sick. Dr. Henry Howay tead a page-on Muscular Rheumatism, which was followed by a gen-eral discussion. The officers of the association are: Presi-dent, Dr. Henry Illoway; first vice president, Dr. Morris Cisin; second vice president, Dr. George Dow Scott; sec-retary, Dr. Sigmund Epstein; treasurer, Dr. I. Seth Hirsch.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statement of new cases and deaths reported for the two weeks ending October

| -1, -, | | t 10 | ()(| t. 17- |
|---------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmonalis | 597 | 1.50 | 180 | 138 |
| Diphtheria | | 1 6 | 311 | 1.0 |
| Measles | 6.8 | | 110 | 2 |
| Scarlet fever | 1.40 | 4 | . 13 | 5 |
| Smallpox | | | 1 | |
| Varicella | 10 | | 30 | |
| Typhoid fever | | 1.2 | 105 | 2.3 |
| Whooping cough | | 5 | 22 | |
| Cerebrost inal meningitis | 3 | | 1 | 7 |
| | | | | |
| Totals | 1.25 | 1.30 | 1 187 | 190 |

Charitable Bequests.—By the will of Grace M. Kuhn, Harvard University receives \$175,000 to endow a department of biological chemistry, in memory of a son, Hartman Kuhn, who died several years ago. The Massachusetts General Hospital receives \$10,000 for the clinical

By the will of Mrs. Martha W. Collard, who died in Europe last spring, the New York Home for Aged People, the New York Society for the Ruptured and Crippled, the Newport, R. I., Hospital, and the Presbyterian Hospital, New York, will each receive 100 shares of capital stock of the Standard Oil Company, in each case to be called the Fiske Fund

The Orphan Asylum Fund of Paterson, N. J., has been increased by a contribution of \$5,000 from Mrs. Jennie T.

The Medical Society of the County of New York. The Medical Society of the County of New York.—
Astaed meeting of this society will be held in Hosack Halt
of the New York Academy of Medicine on Monday evening, October 26th. The programme will consist of a "sympositum" on opsonic therapy. Papers will be read as follows: Opsonins, Opsonic Index, and Immunity, by Dr.
Eugene L. Opie, of the Rockefeller Institute for Medical
Research: The Treatment of Erysipelas by Bacterial Vaccines, by Dr. George W. Ross, of Toronto; The Therapeutic Value of the Onsonic Index in Pulmanary Tubergucines, by Dr. George W. Ross, of Toronto; The Thérapeutic Value of the Opsonic Index in Pulmonary Tuberculosis, by Dr. Gerald Bertram Webb, of Colorado Springs; The Production and Estimation of Phagocytic Immunity, by Dr. J. C. Meakins, of New York; The Use of Vaccines in Gonococcus and Streptococcus Infections, by Dr. Nathaniel Bowditch Potter, of New York. Among those who will take part in the discussion are Dr. William H. Park, Dr. Norman E. Ditman, and Dr. C. G. Coakley. r. Norman E. Ditman, and Dr. C. G. Coakley. Vital Statistics of New York.—During the week end-

ing October 10, 1968, there were reported to the Department of Health of the City of New York 1,223 deaths from all causes, of which 601 were in Manhattan, 103 in The Bronx, 416 in Brooklyn, 75 in Queens, and 28 in Rich The Bronx, 416 in Brooklyn, 75 in Queens, and 28 in Richmond. The annual death rate in 1,000 of population was 14.43 for the whole city, 13.67 for Manhattan, 16.40 for The Bronx, 14.54 for Brooklyn, 16.82 for Queens, and 19.05 for Richmond. During the corresponding period in 1907 the total deaths numbered 1,344, with an annual death rate of 16.36 in 1,000 of population. Of the total number of deaths 402 were of children under five years of age, and of these 163 were due to diarrhead diseases. There were of these 163 were due to diarrhœal diseases. 84 violent deaths, of which 65 were from accidents, 5 from homicide, and 14 from suicide. One hundred and thirty-seven still births were reported. There were 2,150 births and 772 marriages reported during the week.

The Fifth District Branch of the Medical Society of the State of New York, which comprises the members of the medical societies of the counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, and Jefferson, held its second annual meeting in Utica, N. Y., on October 15th. Officers to serve for the ensuing year were elected as follows: President, Dr. G. D. Gregor, of Watertown; first vice president, Dr. F. E. Fox, of Fulton; secretary, Dr. W. D. Garlock, of Little Falls; treasurer, Dr. F. E. Jones, of Beaver Falls. Watertown was selected as the next place of meeting.

Medical Inspection of Schools in Chicago.-During the week ending September 26, 1908, the total number of school children examined by the school medical inspectors was 21,429, and of these 536 were excluded on account of contagious diseases. Physical examinations were made by the inspectors of 4,195 school children, and of these 3,381 were found defective and 1,919 advised to seek treatment. Defects were found distributed as follows: Nutrition, 97; anæmia, 95; enlarged glands, 43; nervous diseases, 7; cardiac diseases, 35; pulmonary diseases, 21; skin diseases. 27; orthopædic, 27; vision, 649; hearing, 100; nasal breathing, 134; palate, 24; teeth, 1,215; hypertrophied tonsils, 750;

adenoids, 129; mentality, 35.

Vital Statistics of New Jersey.—The total number of deaths reported to the Bureau of Vital Statistics of the State of New Jersey for the month ending September 15. 1908, was 3,464. The principal causes of death were: Typhoid fever, 45 deaths; measles, 9 deaths; scarlet fever, 7 deaths; whooping cough, 38 deaths; diphtheria 23 deaths; malarial fever, 3 deaths; pulmenary tuberculosis, 272 deaths; other forms of tuberculosis, 59 deaths; cancer, 134 deaths; cerebrospinal meningitis, 26 deaths; diseases of the nervous system, 385 deaths; diseases of the circulatory system, 315 deaths; diseases of the respiratory system (pneumonia and tuberculosis excepted), 112 deaths; pneumonia, 103 deaths; infantile diarrhœa, 699 deaths; diseases of digestive system, (infantile diarrhœa excepted), 278; Bright's disease, 183 deaths; suicide, 35 deaths; all other causes, 738 deaths.

The Medical Department of the Temple University, of Philadelphia, began its annual course of instruction on Thursday, October 1st. Dr. Matthew C. O'Brien has been appointed first assistant demonstrator of anatomy; Dr. Paul G. Weston has been appointed demonstrator of pathology and bacteriology; Dr. E. D. Reed has been appointed lecturer in practical pharmacology; Dr. Howard Reed has been appointed lecturer in orthopædic surgery; Dr. William D. Lithgow has been appointed instructor in materia medica; Dr. Daniel J. Donnelly has been appointed instructor in materia medica; Dr. Daniel J. Kennedy has been appointed instructor in physiology; Dr. Samuel Gerhard has been appointed instructor in symptomatology and physical diagnosis: Dr. Charles S. Barnes has been appointed demonstrator of obstetrics; and Dr. Milton E. Percival has been appointed instructor in surgery. The class in the depart-

Announcement of Prizes Awarded to the 1908 Graduates of the Medical Department of the University of Pennsylvania.—The alumni medal, which is given to the number of the graduating class who attains the high est general average in examination, was awarded to James Harold Austin. The Spencer Morris prize, consisting of the annual income derived from the investment of \$10,000, awarded each year to the member of the graduating class who passes the best examination for the degree of Doctor of Medicine, was awarded to Oliver Hazard Perry Pepper. The prize of an obstetrical forceps, which is given by the professor of obstetrics to the student furnishing the best report of a case of obstetrics occurring in the Maternity Hospital of the university, was awarded to Leo Fabian Bradley. The prize of an antiscptic minor operating case, offered by the clinical professor of orthopædic surgery for the best practical work in orthopædic surgery, for the best report of his clinic, or for an acceptable design in apparatus, was awarded to Gordon Joel Saxon, with honorable mention of Morris Cornfield. The Frederick A. Packard mention of Morris Cornierd. The Freuerics As Lackaus prize of \$100 given to the graduate who has proved himself to be the most proficient in the course of clinical medicine, was awarded to John Albert Kolmer. The surgicular prior of \$75 countried for the best essent prior of \$75 countried for the prior of \$75 countried for the prior of \$75 countried for the prior of \$75 countried for \$75 countrie based upon the results of original investigation in surgical anatomy, surgical pathology, or surgical physiology, was

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The eighth annual meeting of this association will be held in Indianapolis, Ind., on Tuesday and Wednesday, November 10th and 11th. The meeting will be called to order on Tuesday at 10 a. m. by the president of the association, Dr. Henry M. Weeke and editors of the association, Dr. Henry M. Weeks, and addresses of welcome will be made by the Hon. J. Frank Hanley, Governor of the State, the Mayor of Indianapolis, the president of the Indiana State Medical Association, and others. The usual responses will be made and the annual address of the president will be delivered. The afternoon will be spent at the Central Indiana Hospital for the Insane, where Dr. A. E. Sterne will hold a clinic. Tuesday evening and Wednesday morning will be devoted to the presentation and discussion of papers. The officers of the association are: President, Dr. H. M. Weeks, of Skillman, N. J.; first vice president, Dr. W. F. Drewry, of Petersburg, Va.; second vice-president, Dr. T. C. Fitz-simmons, of Wilkesbarre, Pa.; secretary and treasurer, Dr. J. F. Munson, of Sonyea, N. Y.

The Health of the Canal Zone.-During the month of August there were 247 deaths in the Canal Zone, in a population of 123,391, corresponding to an annual death rate of 26.65 in 1,000 of population. There were 3 deaths from typhoid fever, 22 from æstivoautumnal malaria, 13 from clintophion fever, 2 from assistant analysis, 3 from hamoglo-binuric fever, 1 from whooping cough, 2 from diphtheria and croup, 2 from amebic dysentery, 7 from clinical dys-entery, 1 from beriberi, 2 from purulent infection and septicemia, 30 from tuberculosis of the lungs, 2 from other forms of tuberculosis, 3 from syphilis, 2 from cancer, 3 from chlorosis, 2 from acute rheumatism and chorea, from alcoholism, 6 from tetanus, 5 from bronchopneu-monia, 11 from lobar pneumonia, 5 from diarrhœa and en-teritis, under two years of age, 16 from chronic diarrhœa and enteritis, under two years of age, 2 from uncinariasis, I from puerperal septicemia. In the letter of transmittal accompanying the report Dr. Gorgas calls attention to the fact that during the past three years the death rate among the negro employees of the canal commission has dropped from 71.60 in 1,000 to 12.14 in 1,000. A comparison of total mortality for the past four years among the employees of the canal commission, both black and white, shows the following results: In 1905 the annual death rate in 1,000 of population was 35.93; in 1906, 62.12; in 1907, 27.59; and in 1908, 11.39. The showing in the general returns among the employees is equalled in all the special returns. The death rate of the Canal Zone is kept up to its high level by the deaths among the native population

An Ophthalmological Clinic for School Children.-An ophthalmological division in the Philadelphia Bureau of opntnalmological division in the Philadelphia Bureau of Health was established some months ago, with a central clinic in connection therewith, to which all school children were referred by the medical inspectors of schools. It is said that this clinic is the first of its kind in the United States. The establishment of this ophthalmological divisions of the contract of the contrac sion, with a separate clinic for school work, was the result of an examination in the summer of 1907 of a large number of school children, which showed that sixty per cent. had either eye strain or defective vision, 25 per cent. had cases being serious. The medical inspectors of schools in the course of their routine work have always given attention to eye defects, and in some cases have corrected these defects, referring other children to general clinics and dispensaries. In 1907 the cases of defective vision numbered 12,226, of which 3,179 were corrected and supplied with glasses. The new ophthalmological division was organized for active service on January 1, 1908, and is being largely increased. Dr. L. C. Wessels, chief of the division, has just submitted a report of the first three months' service, in which he states that during this time the total number of visits to the office was 1,267, and the total number of visits to the office was 1,207, and the total number of glasses prescribed free to children too poor to buy them was 345. Many of the children who were supplied with glasses had been classed as backward or supplied with glasses had been classed as backwards mentally deficient, when they could not see the blackboards nor the print in their books. The correction of these defects by the fitting of proper glasses was marked by a great improvement in both work and conduct. Many cases of inflammatory diseases were treated, among which were trachema and other contagious eve diseases, and these children were excluded from school until cured.

Dith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 15, 1908

I. The Principles Underlying the Treatment of Acute Intestinal Obstruction. A Study of One Hundred and Twenty-one Cases of Acute Intestinal Obstruction from the Massachusetts General Hospital Clinic, By CHARLES L. SCUDDER.

2. The Desirability of Instruction in Psychopathology in Our Medical Schools and Its Introduction at Tufts,

By Morton Prince.

1. Treatment of Acute Intestinal Obstruction. -Scudder has the following to sav about the treatment of acute intestinal obstruction: The important and startling clinical fact in cases of intestinal obstruction is the profound intoxication, the toxemia, the general sepsis. The cause of this toxemia is an acute infection from the damaged gut. These two fundamental conceptions must underlie and be the basis of every thought and every effort in the treatment of intestinal obstruction. The changes in the bowel are so rapid that, the diagnosis having been made, action should be immediate. Delay may mean death. If there is doubt about the diagnosis, and the patient has abdominal pain without involuntary muscle spasm, is distended without a rise of temperature, cathartics should not be given. If there is a beginning peritonitis it will be increased by the catharsis. If there is infection in any part of the abdomen the increased peristalsis occasioned by the cathartic will spread the infection to another part of the abdomen. More harm is caused by the common practice of administering cathartics in the case of abdominal pain in which the diagnosis is uncertain than in almost any other way. No massage should be given to the abdomen for fear of causing a perforation or of spreading the infection. The patient should be kept in bed and quiet. No food should be administered by mouth for fear of causing intestinal peristalsis and thus increasing the peritonitis. No water should be allowed to be swallowed. Very little water is absorbed directly from the stomach. The swallowing of water increases peristalsis. No morphine should be given until operation is decided upon or the diagnosis is made, for morphine will conceal symptoms. If there is vomiting the stomach should be washed out with Early diagnosis permits early opwarm water. The author then describes the operative relief. eration, as performed by him, and the postoperative treatment.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION October 17, 1908.

Gas Cysts of the Intestine, By J. M. T. Finney. The Inoculation Treatment of Gonococcus Vulvovaginitis in Children,

By Frank Spooner Churchill and Alex C. Soper. Vaccine and Serum Treatment of Gonorrhea in Female Children, By William J. Butler and J. P. Long. Hydrotherapy in Scarlatina, By D. S. Hanson.

Hydrotherapy in Scarlatina, Character of the Stools with Reference to the Intestinal

Findings in the Diarrhoad Affections of Infants,

By J. H. Mason Knox.

A New Sign for the Detection of Malingering and
Functional Paresis of the Lower Extremities,

By PHILIP ZENNER.

Perforative Appendicitis Come By PHILIP ZENNER.

Report of a Successful Case, By Edmund A. Babler.

Results of Ovarian Transplantation on Body Weight and Egg Weights in Fowls, By C. C. GUTHRIE. 9. Serum Treatment of Epidemic Cerebrospinal Meningitis, By Louis William Ladd. Io. Serum Treatment of Meningitis, By Frank J. Sladen.
 Ureterovesical Implantation. A New Method of Anastomosis. With Report of Cases, By R. L. Payne.

 Gas Cysts of the Intestine.—Finney reports such a case. He reviews the literature and remarks that, in general, the ideas as to the ætiology of this peculiar affection may be grouped under three headings: 1, That it is a new growth; 2, that it is of bacterial origin; 3, that the presence of the gas cysts is due entirely to mechanical causes. From his own case he thinks that the most rational explanation of the growth would seem to be that it is a definite entity, a distinct variety of tumor, the cells of which have the faculty of secreting gas. Of the pathology of the condition, one cannot speak very definitely, remarks the author. The histological findings, however, reported by different observers have presented a strikingly uniform picture. The main characteristics have been a more or less dense fibrous tissue framework, containing many round and spindle cells in various stages of development. In this fibrous tissue mass are to be seen clefts and spaces of varying sizes. These are not uniformly lined with endothelium, but here and there in their walls most observers have reported finding peculiar large giant cells containing many nuclei; as many as fifty to sixty have been reported. In and about these giant cells air spaces have been almost invariably found. Here and there also an apparently definite endothelial lining to the walls of the air cysts has been observed. These tumors, as a rule, are richly supplied with bloodvessels, and some observers have reported the presence of hæmorrhages into the tissue. This was quite pronounced in his case. Smooth muscle fibre and elastic tissue have also been reported as present in some cases. Analysis made of the air in the cysts shows it to resemble very closely atmospheric air. The tumor has been observed in all the layers of the intestinal walls. In the majority of instances, perhaps, it is more pronounced in the subserous tissue.

2, 3. Gonorrhæa in Children.—Churchill and Soper state that the inoculation treatment of vulvovaginitis apparently shortens the stay of patients in Whether or not it actually lessens the hospital. total duration of the disease, as compared with other methods of treatment, future investigations must determine. Old stains are more effective than fresh ones. It is desirable, though apparently not absolutely necessary, to take the index while pursuing the treatment. There is no correspondence between the index and the vaginal discharge,-Butler and Long think that in the treatment of gonorrhœa in female children, gonococcus vaccine is more effective than local applications, which in some instances will delay recovery. The vaccine treatment is not only effective, but in many cases, more particularly those of some standing, produces very rapid improvement, and often recovery. This does not, however, hold good in all chronic cases. nor in all acute cases, many of which require a prolonged course of inoculations. This latter point should be held in mind by those undertaking this The most effective dosage of vaccine varies for different cases and at different times for the same case. This will be best determined by the patient's opsonic index to gonococcus. They have found doses varying from 5 to 50 million very satisfactory. Where inoculations are practised without the index in the quantities mentioned, they should be given every fifth or sixth day. Doses up to a hundred million may be used without causing any general reaction on the part of the patient, except in rare cases. The larger doses do not seem to have been more effective on the immunity wave or clinical condition, than smaller doses. There seems to be no particular advantage in a vaccine made from several strains of gonococcus over that made from a single strain. Their experience with the serum treatment in gonorrhœa in female children does not warrant recommending it in such cases.

5. Character of the Stools in Diarrhœal Affections of Infants.-Knox says that mucus is evident to the naked eye in a large percentage of diarrhœal stools of infancy. Its absence renders the presence of serious intestinal lesion improbable. Mucus in large amounts may be found in the stools in all intestinal disorders, but the proportion of cases with extensive intestinal alteration is greater when the quantity of mucus is in considerable excess. The appearance of blood suggests an alteration of the intestinal mucosa in proportion to the amount of blood present. On the other hand, extensive changes may occur in the bowel wall without the macroscopic presence of blood in the discharges. In like manner the presence of pus indicates, according to its quantity, alteration in the mucosa, particularly in that of the large bowel. The failure, however, to detect pus in the stools with the naked eye does not preclude the possibility of extensive intestinal lesion. Blood and pus are more frequently found in the middle half of infancy, and these elements at this time form a correspondingly more reliable index of the conditions of intestinal mucosa, while blood and pus rarely appear before the beginning of the second week of their illness. They are more frequently found from the third to the sixth or eighth week, and are usually absent af-ter this period, when the illness, if it continues, may assume a marantic character. Blood and pus are often found mingled in the same stool. Less often blood appears alone, and still less frequently is pus noted in the dejecta of infants who have not passed blood. The presence of these elements indicates the probability of thickening and infiltration or of ulceration of the mucosa of the small, but more certainly of the large intestine.

7. Appendicular Inflammation Complicating Pregnancy.—Babler remarks that perforative appendicular inflammation is one of the gravest complications of pregnancy; it complicates pregnancy with greater frequency than the tabulated cases would indicate. Pregnancy does not seem to predispose to primary appendicular inflammation. may precipitate an attack in certain chronic cases, but the clinical manifestations do not differ from those of appendicular inflammation in the nonpregnant. Before a diagnosis is made, the medical attendant must bear in mind the possibility of ureteritis and pyclitis. The diagnosis is not, as a rule, difficult. Of 235 cases of appendicular inflammation complicating pregnancy and the puerperium, 103 of the 207 cases complicating pregnancy were

of the perforative variety. Of these perforative cases, eighty-nine patients were operated upon; thirty-three aborted before, and thirty-seven after operation; thirty-six mothers died. All of the fourteen patients who were not operated upon in perforative cases died; nine infants died. Of the 104 nonperforative cases, fifty patients were operated upon; seven aborted, and one mother died. Of the nonperforative, nonoperated cases, six patients aborted and four died. Of the twenty-eight cases occurring during the puerperium eighteen were perforative. Of these latter, twelve patients were op-erated upon; four died. Two of the five not operated upon recovered; the abscess ruptured into the rectum. All of the patients in the nonperforative cases recovered. The mortality of appendicular inflammation complicating pregnancy is the mortality of delay. Early, efficient surgical intervention is the secret of success in the treatment of this disease. It is far better to evacuate an appendicular abscess before emptying the uterus, since such a procedure would eliminate the possibility of flooding the free peritoneal cavity with pus. If general peritonitis is present at time of consultation, accouchement force, followed by abdominal section, is indicated in the cases near the end of gestation. Cases have been reported in which general peritonitis was present at the time of operation, and yet the patient went to term.

9, 10. Serum Treatment of Cerebrospinal Meningitis.-Ladd has no doubt as regards the wonderful efficacy of Dr. Flexner's serum in the treatment of epidemic cerebrospinal meningitis, provided it is used on patients not moribund or on those in whom chronic hydrocephalus has not already developed. He confidently believes that statistical reports excluding these cases will show that our percentage of recovery will contrast favorably with our previously high percentage of deaths.—Sladen thinks that all cases of meningitis in which meningococcus infection is suspected should undergo lumbar puncture and serum injection as early as possible. The serum does no harm in cases not of the meningococcal type. It may do good. The course of the disease is changed by the serum. The long drawn out chronic cases are not seen, and the terrible sequelæ-often worse than death-are rare. As to the character of the serum, the rapidity with which signs and symptoms disappear, suggests an antitoxic property; the positive chemotaxis for polymorphonuclear leucocytes, and the promoted phagocytosis are most definite and constant features; finally, the reduction in the number of diplococci, the change in their staining properties, and the loss of viability speak for a bactericidal power -although it is a question if this may not be explained by the phagocytosis.

MEDICAL RECORD.

October 17, 1908.

 The Diagnosis of Peptic Ulcer, By Dubley Roberts.
 The Rational Treatment of Splanchnoptosis: Displacement of Viscera, Both Abdominal and Thoracic, By J. Manison Taylor.

. The Personal Factor in Disease,
By Beverley Robinson,

Abscess of the Lung from Ascending Infection from Appendicitis, with Report of Cases, By J. N. Hall.

Gonorrhoal Septichæmia, with Marked Cardiac Involvement, By JOHN D. THOMAS.

Vessel Anastomosis by Means of Rubber Tubing,
By Wilbur Ward.

2. The Rational Treatment of Splanchnoptosis. - Taylor observes that the causes of splanchnoptosis, movable, displaced, prolapsed, wandering, or dislocated hollow organs, lie far back in the origins of growth and development. A neurasthenic tendency is the fountain source of all such Some of these may be characterized as hereditary and others as acquired, but they are often so interwoven by evolution as to be ætiologically indistinguishable. Clinically it is important to estimate how much is referable to accident or constitutional weaknesses from whatsoever source. A large part of those factors which are blamed for the initiation of the splanchnoptosis, such as digestive faults, intestinal putrefactions, functional derangements, errors during parturition, and the like, are usually, if not always, merely efficient or instrumental, not primary causes. It is obvious, then, that the clinician must direct his remedial measures to the correction of the primitive defects, local or constitutional. By this course alone is it possible to achieve satisfactory repair. To relegate these extremely prevalent, insidious, often most baffling but ultimately disabling disorders to the operating surgeon and be content with whatever perfection of mechanical replacement he can accomplish, is to fulfill but a small part of our intelligent duty. Whatever the sources of causation, and they are necessarily various, differing in degrees and directions of evolution, we have then to overcome cellular vitiation in several situations, among which are loss of nutritive vigor in the vasomotor subcentres in the cord, through which the affected parts are innervated and, consequently, impairment of nutrition in the internal structures which contribute to support; and relative weakness in the external abdominal muscles. There are also contributory sources of weakness to be corrected, such as loss of tone in the skeletal structures, vitiation of motor innervations, and in the whole cycle of the autoprotective powers, oxygenation, etc. the difficult problems in relieving the splanchnoptoses is to secure suitable support for the relaxed abdominal walls. At best all artificial devices are but temporary measures, secondary to the radical restoration of the power of the tissues to perform their own duty, and they should be modified or abandoned when possible. The author then speaks of Morris Longstreth's belt, which, in his experience, avoids most evils and supplies the right kind of help. So far as the correction of the splanchnoptosis is concerned we have to deal with depleted nutrition of the whole organism, but particularly in the parenchyma of the abdominal organs, along with pronounced impairment of functional activities, which act as secondary causes of distensions, dilatations, obstructions to local circulation, and these in many ways retroact also upon the supporting structures. Much of the disability is due to vascular stasis, waterlogging, the effects of retained toxines and toxic wastes on circulation and there-

by constricting bloodyessels unduly. The object to be attained is to activate the total circulation both directly and generally. While many of our reliable drugs accomplish this in part, alone they often fail, whereas it will become obvious to any one, even to the scoffer, that manual treatment can and does rapidly and efficaciously improve circulatory activity, hence nutrition.

4. Abscess of the Lung from Ascending Infection from Appendicular Inflammation.—Hall reports fourteen such cases. He thinks that abscess of the lung is not infrequent in neglected cases of appendicular inflammation, and that a cavity may remain for a long time after the abscess has emptied through a bronchus. The absence of the usual color of the pus of amœbic abscess of the liver, of the history of dysentery, and the presence often of a definite colon bacillus odor to the expectoration lead us to think of the appendicular origin of the trou-The attack of appendicular inflammation may have been unrecognized, but questioning will establish a plain history in many cases. The bowing of the patient with concavity toward the right is not at all pathognomonic of lung involvement, either appendicular or amœbic, since he has seen it occasionally when dense adhesions had formed about an opened appendicular abscess, and in other diseases of the right side of the abdomen. The position assumed reminds one of that in certain chronic cases of sciatica. The prognosis is grave in cases of pulmonary involvement. Operation should be carefully considered. The chances of recovery must be doubtful at best, and we may accomplish much more by striving to avoid the complication than by attempting its cure. Although in any case we may have hepatic and pulmonary complications, in most cases they result from disregard of the early indications for operative intervention.

Gonorrhœal Septichæmia. — Thomas remarks that the treatment of these cases, as of all cases of ulcerative endocarditis, is very unsatisfactory. In the majority we can only use palliative measures and keep up the strength of the patient. In those cases where there is a mixed infection of streptococcus, antistreptococcic serum may be used. This has been used in some cases of malignant endocarditis where streptococci were shown to be present in the blood stream during life, with a few cases of recovery. If, as is held by some, the cases are pure streptococcic infection, which infection has gained entrance through the lesion in the urethra caused by the gonorrhoeal inflammation, and the gonococci or their toxines are not active agents in the infected blood or system, then the use of antistreptococcic serum, if it is any good at all, would be indicated. There have been some patients with infections, both by streptococci and staphylococci, who have been exceedingly benefited by antistreptococcic and antistaphylococcic serum. Some patients have been reported cured.

BRITISH MEDICAL JOURNAL.

October 3, 1908.

Fifty Years of Medical Education, By A. MACALISTER On the Radical Abdominal Operation for Carcinoma of the Cervix ("Wertheim's"), with Notes of Eighteen Cases, of which Sixteen were too Advanced for Cases, of which Cases, of which Cases, Other Cases, Other

- Oxygen and Muscular Exercise as a Form of Treatment,
 By L. Hill.
- 4. A Case of Hereditary Brachydactyly, By P. W. Mathew.

(Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Surgery.

- 5. A Discussion on the Diagnosis and Treatment of Cancer of the Breast, Introduced by Sir W. W. Cheyne.
- The Treatment of Fractures by Mobilization and Massage, By J. LUCAS-CHAMPONNIÈRE.
 Something about Puncture of the Brain,
- 7. Something about Functure of the Brain,
 By H. Tillmanns.
- 8. The Technique of Tarsectomy for Talipes,
 By C. WILLENS.
- Section of the Posterior Primary Divisions of the Upper Cervical Nerves in Spasmodic Torticollis, By R. Kennedy.
- 10. A Simplified Method of Performing Prostatectomy by the Combined Routes, By J. L. THOMAS.
- II. Selection in the Method of Operating in Cancer of the Rectum, By D. Drew.
- 12. On Cholecystenterostomy in the Form of a "Y,"

 By A. Monprofit.
- Discussion on the Indications for Nephrotomy and Nephrectomy, Introduced by D. Newman.
 Gastrostomy, with Special Reference to Senn's Operation,
- tion, By W. Evans.

 15. The Indirect Treatment of Disease of the Epididymis
- and Testicle,

 By E. M. Corner.

 16. On Some Cases of Hæmaturia,

 By A. FULLERTON.
- 17. Painful Displacement of Ribs,18. The Technique of Cancer Operations, with Reference
- to the Danger of Cancer Infection, By C. RYALL.

 19. Surgical Statistics: A Plea for a Uniform Registration of Operation Results, By E. W. H. GROVES.
- 2. Wertheim's Operation for Cancer of the Cervix.—Berkeley and Bonney state that the aim of Wertheim's radical abdominal operation for carcinoma of the cervix is to remove the uterus and annexa, with the diseased cervix enclosed in the upper part of the vagina, across which clamp forceps have been applied so as to prevent the escape of detached cancer cells into the normal tissues which have been exposed during the operation, and to excise together with these parts as much of the parametric and paravaginal cellular tissue and as many of the pelvic lymph glands as may be feasible. The writers dwell upon certain points of the operation, and give a summary of eighteen cases in which it was performed. Of these, fifteen resulted in recovery. In the three fatal cases death was due to shock.
- 3. Oxygen and Exercise.—Hill, from observations made on athletes, on himself, and on horses, has come to the conclusion that oxygen inhalation followed by, or accompanying, exercise is a most active and effectual form of treatment. In one case the increase in work done under oxygen was one sixth. Its influence is very great on the untrained or fatigued man. It enables a man to increase very materially the metabolism of his body. It should be, therefore, of value in the treatment of people fat and scant of breath, and those who overeat and take too little exercise, and in cases of emphysema and heart disease treated by graduated exercise. Possibly it may find a use in tropical climates to make exercise easier, and in men exhausted by the day's mental work and worry and who want a spin

on their bicycles to make the blood circulate and the appetite good.

18. Cancer Infection during Operation.-Ryall holds that from a surgical point of view cancer is a spreading infective process, not unlike other infective processes; that the cancer cell within the body is possessed of independent existence; that it contains the elements of infection, and that it can give rise to fresh cancerous outbreak in any part of the body whither it is carried by the lymph or blood stream, just in the same way as wandering bacteria are capable of forming secondary infective foci. In the treatment of cancer we have an infective process to deal with, and the question of cancer infection must be seriously considered. Cancer infection is the implantation of cancer cells from cancerous growths into tissues unaffected with the disease, and the occurrence therefrom of a fresh cancerous outbreak. Contact infection is the outbreak of fresh cancerous growth in healthy tissues which have been in contact with infected tissues. It is most frequently seen in the peritonæum, but is also found in other parts, such as the pleura, vulva, lip, and bladder. Distant implantation is the development of cancerous growths in parts distant from the primary growth, as the result of cancer cells being conveyed and implanted there. This form is also most commonly met with in the peritonæum. Suture scar infection following operation for cancer is a very common occurrence. It is the result of cancer cells being implanted by an infected needle or suture. Infection of the entire suture track is most frequently met with in abdominal cancer. Nodular infection of the wound is also fairly common. Diffuse or brawny infection of the wound is the most distressing form of wound infection. It is due to widespread dissemination of cancer cells at the time of operation. It almost invariably appears early, and is characterized by brawny infiltration of the tissues around the field of operation. In dealing with a cancerous growth, in which an exploratory incision has been made, the safest plan is to suture the incision and wait until healing has taken place before carrying out its removal. Unfortunately immediate removal is usually necessary. In such case the exploratory incision should be securely closed after checking all hæmorrhage; all instruments, sponges, sutures, towels, lotions, and lotion bowls used up to this stage should either be discarded or resterilized. After closing the wound, the skin in the neighborhood of the exploratory incision should be carefully washed and sterilized, and the hands of the surgeon and his assistants should be rewashed and cleansed with the minutest detail. It is well to place a pad of gauze in the exploration wound before closing it; this checks the leaking of blood and serum. As long as cancer cells are pent up we are operating under the best conditions, and therefore the infected tissues should always be removed en masse. Roughness of manipulation is accountable for many cases of cancer infection; this is especially true of operations for the extirpation of cancerous glands of the nećk, and of vaginal hysterectomy. The curette often opens uninfected tissues and implants them with cancer cells; hence it should be sparingly used.

LANCET

October 3, 1908.

Recent Advances in Science and their Bearing on Medicine and Surgery (Huxley Lecture),

cine and Surgery (Huxley Lecture).

By Sir P. Manson.

The Treatment of Inoperable Cancer. By H. Morris.

On Pregnancy, Parturition, and the Puerperium after Ventrifixation (Hysteropexis Hypogastria),

By Sir W. J. Sinclair.

4. Cancer of the Colon: A Study of Seventy-two Cases,
By H. S. Clogg.

2. Inoperable Cancer.—Morris uses the term "cancer" in a general sense to include all forms of malignant new growths, embracing therefore rodent ulcer, sarcoma, lymphosarcoma, and endothelioma, as well as epithelioma and other varieties of carcias well as epithelioma and other varieties of carcinoma. The term "inoperable" means that the disease cannot be entirely eradicated, or permanent immunity hoped for, by a cutting operation, or by the actual cautery, or any escharotic aiding the knife. It does not imply that malignant disease is of constitutional as distinct from local origin and that as such it is ineradicable. On the contrary, cancer is at first, and so far as rodent ulcer is concerned throughout, a local disease. Even on this view there are four groups of inoperable cases, as follows: (1) Primary cancer affecting inaccessible parts and organs; (2) primary cancer which, though originating in an accessible part or organ of the body, has been allowed to extend beyond the limits within which an operation is prudent and complete removal possible; (3) certain cases of acute diffuse carcinoma and very rapidly growing or widely infiltrating new growths of exceptionally virulent character; and (4) recurrent cancer, where the disease has recurred in multiple metastatic foci or in parts beyond the limits of removal. The term "treatment" as applied to inoperable cancer means one of two things: (1) The employment of remedies and methods other than the knife to cure, ameliorate, or retard the disease, as well as to prevent relapses after its removal; or (2) the employment of the knife to give relief from pain, to prolong life, to restore function, and otherwise to make the patient's condition more tolerable. In cancer of the tongue the division of the lingual gustatory nerve gives the most signal relief from the pain, often otherwise intractable, which is referred to the side of the tongue, and indeed to the whole area of the distribution of the third division of the fifth nerve. Ligation of both lingual or both external carotid arteries causes a subsidence of cedema and salivation. Extraction of the teeth often gives great relief in these cases. It is sometimes not only justifiable but advisable to excise the greater part or even the whole of the tongue, even though the whole of the disease cannot thereby be removed. As regards cancer of the larynx, the writer personally is strongly opposed to the operation of total laryngectomy. When the patient refuses the operation, or when the disease and the general condition of the patient do not permit of its being undertaken, palliative means may give relief. Much improvement often follows tracheotomy when undertaken in good time. Whenever difficult respiration is threatened, tracheotomy should be done without delay, the trachea being always opened low down and as far from the growth as possible. Gastrostomy is probably performed too frequently in cancer of the œsophagus, and the use of a tube, short or long, should be resorted to more frequently. The results of the operation are unsatisfactory; in most cases, the improvement is of very brief duration. The very cases in which the stoppage of the efforts to swallow is most essential are the most unfavorable ones, as they invariably prove fatal soon after the operation from perforation into the air passages. In cancer of the stomach it is very doubtful if sufficient benefit is derived from gastrojejunostomy or other short circuiting operations to make it worth while undergoing them. For conditions other than cancer gastrojejunostomy is often of the highest value, but in cancer the prolongation of life is very limited, the ultimate sufferings are most severe, and the substitute functions are often unsatisfactory. The immediate mortality of the operation is probably not far short of forty-five per cent. Other complications which the operation does not prevent, if it does not assist in promoting, are the breaking down of the growth, hæmorrhages from the growth or from a recently formed jejunal ulcer, toxæmia, pulmonary infarcts, etc. The operation should not be proposed when cachexia and emaciation are very pronounced, when patients are seen very late, or when the growth does not cause stasis or obstruction of the pylorus. Somewhat more than seventyfour per cent. of patients with cancer of the rectum either see the surgeon too late or else have the disease in such a position that cure by operation is impossible. Colotomy, besides entirely obviating the risk of death from intestinal obstruction, affords relief from many of the usual symptoms of rectal cancer and retards the rate of increase of the growth. The prospects from colotomy are better when the operation is done before complete obstruction sets in. As substitute operations for colotomy when the disease is near the anus, linear proctotomy and erasion of the growth have sometimes proved to be temporarily beneficial. As regards cancers of the uterus, the percentage of inoperable cases has steadily lessened, Wertheim's method being largely responsible for this improvement. In certain cases of cancer of the breast, the breast should be removed for palliative purposes, even when there is widespread glandular infection. No operative treatment can relieve that terrible condition known as cancer en cuirasse. The writer has little of recommendation to say as regards the various treatments by thyreoid feeding, by injections of soap, by Doyen's vaccine or the different sera or killed cultures, by electric currents of high voltage and high frequency, or by the mixed toxines of the streptococcus of erysipelas and the bacillus prodigiosus (Coley's fluid). He discusses the trypsin treatment very fairly and thoroughly, and decides against it. The local atrophy and degeneration of a cancerous growth induced by subcutaneous injections of trypsin in the neighborhood of a tumor or into the tumor itself cannot be accepted as evidence of the successful treatment of cancer. Further, direct injection into the tumor or into its periphery always causes an extreme amount of physical suffering. Pancreatin applied locally does have a beneficial effect in removing all dead and septic tissue, and in obtaining a clean, nonseptic surface.

LA PRESSE MEDICALE.

September 5, 1908.

- Semeiology of the Persistent Vomiting of Pregnancy,
- By E. BONNAIRE. By R. ROMME. The Fats in the Diet of Diabetics,
- 1. Persistent Vomiting of Pregnancy.-Bonnaire discusses the physiology of the persistent vomiting of pregnancy, and points out that cases which are uncontrollable by any therapeutic method may be quickly arrested by an intercurrent disease or a nervous shock.
- 2. Fat in the Diet of Diabetics.-Romme quotes Maignon and Arloing, who found that their patients with diabetes responded to a fatty diet, and says that this form of treatment deserves investiga-

 The Hæmoglobinuric Malarial Fever of Teneriffe. Its Treatment with Voa-Fotsy, By FONTOYNONT. By Pierre Cruet. Articular Hæmophilia,

2. Articular Hæmophilia.—Cruet divides hæmophilic diseases of the joints into two classes, the spontaneous and those caused by a violent effort. The spontaneous is the only true form of hæmophilic joint disease; in the other the joint manifestations may be present in normal individuals, but greatly aggravated when the hæmorrhagic diathesis is present. The spontaneous arthrites he divides into slight hæmarthrosis, benign painless hæmarthrosis, serious painful hæmarthrosis, and chronic recurrent hæmarthrosis. The spontaneous differs from the other form: I, In the cause, in the spontaneous appearance, without any, or only a slight, traumatism, or a long walk, in the other following a serious injury. 2, In the time of its appearance, coming on slowly, five or six hours after the walk or slight effort in the former, immediately in the latter. 3, In the acuteness of the symptoms, which is moderate in intensity in the spontaneous, but considerable in the other form. 4, In the duration of the acute period, which is generally about eight days, rarely more than fifteen, in the spontaneous, and from fifteen to eighteen in the traumatic. 5, In the course and result, restitutio ad integrum being the rule in the spontaneous cases, except in the chronic form, while pseudoankylosis is apt to persist in the traumatic cases.

LA SEMAINE MEDICALE

September 9, 1908.
The New French Codex and the Modifications which Relate to the Posology of Powerful Drugs

By M. P. Yvon.

The New French Codex .- Yvon mentions the changes in the strength of some forty pharmaceutical preparations, which are made official by the new codex. Some of these are new preparations, like crystallized digitaline (digitoxine), some are increased in strength, others are decreased in strength, to conform to international convention, and in some the method of pharmaceutical preparation has been modified. The dosage of these altered medicaments is given.

BERLINER KLINISCHE WOCHENSCHRIFT. August 31, 1908.

- Acute Ectasia of the Stomach, By M. BORCHARDT.
- Meningitis Serosa Spinalis,
 By Kurt Menner, and S. Adler.
 By Kurt Menner, and S. Adler. Another Case of Torsion of the Pedicle of the Gall-By MAYER

- Are Glandlike Lumina Present in the Cell Complex of the Suprarenal Capsules? By M. ASKANAZY.
- Remarks Concerning the Use of Europhen.

 By P. Meissner.

 Adrenalin Glycosuria and the Influence Exerted upon it
- by the Extract and the Juice of the Pancreas By CESARE FRUGONI.
- Contribution to the Diseases of the Conus Medullaris, By RABINOWITSCH.
- Remarks on Resection of the Elbow Joint with Preservation of its Mobility, By W. Lossen.
- I. Acute Ectasia of the Stomach.-Borchardt says that, although the various names under which this disease is known, such as acute ectasia of the stomach, mesenterial occlusion of the intestine, arteriomesenterial occlusion of the intestine, duodenal ileus, and angular occlusion of the duodenum. may be justified from a pathological standpoint, still clinically the condition is one of occlusion of the duodenum, with all the consequences of occlusion high up in the intestine. In his opinion acute atony and ectasia of the stomach is the primary trouble in the majority of cases. It produces occlusion of the duodenum by pressing the intestine before it into the true pelvis, rendering the mesentery tense, while, as the accumulation of fluid in the stomach increases, the occlusion grows firmer and firmer, movement of the intestine becomes impossible, and the occlusion becomes irremediable without artificial help. The diagnosis of this condition is easy as a rule if one thinks of its possibility. And it should be thought of in every case where, after narcosis, operations of any kind, particularly after laparotomies and especially after operations on the biliary passages, or during convalescence from severe diseases, or after errors of diet, or after severe vomiting, serious abdominal symptoms put in an appearance. Our endeavor should be not to choose the right operation, but to render any surgical intervention unnecessary by an early diagnosis.
- 2. Meningitis Serosa Spinalis.- Mendel and Adler report a case of this nature which was successfully operated on by laminectomy of some of the dorsal vertebræ and evacuation of one and a half teaspoonfuls of clear liquid, which was unfortunately

5. Europhen. - Meissner speaks highly of europhen as a cleansing, analgesic, and odorless powder for use in the treatment of venereal ulcers.

6. Adrenalin Glycosuria and the Influence Exerted upon it by the Extract and the Juice of the Pancreas.-Frugoni arrives at the following conclusions from his experiments on animals: 1, A quantity of adrenalin sufficient to produce glycosuria will fail to do so when given an animal in an injection which contains a sufficient quantity of extract of the pancreas. 2, The pancreas juice has also the power to prevent adrenalin glycosuria when it is injected in large quantity before the adrenalin; a certain amount of time is necessary for its, at least partial, absorption. The best results were obtained when it was introduced through the peritonæum two hours before the subcutaneous injection of the adrenalin. 3, As the adrenalin is taken from an organism in which the circulation is overcharged with sodium bicarbonate, through the previous endovenous injection, it is probably modified in its chemical structure and its general biological action neutralized. 4, The juice of the pancreas in contact with adrenalin in

the test tube for from ten to fourteen hours is changed so that it loses its chemical reactions and its biological characteristics are fundamentally modified. 5, The same effects are produced when adrenalin is brought into conjunction with corresponding salts. 6, Finally, the pancreatic juice, when it has previously undergone dialysis, behaves toward adrenalin as an indifferent fluid.

7. Diseases of the Conus Medullaris .-- Rabinowitsch says that the clinical symptoms met with in these patients may be divided into three groups: I, Anæsthesia of the urethra and rectum; loss of the voluntary innervation of the bladder and rectum; impotence. 2, Anæsthesia of the genitals, of the perinæum, of the anococcygeal region, and of the neighboring portion of the nates. 3, Loss of the reflex of the right tendo Achillis.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT. September 1, 1908.

Some Observations on Experimental Anæmias, By Morawitz and Pratt. The Absolute Plethysmogramm,

The Limitations of Treatment with Pessaries

A New Contribution to the Thymus in Exophthalmic 4 Goître, By CAPELLE. Blood Conditions in Periodic Acetonæmia of Large

By HECKER. The Genesis and Treatment of Intestinal Hernia.

Ву Косн. Kromayer's Mercury Inhalation Treatment of Syphilis, By BENDIG. A Carrier of Dysentery Bacilli, By KÜSTER. Concerning Indirect Fractures of the Metatarsus,

By NAST-KOLB. 10. A Case of Luxation from Distention in the Atlanto-epistropheal Joint, By WITTEK. epistropheal Joint, Casuistics of Abortive Pneumonia,

By SIMON. The New Explanation of the Action of Tuberculin,

By WOLFF-EISNER.

13. The Technique of the Extraction of Needles, By HOLZKNECHT and GRÜNFELD.

Experimental Anæmias. - Morawitz and Pratt conclude that in severe anæmias experimentally produced the oxidations in the tissues are not carried out completely to the final products of metabolism, but are brought to an end partly in the blood or in other organs. The true cause may therefore be lack of oxygen.

4. The Thymus in Exophthalmic Goître.—Capelle reports a case of removal of the thyreoid gland in exophthalmic goître, followed by death in twelve hours from a thymic condition. He believes that the presence of a large thymus is a contraindication

to operative intervention in this disease.

5. Periodic Acetonæmia of Large Children .-Hecker believes that the periodical acetonæmia of large children is not an accidental disturbance, but is a constitutional anomaly in the sense of an arrest of development and of the fat removing function.

AMERICAN JOURNAL OF OBSTETRICS October, 1908.

r. An Experimental Study on Hæmorrhage Following Section of the Uterine and Ovarian Vessels in Dogs and Its Possible Bearing on Ruptured Gestation

Some Comments on Dr. Reynolds's Paper, "The Superiority of Primary over Secondary Caesarean Section," By S. P. WARREN.

Report of Fourteen Cases of Cæsarean Section,

By J. O. POLAK.
Infarction of Renal Cortex in Pregnancy, By O. KLOTZ.
Ovariotomy during Pregnancy, By C. G. CUMSTON.

Vincent's Angina during Pregnancy, By F. ROYER. Vincent's Angina during regulatory,
Report of a Case of Ichthyosis Feetalis; Placenta and
Membranes Involved,
The Causes of Abortion,
By F. J. TAUSSIG.
Criminal Abortion,
By F. H. JACKSON.

 A Presentation of the Subject of Artificial Infant Feeding for the General Practitioner, By G. R. PISEK. ing for the General Practitioner, By G. R. PISEK.
Angioneurotic and Some Other Examples of Essential
Œdema in Children, By H. Schwarz.

1. An Experimental Study on Hæmorrhage Following Section of the Uterine and Ovarian Vessels in Dogs and Its Possible Bearing on Ruptured Gestation .- Robb made a series of thirtyone experiments, and believes, as a result, that the intraabdominal hæmorrhage which occurs in women collapsed after rupture of an ectopic gestation sac is not, in itself, sufficient to cause death in such Death is due rather to shock, which may be increased by various surgical procedures. If operation is performed immediately after the occurrence of the hæmorrhage the superadded shock is likely to be very dangerous. In the author's experiments the difference in resisting power between dogs and women was borne in mind, but the experiments were of so severe a nature that the probability of fatal hæmorrhage was as great or greater than that to which women are subjected when a tube is ruptured. The manipulation of the tissues in the latter case probably disturbs the clots which may have formed in the bleeding vessels, and a hæmorrhage which had ceased may thus be reawakened.

Ovariotomy during Pregnancy.—Cumston 5. has found it advisable to remove ovarian tumors five times in connection with pregnancy. The indication for operative interference would be furnished by the occurrence of severe symptoms, of whatever character, proceeding from the tumor. The author believes that the operation should always be performed in the presence of severe symptoms, especially such as may arise from twisting of the pedicle. The condition is not a common one, and there are doubtless instances in which the tumor causes no sypmtoms, and may not be discovered until after labor. In the majority of cases the presence of a cystoma does not add to the severity or the dangers of labor. It is thought that there may be greater tendency to postpartum hæmorrhage if such a growth is not removed prior to The growth should usually be removed by abdominal incision, although there are cases in which it is quite feasible to remove it by the vagina.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 765.)

COMBINED MEETINGS OF SECTIONS I AND VII.

Recent Developments in Regard to the Relations of Human and Bovine Tuberculosis .- Dr. NATHAN RAW, of Liverpool, England, said that Koch was right in his assertion that human tuberculosis was different from bovine tuberculosis; but that

he was in error when he said that boyine tuberculosis could not be transmitted to human subjects. During the last fifteen years he had had the opportunity of observing over 5,000 persons with tuberculosis, and of that number 3,000 had died in the hospital. Careful pathological examinations had been made in a very large number of the cases, and as a result of the studies made in these cases he was able to confirm the opinion, which he had advanced in 1903, that the tubercle bacillus was divisible into the typus humanus and the typus borinus. He believed that. on account of the fact that for centuries the human family had been feeding upon the products of tuberculous animals, the human system had become tolerant of bovine tubercle bacilli. Man was attacked by two distinct varieties of tuberculosis; one conveyed by infection from person to person, and the other transmitted by infected food products. Tubercle bacilli of the human type produced pulmonary tuberculosis, ulceration of the intestines, and tuberculous laryngitis. The bovine type of the bacillus produced tuberculous peritonitis, tuberculosis of the lymphatic nodes, acute miliary tuberculosis, tuberculous joints, tuberculous meningitis, and lupus. Clinically, these lesions were antagonistic to each other, so that a person who had been attacked by the human type of bacillus would not be attacked by the bovine type of the organism. In addition to the open air treatment of tuberculosis, tuberculin therapy was necessary to thoroughly eradicate the disease from the blood, and to produce an artificial immunity. Tuberculin R was of little value in the treatment of pulmonary tuberculosis, although it was of the greatest possible service in treating all infections of a bovine origin. This was what one should expect in view of the fact that it was produced from human tubercle bacilli. It acted by producing an immunity in those forms of tuberculosis. In the treatment of infections with the human type of the bacillus we needed a tuberculin prepared from bovine sources, and in his hands it had proved of great assistance, particularly in early cases. In all, he had treated about 200 cases of tuberculosis with tuberculins with encouraging results. He believed that pulmonary tuberculosis was the direct result of inhaling vitiated air containing tubercle bacilli, or, in some cases, by absorbing them through the alimentary tract. When tuberculosis was eradicated from dairy cows it would be a rare event to see a case of surgical tuberculosis.

The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis.—Dr. R. M. Dixwidden, of the Experiment Station in Arkansas, said that he had inoculated material derived from two cases of tuberculous lymph nodes of the neck, from one case of tuberculous arthritis of the knee, and from one case of genitourinary tuberculosis into yearling cattle by the intraperitoneal route. His results showed that this material was no more virulent for cattle than the sputum of consumptives. The theory that certain forms of surgical tuberculosis in man, especially those involving the lymph nodes, were due to bacilli of the bovine type received no support from these experiments.

Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consective Cases.—Dr. Paul A. Lewis, of Boston, said that he had found tubercle bacilli of the bovine type

in fifteen cases of tuberculosis of the cervical lymph nodes. The studies were made on seventeen cases of primary tuberculosis of the cervical lymph nodes. In two cases there was no growth; in the fifteen others tubercle bacilli were found. Nine of the cultures were virulent for rabbits, and three of these were also virulent for calves. There were six non-virulent cultures. These, after having been transferred to glycerin agar and glycerin bouillon, grew rapidly. One of them gave an alkaline reaction, and the five others gave acid reactions.

Studies of Tubercle Bacilli from the Tissues of Special Forms of Primary Cervical Adenitis in Man, with Particular Reference to Intermediate and Atypical Varieties of Bacilli.-Dr. CHARLES W. DUVAL, of Montreal, said that the material upon which his work had been based had been isolated from four cases of primary cervical adenitis in the human subject. The clinical picture was clear in each case, a fatal termination occurred in from six to eight weeks from the onset, and necropsies showed that the fatal termination had been due to acute general miliary tuberculosis. The organisms had been recovered directly from the cervical pus at the time of the surgical intervention. Of the four cultures studied, one corresponded to the bovine type of the bacillus, and another corresponded to the human type. The two other cultures were intermediate or atpyical forms. The author believed that one of them was perhaps of a modified bovine strain, while the other was perhaps of an avian type attenuated by its sojourn in man.

SECTION II.
(Continued from page 668.)

Diagnosis and Treatment of Early Cases of Tuberculosis.

Comparative Importance of Treatment in Sanatoria Near at Hand and an Entire Change of Climate.-Dr. Frederick I. Knight, of Boston, said that climate was a factor in all treatment of tuberculosis; we always had climate at our doors. Consequently, the sanatorium treatment and the climatic treatment could not be properly compared. He believed that sanatorium treatment was the best treatment in the early cases, because it served to educate the patient in the proper method of caring for himself. Sanatorium treatment near the home of the patient was much preferable to unrestrained life under radically changed climatic conditions. A radical change in meteorological conditions was sometimes necessary for its influence upon metabolism. The relative value of change of climate could only be determined by a careful comparison of the statistics of observations made under the same conditions in different parts of the world.

The Comparative Importance of Sanatoria and of Home and Climatic Treatment.—Dr. C. Theodore Williams, of London, said that sanatorium life was the model for the consumptive, because there he learned what to do and what to avoid. The conditions of the patient's life were regulated, and he had to do what he was told. Improvement occurred in spite of the patient and his tendencies toward bad habits. In consumption the only condition under which a patient could expect to get well was by obeying orders implicitly. The

sanatorium treatment was the best for the working classes, because they could not carry on the details of the routine in their own homes. For the wealthy classes open air treatment could be carried out at home; but even for patients in such a financial condition he would advise sanatorium treatment for three months or longer, for the educational benefit to be derived from it. He was of the opinion that climatic treatment was of decided advantage in the majority of cases, particularly to patients in the early stages of the disease.

The Comparative Value of Change of Climate and of Treatment in Sanatoria Near at Hand in Cases of Pulmonary Tuberculosis.—Dr. CARROLL E. Edson, of Denver, said that the essentials of the treatment of pulmonary tuberculosis were outdoor life, rest, abundant nutrition, sunshine, and prolonged medical supervision. It was absurd to speak of the climatic treatment as opposed by the sanatorium treatment, because climate, which was the sum total of the meteorological conditions prevailing in a given region over considerable periods of time, was always present. The essentials of treatment as outlined before showed that a climate might be selected in which the patient might have all these essentials in as large proportion as possible for the greater portion of the time. The physician should see whether the climatic conditions were as good at home as could be obtained in another part of the country or of the world. A change of climate should be made if it could be done consistently with the other conditions of right living. A change of climate only offered an opportunity to obtain a cure of the disease; the climate did not cure in itself.

The Diagnosis and Treatment of Early Cases of Tuberculosis.—Dr. LAWRENCE F. FLICK, of Philadelphia, said that tuberculosis was primarily a lymphatic process. Tuberculosis of the lungs, which was of most interest to the physician, was most frequent, next to lymphatic tuberculosis, and usually began at the apices of the lungs, along their posterior pleural borders. The disease localized itself more frequently on the right side than on the left side of the body. It was possible to make a diagnosis of pulmonary tuberculosis early, before there was much destruction of tissue, although it was not easy. It should be looked for, however, in all persons who had been exposed to contagion. The subjective symptoms of the first stage were cough, supersecretion of mucus, loss of appetite, malaise, and supersensitiveness of the nervous system. The objective symptoms were elevation of temperature, disturbance of the pulse rate, and dilated pupils. The physical signs were slight bronchovesicular breathing over the affected area, a pleuritic rubbing on expiration, increase in tactile fremitus and vocal resonance, slight bronchophony, and impairment of resonance. Tuberculosis was still early in time and prognosis so long as it was limited to one lobe of one lung, or even to two lobes, provided there was not much destruction of tissue. The symptoms in the more advanced stage were usually malaise, gastric disturbance, some sense of shortness of breath, a sense of physical incapacity, cough, expectoration, chilliness or a sense of heat, and loss of appetite. The physical signs were bronchial breathing, prolonged expiratory murmur, pleuritic rubbing, increase in tactile fremitus and vocal resonance, feeble bronchophony, and impairment of resonance. When the infiltration was dense or there was a secondary infection, the symptoms all became more marked, and there was dulness on percussion. When the process had gone on to cavity formation, and the cavity was small, tactile fremitus and vocal resonance would again become normal, branchophony would be replaced by whispering pectoriloquy, and the percussion note would become tympanitic. As a small cavity dried up, the physical signs again became nearly normal, except as to quantity. Absence or deficiency of normal physical signs should raise a question of tuberculosis. Absence of tubercle bacilli from the sputum should not weigh too heavily against the diagnosis. The treatment at home under proper medical supervision was as good as any treatment in the world. The treatment of pulmonary tuberculosis was not a question of climate, but a question of home life. Recovery he considered to be an arrest of tissue destruction and a return to normal physiological health. All that was necessary was a simple life, properly selected diet, fresh air, and such medication as was necessary to restore these physiological functions. It was not certain that a patient could ever become sterile after once having been infected with tubercle bacilli. In advanced cases the treatment must be more heroic; the patient should be put to bed at complete rest, then be kept at comparative rest, and finally be put on graduated exercises. A good general basis for the diet was one meal of solid food a day and three quarts of milk and six raw eggs a day. The one meal should consist of beefsteak, roast beef, or roast mutton, with fresh vegetables and fresh fruit. The patient should under no circumstances breathe air that had already been breathed. Draughts could do him no harm if he was properly clad. So far as drug treatment was concerned, he considered iodine to be the best drug. Other drugs should be used to stimulate physiological action, never to interfere with it. Home treatment was the best, as it prepared the patient for after life. When proper discipline could not be established at home, the patient should be treated in a sanatorium in the climate in which he had been accustomed to live. After sanatorium treatment had restored the patient to physical health, a course of home treatment should be instituted to teach him how to live in order to keep well.

Dr. Carl Wirth, of St. Paul, said that he agreed with Dr. Flick that home treatment was the best for tuberculous patients. He advocated a hypodermic method of medication, for which he alleged excellent results.

Dr. Vergara Lope, of Mexico City, said that in his opinion a great altitude gave the best conditions under which to treat patients with pulmonary tuberculosis. He thought that the psysiological changes went on better at a great altitude than at a lower level, and he maintained that the nearer normal the ordinary functions of the body were the better results would be obtained from treatment.

Dr. F. M. POTTENGER, of Monrovia, Cal., said that the essentials of all treatment in cases of tuber-culosis were to apply all the methods that might raise the resisting powers of the patient. Talk of climate was getting away from the pith of the mat-

ter. Ninety-five per cent. of the patients must get well at home or not at all. Tuberculosis was cured in all climates, and while he practised in a climatic resort, he honored those who were trying to accomplish results in the homes of their patients. One should make the best of conditions as they existed at home. Intelligent management was the basis of all treatment. The physician should school himself until he was able to make an early diagnosis. It must be borne in mind that tuberculosis had a period of latency of months and even years before marked symptoms developed.

Dr. WOODCOCK, of Leeds, England, said that the sanatorium frequently put the patient in good condition in three months, but that three months' treatment was feeble. The sanatorium treatment should be grafted on to the ordinary life of the patient under the supervision of the general practitioner, if results that would be lasting were to be obtained.

results that would be lasting were to be obtained.

The Use of the X Rays in Diagnosis.—Dr.
FRANCIS H. WILLIAMS, of Boston, said that the early diagnosis of pulmonary tuberculosis was the serious and important problem in the handling of patients. He was an advocate of the use of the x rays for the detection of the extent of the disease, for the diagnosis of acute miliary and fibroid tuberculosis, for tuberculosis associated with emphysema, pleurisy with effusion, pneumothorax, etc. for the recognition of cavities and enlarged tracheal glands, and for the exclusion of cases simulating tuberculosis. The x rays were most useful very early in the disease, as they would sometimes show the existence of a focus of disease that could not be detected by physical examination. They also gave information of the conditions in the deeper portions of the lungs, of the size of the heart, and of the action of the diaphragm. The x rays were difficult of application and of interpretation, but in the hands of an experienced operator they gave a considerable amount of information. He advised precautionary x ray examinations from time to time of persons who had been exposed to the disease.

Röntgenography in the Diagnosis of Early Tuberculosis of the Lungs.—Dr. Henry Hulst, of Grand Rapids, Mich., said that he preferred the fluoroscope to the photograph in the use of x rays in the diagnosis of tuberculosis. He used a low vacuum tube with short exposures, as such a combination gave the best details. In employing this method of diagnosis the tube must be carefully chosen, the eye of the observer must be trained, and the screen and the plate must also be carefully se-

lected.

Fluoroscopy as a Routine Clinical Method of Diagnosis.—Dr. EDWARD RIST, of Paris, said that fluoroscopy should be considered as a routine method applicable to the ordinary examinations of patients. The method he believed should be studied by the physician as much as stethoscopy. Fluoroscopy showed particularly the extent of the lesions and the existence of cavities. It gave valuable information in every case of tuberculosis of the lungs.

Dr. CHARLES L. MINOR, of Asheville, N. C., said that it was extremely important that the practitioner should make his own examinations, and that he should understand the meaning of the things that he saw, that fluoroscopy was a very important method

of examination, and the practitioner should become familiar with it. Nevertheless, he did not consider it a very early diagnostic method. He thought that physical diagnosis was better for the early establishment of lung involvement than the x rays.

Dr. von Leube, of Berlin, said that if the x rays gave negative evidence, the result might be used to give the patient a sense of security, but that the physician should never rest satisfied until by repeated examinations of all kinds he could prove the nonexistence of grounds for his suspicions. He considered percussion and auscultation to be more

valuable signs for steady dependence.

The Value of Hæmoptysis as an Early Symptom of Pulmonary Disease .- Dr. JAMES M. AN-DERS, of Philadelphia, said that in the acute forms of pulmonary tuberculosis hæmoptysis might be the first symptom in a case of acute tuberculous pneu-Hæmorrhage was also frequently seen in cases of acute tuberculous bronchopneumonia; but this form of tuberculous disease also occurred during the course of chronic pulmonary tuberculosis, and under such conditions was not, as a rule, ushered in by the expectoration of blood. In chronic ulcerative pulmonary tuberculosis and in fibroid phthisis hæmoptysis was also a frequent symptom. In the latter variety of tuberculous disease copious hæmorrhage was seen. In the cases of chronic ulcerative phthisis hæmorrhage rarely occurred except when the lesions were large enough to be made out by the physical examination of the patient or by the x rays. Cases of hæmoptysis in which all the clinical and laboratory findings were negative were to be regarded as of tuberculous nature until disproved by the tuberculin test or by some other positive method. Of course, hæmoptysis was not pathognomonic of pulmonary tuberculosis, but it was of exceptional importance as a cardinal symptom. The collective investigations of the writer embraced a total of 3,506 cases, in which 338 patients, or 9.6 per cent., had hæmorrhage at the very beginning of the disease. Generally speaking, the value of hæmoptysis as a symptom for diagnosis in early pulmonary tuberculosis must be quite considerable, with no tendency to magnify its importance

The High Altitude Treatment of Tuberculosis, with Special Reference to Febrile Conditions .-Dr. O. Amrein, of Arosa, Switzerland, said that any factor that helped one to benefit patients suffering from pulmonary tuberculosis must be accepted with enthusiasm. The best conditions for patients of this class were proper care and the best possible climate. High altitudes possessed the following poperties: Low barometic pressure, dry and pure air, abundance of sunshine and the greater actinic power of the sun's rays, and a great number of bright, clear days, even in winter. Treatment in such a climate resulted in an improved condition of the blood, increased vitality of the bodily functions, diminution of the cough and expectoration, and the disappearance of night sweats. The tendency to hæmorrhage was no contraindication to residence at an high altitude, except when the hæmorrhage was due to increased blood pressure. Fever patients improved at Arosa, as a rule, but when the pulse was 120 or more they did not do so well. Many bad

cases became stationary on account of the beneficial influence of the climate, and the patients were able to preserve their health and to do some work. The "sun cure," which had recently been introduced as a method of treating laryngeal tuberculosis, was more effectively carried out in the mountains than elsewhere. The specific sera could be given with more certain effects in the mountains than elsewhere. Of fifty-one patients in the first stage of pulmonary tuberculosis, with a temperature of 38.5° C. (101.3° F.), fifty-one, or 100 per cent., lost their fever at Arosa; of forty-seven patients in the second stage of the disease, with an equal amount of fever, forty-one, or 87.2 per cent., lost their fever; and of four patients in the third stage of the disease, three, or 75 per cent., lost their fever. Of nine patients in the first stage of pulmonary tuberculosis, with a temperature of over 38.5° C. (101.3° F.), six, or 66.6 per cent., lost their fever; of forty-seven patients in the second stage of the disease, thirty-seven, or 78.7 per cent., lost their fever; and of twenty-five in the third stage of the disease, twelve, or 48 per cent., lost their fever.

(To be continued.)

Wetters to the Editors.

AN EMBARRASSMENT TO BE AVOIDED.

NEW YORK, October 12, 1908.

To the Editors:

In view of the establishment of a female nurse corps in the United States Navy, may I be permitted as a layman to recount some of my experiences in a hospital last summer, when I was a patient suffering from malarial fever? It seemed to me while in the hospital that the female nurse was a distinct hindrance to recovery in that her presence checked some of the functions of the body most necessary to recovery. A comparison of my feelings, when I became convalescent, with those of other patients showed me that I was not alone in

my opinions.

In relieving the bladder or in a movement of the bowels I found that conditions of flatulency brought the excretory functioning in those cases within the cognizance of the young women on the other side of the screen placed around my bed. After that it seemed utterly impossible to make the necessary voiding. The excrementitious material would descend until there was danger of an explosion of flatulency, and then the sex considerations would intrude and the muscles would refuse to operate. They would contract, and no effort of my will could force any expulsion. I am not unnaturally modest, and have knocked about enough in this and foreign countries to be without any squeamishness in those matters. When I communicated my trouble to the orderly, he remarked cynically: "Why do you let that bother you? They're only nurses." Bravely did I try to apply this brutal philosophy to the urgency of my case, but it was ineffectual, and a catheter was used. I protested that it was not necessary, that it was the presence of the women nurses within sound that

kept the flow back, but it was impossible to influence the house doctor with any such argument. Finally, when the absence of any movement of the bowels was causing some concern, I told the orderly about 2 a. m. to get the nurse out of the ward and I would show him what was the matter. "Keep her out for half an hour if you can," I said. He did, and drew the screen around me. No sooner was I sure that she was out of hearing than the muscles were let loose and acted with beautiful freedom. The accumulations of wind which I had feared would manifest themselves were there, and for minutes the noise accompanying these excretory movements reverberated about the ward, but there being only men present, I did not care. The relief, of course, was immediate, and I began to mend. After that the orderly kindly arranged to get the nurse out. On reaching convalescence, I spoke to others about the unwillingness of the organs to work when young and pretty women were near, and several said: "Why, that is exactly how I felt about it." It occurred to me that it should be so arranged in the treatment of patients that the sex quesion should be entirely eliminated. The most important agents in recovery are the free movements of the bowels and the bladder, and if they are checked or retarded in any way, there is just so much danger added to the situation. It is idle to talk about this feeling of men patients being controllable by the will. It is not. Being a sex sentiment, it passes beyond the control of the will and becomes involuntary and instinctive.

There is no reason to think that sailors will be any less affected by the proximity of pretty young women nurses than I was, and therefore it is natural to conclude that the work of the excretory organs will be hindered, and perhaps in more than one case to a disastrons extent. There is a certain daintiness about women that is charming to have in a sick room, but is there not a corresponding inevitable interference with the normal functioning

of organs that should not be tolerated?

W. E. H.

** Our correspondent's embarrassment was natural, but it should be borne in mind that flatulence is one of the things concerning which a nurse is expected to report. The hospital people might have explained this to W. E. H. and the other patients. A tactful nurse will appear to absent herself on such an occasion as our correspondent mentions, but she will really remain within observing distance.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Angina Pectoris, Von Dr. Louis Peiser, Arzt am deutschen Hospital und deutschen Dispensary der Stadt New York. Stuttgart Ferdmand Enke, 1008. Pp. 100.

Dr. Peiser, of New York, has written a book for which he can be congratulated. It does not contain any new theories—that was not the author's intention, as he remarks in his introduction that he has as a general practitioner not the time for going

so deep into the subject-but what he says is a well

compiled résumé of our present knowledge of angina pectoris.

The book is well written in a simple, plain German, which will permit even a non-German who has a fair knowledge of the language to read the book with interest. The author begins with three short case histories, which he uses as examples to build up a general description of angina pectoris, its history, ætiology, and pathology. Here follow eleven more case histories as an introduction for the coming chapters, in which the author describes the clinical aspect and tendency of angina pectoris, autopsy findings, prognosis, diagnosis, distinctive diagnosis, therapeutics, and prophylaxis. The bibliography goes fully into the subject, and there are one hundred and thirty authors cited.

Every general practitioner will be thankful to the author for this clearly and concisely written book, which surely would find a very large circle of readers in America if it was translated into English.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York, 1906-1907. By Professor A. E. WRIGHT, Professor C. A. HERTER, Professor W. T. PORTER, Professor J. G. ADAMI, Dr. S. J. MELITZER, Professor F. G. BENEDICT, Professor E. B. WILSON, Professor F. G. MENDELLE, Professor F. G. WILSON, Professor F. WILSON, P fessor George S. Huntington, Professor W. T. Councilman, and Professor Friedrich Müller. Philadelphia and London: J. B. Lippincott Company, 1908. Pp. 314.

The appearance of the second volume of the Harvey Lectures shows no recession from the high standard set by the society in its first year. By affording the medical profession of New York and its vicinity the opportunity of listening each year to the latest results of research in important fields, presented by men qualified by their own work to speak with authority, the society is doing a real public service. Through the publication of these lectures it widens its audience to embrace all English speaking medical men in whom the routine of practice or the pursuit of its rewards has not been able to quench that thirst for true knowledge so characteristic of the profession as a whole.

That the society appreciates the special interest to practitioners of investigations that promise more immediate practical application to the cure of disease, this volume shows. It opens with a brilliant piece of special pleading for the recognition of the achievements of vaccine therapy, by Sir Almroth E Wright, its most prominent student; it closes with a judicial review of our present knowledge of the cardiac neuroses, their diagnosis and their treatment, by Germany's foremost clinical teacher, Professor Friedrich Müller.

Between these one finds illuminating discussions of the following wide range of subjects: The Common Bacteriological Infections of the Digestive Tract and the Intoxications Arising Therefrom, by Professor C. A. Herter, of Columbia University; Vasomotor Relations, by Professor W. T. Porter, of Harvard University; The Myelins and Potential Fluid Crystals of the Body, by Professor J. G. Adami, of McGill University; The Factors of Safety in Animal Structure and the Animal Economy, by Dr. S. J. Meltzer, of the Rockefeller Institute for Medical Research; Metabolism during Inanition, by Professor F. G. Benedict, of Wesleyan

University; Some Recent Studies of Heredity, by Professor E. B. Wilson, of Columbia University; and The Genetic Interpretation of the Variations in the Genitourinary Tract, by Professor George S.

Huntington, of Columbia University.

Of these, some, like Benedict's, make us marvel at the minute exactness with which the human body can be studied; others, like Porter's, lay bare the extent of our physiological ignorance, and give a rough jolt to our complacent satisfaction with crude clinical explanations of complex phenomena. Huntington sets before us an imposing array of anatomical facts; Meltzer, a fascinating physiological generalization. All alike show the scientific method at work. The reading of such a volume exerts an influence beyond that of the knowledge it conveys, and the lectures can be warmly recommended to every physician.

BOOKS, PAMPHLETS, ETC., RECEIVED.

La Pathologie de l'attention. Par N. Vaschide, directeuradjoint au Laboratoire de psychologie pathologique de l'Ecole des hautes études, et Raymond Meunier, préparateur au Laboratoire de psychologie pathologique de l'Ecole des hautes études (Asile de Villejuif). Paris: Bloud et Cie, 1908. Pp. 115.

Les Hallucinations télépathiques. Par N. Vaschide, di-decteur-adjoint au Laboratoire de psychologie pathologique de l'Ecole des hautes études. Paris: Bloud et Cie, 1908.

Le Spiritisme dans ses rapports avec la folie. Essai de psychologie normale et pathologique par le Docteur Marcel Villet, médecin des asiles. Paris: Bloud et Cie, 1908. Pp. iv-20.

L'Audition morbide. Par le Dr. A. Marie (de Villejuif), médecin en chef des Asiles, directeur du Laboratoire de psychologie pathologique de l'Ecole des hautes études. Paris: Bloud et Cie, 1908. Pp. iv-146.

The Age of Mental Virility. An Inquiry into the Records of Achievement of the World's Chief Workers and Thinkers. By W. A. Newman Dorland. New York: The Century Co., 1908. Pp. 229.

Pathogenic Microorganisms. Including Bacteria and Protozoa. A Practical Manual for Students, Physicians, and Health Officers. By William Hallock Park, M. D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Director of the Beasterly Laboratory of the December of Health New

rroiessor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Director of the Research Laboratory of the Department of Health, New York City; assisted by Anna W. Williams. M. D., Assistant Director of the Research Laboratory; Pathologist to the New York Infirmary for Women and Children. Third Edition, Enlarged and Thoroughly Revised, with 176 Engravings and 5 Full Page Plates. Philadelphia and New York: Lea & Febiger, 1908. Pp. viii-642.

Spectacles and Eyeglasses. Their Forms, Mounting, and Proper Adjustment. By R. J. Phillips, M. D., Ophthalmologist to the Presbyterian Orphanage, Late Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine, etc. Fourth Edition, Revised. With 56 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. x-91. (Price, \$1.)

A Laboratory Guide for Histology. Laboratory Outlines for the Study of Histology and Microscopic Anatomy. By Irving Hardesty A. B., Ph. D., Associate Professor of Anatomy in the University of California. With a Chapter on Laboratory Drawing by Adelebert Watts Lee, M. D., Assistant in Anatomy in the University of California. With Thirty Illustrations, Two of which are in Colors. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. vi-193. (Price, \$1.50.) (Price, \$1.50.) Les Synesthésics. Par Henry Laures. Paris: Bloud et

Cic. 1008 Pp. 07 The Eclectic Practice in Diseases of Children. dents and Practitioners. By William Nelson Mundy, M. D., Professor of Pædiatrics in the Eclectic Medical Institute, Cincinnati, O., etc. Second Edition, Revised, Rewritten, and Enlarged. Cincinnati: The Scudder Brothers Company, 1908. Pp. 512. OFFICIAL NEWS.

Stories of a Country Doctor. By Willis P. King, M. D., First Vice-President of the American Medical Association, ex-President of the Missouri State Medical Association,

ex-President of the Missouri State Medical Association, etc. Chicago: Clinic Publishing Company, 1908. Pp. 398. The Exploits of a Physician Detective. By George F. Butler, M. D., Professor and Head of the Department of Therapeutics and Professor of Clinical Medicine, Chicago College of Medicine and Surgery. Chicago: Clinic Publishing Company, 1908. Pp. 322.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenitalapparates. Begründet von weil. Prof. Dr. M. Nitze und Dr. S. Jacoby, Parlin Heruspaggeban von Prof. Dr. B. H. Rois Peupond. Beglindet von weil, Prof. Dr. M. Nitze und Dr. S. Jacoby, Berlin, Herausgegeben von Prof. Dr. R. du Bois-Reymond, Berlin, Dr. C. P. C. Bosch, Haag, etc., und unter Mitwirkung von J. Albarran, Paris, A. Bier, Berlin, H. Fenwick, London, A. von Frisch, Wien, H. Kümmel, Hamburg, H. Young, Baltimore. Redigiert von Prof. Dr. A. Kollmann, in Liepzig, und Dr. S. Jacoby, in Berlin, 13. Jahrgang. Bericht über das Jahr 1907. Berlin: S. Karger, 1908. Pp. v-518.

Official Acws.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon general. United States Public Health and Marine Hospital Service, during the week ending October 16, 1908

| Places. Smallpor U | | es. Deaths. |
|---|--------------------------------|-------------|
| Indiana-La Favette | Sept. 21 28 | 2 |
| Kentucky-Covington | Sept. 26-Oct. 3 Sept. 12 19 | I I |
| Massachusetts—Lawrence Missouri—St. Joseph | Sept. 19-26 | I |
| Washington Spokane | Sept. 19-26 | Imported. |
| Wisconsin-La Crosse | | 1 |
| Smallpox : | | |
| Brazil—Rio de Janeiro Canada—Halifax | Nug. 23-30 | 5 291 |
| Ecuador - Guayaquil | Sept. 5 12 | . 5 |
| India—Bombay | | . 3 |
| Italy—Naples | | 1 |
| Java—Batavia | Aug. 22-29 | 2 |
| Norway—Christiania Russia—Moscow | Sept. 5-12 | |
| Russia-St. Petersburg | Aug. 22-Sept. 5 | 9 2 |
| Russia-Warsan | Aug 8-15 | -4 |
| Spain.—Valencia Straits Settlements—Penang | | I I |
| Trukey-Constantinople | Sept. 6-13 | 8 |
| Yellow Fee | er Foreign. | |
| Cuba—Habana | Sept. 29-Oct. 4 | 1 1 |
| Ecuador—Guayaquil | From S. S. Merida. | |
| France-St. Nazaire | Oct. 7 | Present |
| Martinique-Fort de France | Sept. 12-26 | 5 3 |
| Mexico-Vera Cruz | | 2 |
| Cholera- | | |
| India—Bombay | Aug. 25-Sept. 1 | 7.1 |
| Japan-Mon | | |
| Japan-Wakamatsu | Aug. 25-Sept. 7 | 4 1 |
| Russia—General Russia—Moscow | | 9 4.633 |
| Russia—Riga | Sept. 19-26 | 2 |
| Russia—St Petersburg | To. Sept. 264.73 | 1,704 |
| Plague- | | |
| Egypt General. | | 0 10 |
| Egypt- Mexandria, | Aug. 20-Sept. 17 | 8 4 |
| India General | Aug. 22-20 | |
| India Bombay | Aug. 15-22 | 0 10 |
| Indo-China-Saigon | Aug. 15-22 | 6 4 |
| Venezuela—Caracas | | I d 2 |
| venezuera-Caracas | | 4 2 |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 17, 1908.

ABROTT, F. C., Acting Assistant Surgeon. Granted four teen days' leave of absence from October 11, 1908.

BAILHACHE, P. H., Surgeon. Leave of absence for twenty days from September 21, 1998, amended to read fifteen

days from September 21, 1908, anended to read inteendays from September 21, 1908.

BURKHALTER, J. T., Passed Assistant Surgeon. Granted seven days' leave of absence from October 1, 1908.

FROST, W. H., Assistant Surgeon. Granted fifteen days leave of absence from October 11, 1908.

GIBSON, F. L., Pharmacist. Leave of absence for thirty days from September 8, 1908, amended to read sixteen days from September 8, 1908, amended to read sixteen days from September 8, 1908.

HEISER, V. G., Passed Assistant Surgeon. Granted thirty days' leave of absence while en route to join station at

Manila, P. I. Holt, E. M., Pharmacist. Granted thirty days' leave of

absence from October 19, 1908.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted nine days' leave of absence from October 11, 1908.

KERR, J. W., Assistant Surgeon-General. Granted seven days' leave of absence from October 16, 1908.

MEGAW, H., Pharmacist. Leave of absence for thirty days from Sentember 1, 1908.

from September 1, 1908, amended to read twenty-one days from September 1, 1908.

Nydegger, J. A., Passed Assistant Surgeon. Leave of absence for twenty-three days from Septmber 19, 1908, amended to read twenty-two days from September 19, 1908.

ROGERS, EDWARD, Pharmacist. Granted three days' leave of absence from October 3, 1908, under paragraph 210, Service Regulations.

RYDER, L. W., Pharmacist. Granted two days' leave of absence from October 9, 1908, under paragraph 210, Ser-

vice Regulations.
MON, T. W., Passed Assistant Surgeon. Directed to SALMON. report to commanding officer revenue cutter Gresham October 10, 1908, for temporary duty. Scott, E. B., Pharmacist. Granted twenty days' leave of

absence from October 23, 1908.

SMITH, F. C., Passed Assistant Surgeon. Granted seven-teen days' extension of leave of absence from October

SPANGLER, L. C., Pharmacist. Granted thirty days' leave of

SPANGLER, L. C., Pharmacist. Granted thirty days' leave of absence from November 3, 1908.

STIMSON, A. M., Passed Assistant Surgeon. Directed to proceed to Santa Ana and points in vicinity of Los Angeles, Cal., upon special temporary duty.

STONER, G. W., Surgeon. Granted fifteen days' leave of absence from October 8, 1908.

TROXLER, R. F., Pharmacist. Leave of absence for seven days from September 28, 1908, amended to read five days from September 28, 1908.

Board Convened.

A board of medical officers was convened to meet at the Hygienic Laboratory October 19, 1908, on call of chairman, for the purpose of examining Pharmacist C. O. Sterns, to determine his fitness for promotion to the grade of pharmacist of the second class. Passed Assistant Surgeon J. F. Anderson, chairman; Passed Assistant Surgeon Joseph Goldberger, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Army for the week ending October 17, 1908:

ADAIR, G. W., Colonel, Medical Corps. Granted leave of absence for fifteen days

BALLARD, J. C., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Sam

Houston, Texas, for duty,

BLANCHARD, R. M., Captain, Medical Corps. Ordered from

Fort Wingate, New Mexico, to Whipple Barracks, Arizona, for duty with troops on a twenty-one days' prac-

tice march.
Borden, W. C., Major, Medical Corps. Having been found physically incapacitated for active service, ordered home to await retirement.

Brechemin, Louis, Lieutenant Colonel, Medical Corps. Relieved from duty in charge of the medical supply depot, New York; granted leave of absence for one month, ten days; ordered to sail from San Francisco, Cal., for the Philippines on December 5th, instead of November 5th, as first ordered.

COFFIN, H. L., First Lieutenant, Medical Reserve Corps. Granted leave of absence for four months.

C. Le R., Captain, Medical Corps. Granted leave of

absence for ten days.

DAYWALT, G. W., First Lieutenant, Medical Reserve Corps, Relieved from present duties in time to sail on December 5th from San Francisco, Cal., for the Philippines. HARNNETT, E. H., Captain, Medical Corps. Relieved from duty in the Philippines Division in time to sail on January 1882.

uary 15, 1009, for San Francisco, Cal.

HENRY, Z. L., First Lieutenant, Medical Reserve Corps.

Assigned to active duty; ordered to Fort Thomas,

Assigned to active duty; ordered to Fort Finances, Ky, for active duty.

HUNTINGTON, P. W., Captain, Medical Corps. Relieved from present duties in time to sail on December 5th from San Francisco, Cal., for Philippine service.

LEECH, W. F., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Jefferson December Medical Reserve.

Barracks, Mo., for duty. LORD, L. W., First Lieutenant, Medical Reserve Corps. Assigned to active duty and ordered to Fort Riley, Kansas,

for duty.

Love, A. G., Lieutenant, Medical Corps. Relieved from duty in the Philippines Division in time to sail on Jan-

uary 15, 1909, for San Francisco, Cal.
MALONEY, J. E., First Lieutenant, Medical Reserve Corps. Assigned to active duty and ordered to Fort Hancock, N. J., for duty.

MONCRIEF, W. H., Captain, Medical Corps. Relieved from present duties in time to sail on December 5th from San Francisco, Cal., for Philippine service.

PIPES, H. F., Captain, Medical Corps. Relieved from duty with Co. C, H. C., and ordered to duty at the Army General Hospital, Washington, D. C.

RAGAN, C. A., Captain. Ordered to return to Fort Monroe, Virginia, from treatment at Washington, D. C. RAND, I. W., Major, Medical Corps. Relieved from duty at the Philippines Division in time to sail on December

15th for San Francisco, Cal. PHERD, J. M., First Lieutenant, Medical Reserve

Shepherd, J. M., First Lieutenant, medical according Corps. Granted an extension of one month to leave of SLAYTER, J. T., First Lieutenant, Medical Reserve Corps.

Granted leave of absence for ten days.

SNYDER, H. M., Lieutenant, Medical Corps. Relieved from present duties in time to sail on December 5th from

San Francisco, Cal., for Philippine service.

Suggs, Frank, First Lieutenant, Medical Reserve Corps.

Granted leave of absence for one month, to take effect

about October 22d.
Torney, G. H., Colonel, Medical Corps. Granted leave of

absence for fifteen days.

WYETH, M. C., Major, Medical Corps. Having been found physically disqualified for the duties of a lieutenant colonel in the Medical Corps. by reason of disability incident to the service, his retirement from active service as a licutenant colonel is announced to date from May 1, 1908.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for

BISHOP, L. W., Passed Assistant Surgeon. Detached from the Naval Flospital, New York, N. Y., and ordered to the Navy Recruiting Station, Omaha, Neb.

CUTHERTSON, R., Assistant Surgeon. Appointed as assistant surgeon from October 12, 1908.

DESSEZ, P. T., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the South Dakota.

DIFILE, O., Medical Inspector. Commissioned a medical inspector from October 14, 1008.

inspector from October 11, 1908. EVANS, S. G., Surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to the *Pennsyl-*

GATEWOOD, J. D., Medical Inspector. Commissioned a medi-

cal inspector from September 18, 1968.

Hale, G. D., Assistant Surgeon. Detached from the Idaho and ordered to the New Hampshire.

Lownes, C. H. T., Surgeon. Detached from the South

Noble, D. H., Assistant Surgeon. Appointed an assistant

Rose, M. E., Assistant Surgeon. Detached from the Naval Recruiting Station, Omaha, Neb., and ordered to the

SHIPP, E. M., Surgeon. Detached from the Pennsylvania and ordered home to await orders.

SINCLAIR, J. A. B., Assistant Surgeon. Appointed an assistant surgeon from October 12, 1908.
WHITMORE, G. B., Assistant Surgeon. Appointed an assistant surgeon from October 12, 1908.

Births, Marriages, and Beaths.

Married.

ALLAN—Cowper.—In Buffalo, N. Y., on Wednesday, October 21st, Dr. Alexander Allan and Miss Maude Cowper. Barnes—Groves.—In Providence, Rhode Island, on Tuesday, October 13th, Dr. Henry Barnes, of Boston, and Miss

BLOOMBERGH-HOWARD.-In Atchison, Kansas, on Wednesday, October 7th, Dr. Horace D. Bloombergh, United States Army, and Miss Helen Howard.

CAMERON-NEWTON .-- In Washington, D. C., on Tuesday, October 6th, Dr. Frank Kenneth Cameron, of Baltimore,

October 6th, Dr. Frank Kenneth Cameron, of Baltimore, and Miss Virginia B. Newton.
COWLES—JAQUITH.—In Bridgeport, Connecticut, on Thursday, October 8th, Dr. Echward C. Cowles, of New York, and Miss Florence Jaquith. of Boston.
FLEMING—ELSTEIN.—In New York, on Thursday, October 15th, Dr. Mark E. Fleming and Miss Sarah Louise Elstein.
GILLS—THORNYON.—In Norfolk, Virginia, on Tuesday, October 6th, Dr. William Armistead Gills, of Richmond, and Miss Virginia P. Thornton.

HELLMAN-BLOOM.-In New York, on Monday, October 12th, Dr. Alfred H. Hellman and Miss Clarisse Bloom. LASHER—McLEAN.—In New York, on Wednesday, Oc-

tober 14th, the Rev. James Lewis Lasher and Miss Helen McLean, daughter of Dr. and Mrs. Malcolm McLean.

LINGENFELTER—GEARY.—In New York, on Wednesday, October 14th, Dr. Howard A. Lingenfelter and Miss Mar-

garet E. Geary.

Mesereau—Newbury.—In New York, on Wednesday, October 14th, Dr. William Jay Mesereau and Miss Josepha Myrta Newbury.

SLAUGHTER-McCoach.—In Philadelphia, on Thursday, October 15th, Dr. Charles H. P. Slaughter and Miss Caroline K. McCoach.

TOWNSEND—BURDICK.—In New York, on Wednesday, October 14th, Dr. Theodore I. Townsend and Miss Katherine Burdick.

ZURLO-VACHRIS.-In Brooklyn, on Sunday, October 11th, Dr. Lorenzo Zurlo and Miss Jennie Vachris.

Anderson.-In Louisville, Kentucky, on Tuesday, October 13th, Dr. Turner Anderson, aged sixty-six years.

Beck.—In New York, on Wednesday, October 14th, Dr. Alexander W. Beck, aged fifty-seven years.

CAMPBELL.—In Shelbyville, Indiana, on Thursday, October 8th, Dr. Frank Campbell, aged forty-six years.

Dearing.—In Braintree, Massachusetts, on Thursday, October 15th, Dr. T. Haven Dearing, aged eighty-three

GILE.—In Bloomfield, New Jersey, on Monday, October 12th, Dr. Francis Alfred Gile, aged sixty-three years.
GREEN.—In Geneseo, New York, on Tuesday, October

GREN.—In Geneseo, New York, on Tuesday, October 6th. Dr. Robert W. Green, aged sixty-eight years.

LAYBOURNE.—In Springfield, Ohio, on Thursday, October 8th, Dr. A. W. Laybourne, aged ninety years.

NEIMAN—In Philadelphia, on Thursday, October 15th, Dr. Howard G. Meiman, aged twenty-four years.

RAND.—In Washington, D. C., on Tuesday, October 13th, Dr. Charles Franklin Rand, aged seventy years.

RICH.—In Kennedy, New York, on Wednesday, October 13th, Dr. Filton S. Rich.

7th, Dr. Elton S. Rich.

RUSSELL,-In New York, on Wednesday, October 14th,

Dr. Herbert Russell, aged thirty-seven years.
Stewart.—In Clay Centre, Kansas, on Friday, October

STEWART.—In Clay Centre, Kansas, on Friday, October 9th, Dr. J. P. Stewart.
West.—In Jersey City, New Jersey, on Wednesday, October 14th, Dr. John Eberle West, aged sixty-five years.
Yarnogouch.—In Markham, Texas, on Saturday, October 10th, Dr. Henry E. Yarborough.

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Original Communications.

THE ORIGIN OF SYPHILIS AND THE INVENTION OF ITS NAME.

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The perennial interest which is inseparably associated with the subject of venereal disease; its bewilderingly protean and appallingly destructive manifestations; its obscure origin in time and space; and the inextricable entanglement of its phenomenal foulness and moral and physical degradation with the most exalted and exalting sentiments and the highest and holiest feelings experienced by fallen humanity, have effectively conspired to invest this scourge of our race with the polar contrasts of irresistibly attractive interest and loathsomely repelling disgust. Accordingly, its position in the public eye and mind, both lay and medical, is absolutely unique-and seems pretty sure to remain so. The recent (August 15, 1908) discussion of the inevitably evergreen subject by Dr. Merzbach in the pages of this Journal could not fail to fix the attention of the inquiring reader. thor accepts as final the historic view of "Dr. Iwan Bloch, a Berlin physician, possessed of astonishing industry, profound sagacity, and sound judgment in the study of origins"; one who, he proceeds to add, "entered upon his study of the origin of syphilis, having fully digested the material collected by his predecessors, and with a mental tenacity and thoroughness exceptional for even a German." This highly appreciative estimate appears to be well grounded. But the line should be drawn, surely, before arriving exactly at the erection of the claim to infallibility! And I hope to be able, in the course of the present communication, to lav before the readers of the New York Medical Journal evidence sufficient to show that the view of Dr. Iwan Bloch (and of his enthusiastic disciple), "eminently fitted for his task" as he admittedly is, cannot even now be accepted as "final." The professional jury of the Anglo-American world will thus be enabled, as I trust, to arrive at the formation of an intelligent and independent verdict; without unquestioning submission of their collective private judgment to that of any imported dictator, however "eminently fitted for his task."

Indeed, the interesting fact seems to remain still known but to the very small overinquisitive minor-

ity that the original appearance of the new born word syphilis was as the title of a poem-and a very brilliant one. This production was the work of an Italian, was written in Latin, and published in the year of grace 1530 at Verona-the native city of the author-in the form of a quarto booklet of thirty-six leaves. The epoch making production which has since that date come to form the nucleus of such a colossal mass of literature is decorated with an alternative title: Syphilis sive Morbus Gallicus. The gifted author was Hieronymus Fracastorius (Hieronimo Fracastorio). He was born in the year 1483, the same year in which Martin Luther and François Rabelais first saw the light; and he died in 1553, the year in which the latter peacefully paid the debt of nature, and Michael Servetus was burned for heresy. He accordingly lived in an age of phenomenal unrest, and—in a qualified sense—of enlightenment and discovery. When Fracastor was nine years old, Christopher Columbus sailed westward in search of a transatlantic route to the Indies; and two years later the famous epidemic which furnished the source of inspiration of his poem radiated from the siege of Naples. It was a generation of explosive research and of iconoclastic inquiry. An unprecedented conjunction of events of thrillingly concentrated importance was then registered in the annals of the nations; when Europe was almost simultaneously affected (and inflicted) by the conquest of a new enemy, the Turks; the discovery of a new continent, America; the infection of a new (?) disease, syphilis; the introduction of a new art, more revolutionary and levelling in tendency than any of its predecessors, printing; and the broadcast propagation of the various new theological doctrines which collectively came to constitute the so called "Reformation." The coincidence of the introduction of printing with the exodus of Greek scholars and Greek manuscripts from the capital of the Eastern Empire, which followed its capture by the Turks, resulted in the practical display of a fearful object lesson in the realization of the Cadmian allegory; it sowed all Western Europe with "dragon's teeth"! The series of successive and colliding and intersecting and impregnating waves of thought-theological and political, social and philosophical, scientific and literary, moral and immoral, which rapidly followed from east and west and south and north, rapidly produced the broadcast development of so great an amount of mental friction in all directions as to raise the temperature of the general intellectual atmosphere far above the

boiling point. And, as necessarily occurs during every process of violent ebullition, a large quantity of the veriest moral and intellectual dregs was brought to the surface and formed its distinctive topmost layer of floating scum; the general intellectual activity was, upon the whole, enormously increased; many wonderfully inspired bubbles were thrown up to a great height, and some of these displayed richly artistic colors before they burst or disappeared; while the really wholesome and nutritive strata of the seething liquid were those which never rose to meet the public eye. Indeed, there can be no question that, so far as historical record has shed its light on the pilgrimage of humanity, the age of Hieronimo Fracastorio was, intellectually and morally, the most interesting and exciting epoch that the world has yet seen. And this (once very) famous author appears to have been one of its most brilliant products. The fact that his name has so seldom been heard of in latter times is rather an indication of the decay of culture than of the growth of knowledge and expansion of intelligence within our professional ranks. His reputation, in his own day, appears to have been boundless as well as stainless; and he figured in the midst of a generation of intellectual giants and of dazzling, critical searchlights. As in the cases of other very celebrated personages of a period when miraculous records were not infrequent, and were readily received as reliably authentic, fame decorated the infancy of the author of Syphilis with some biographical items which heavily tax the mental receptivity of the twentieth century scientist. One of these testified that "his lips adhered so closely to each other when he came into the world that a surgeon was obliged to divide them with his knife"; and another is to the effect that "his mother was killed with lightning, while he, though in her arms at the very moment, escaped unhurt." We learn that: "He was of parts so exquisite and made so wonderful a progress in everything he undertook that he became eminently skilled, not only in the belles lettres, but in all arts and sciences. He was a poet, a philosopher, a physician, an astronomer, a mathematician, etc." The great importance attached to his opinion in the highest places is demonstrated by the fact that Pope Paul III. made use of his authority to remove the sittings of the Council of Trent to Bologna: Fracastorio having deposed that a certain contagious distemper had appeared which rendered it no longer safe to continue to hold its meetings at Trent. He was personally known to very many of the most distinguished men of his generation, and he received most appreciative criti--cisms from the tallest and strongest and most unsparing of the literary Brobdingnagians. Casar Scaliger "was not content to assert that he was the best poet in the world next to Virgil, but he affirmed him to be the best in everything else; and, in short, though he was not of a temper to give people more than their due, he is said to have adored Fracastorius." Indeed, of the whole of the contents of the three books of the epic poem on Syphilis, this mammoth of criticism falls directly foul of but one item, and that is one which by no merit. Fracastor had therein enunciated the view that the *morbus gallicus* confined its ravages to human beings exclusively. This statement is traversed by Scaliger, who (states that he) knew of a dog that had contracted the disease by licking the plasters which had been applied to his master's sortes.

Then we find a host of the other leaders of criticism in his own and the succeeding generation vieing with one another in their laudatory estimations of Syphilis and its accomplished author. Boissard tells us that his verses were compared to those of Virgil himself (Ejus poemata tanti fiunt apud omnes literatos, ut illa conferantur cum Virgilianis); and that he was, accordingly, worthy of the epithet of "the Divine," which was applied to him by many (weterna lande non sine causa ad calum evehantur, unde a multis DIVINUS vocatur Fracastorius). And Thuanus, the celebrated historian of that period, adds to the unlimited praise which he bestows on our author for his supereminent accomplishments in philosophy, mathematics, astronomy, and medicine, the statement that he always practised this last with the most brilliant success, and without fee or reward (et medicinam ut honestissime ac citra lucrum ita felicissime fecit)! The famous classical scholar, Lilius Gyraldus, is correspondingly laudatory; and Rapin, if possible, still more so, asserting that the Syphilis was the most exquisite poem which had been composed for ages, and constituted a successful imitation of Virgil's Georgies (tam felici successu concinnavit Syphilidis sua pama opus sane pulcherrimum quod postremis his sæculis elaboratum fuerit, latino carmine in Italia, quodque scriptum est ad imitationem Georgicon Vergilii). We learn from Vossius, after a similarly appreciative notice of our author's genius and attainments, that two years after his death, his fellow citizens of Verona-the romantically famous abode of the jealously vindictive Montagus and Capulets, and their ill fated victims, Romeo and Juliet-erected a marble statue to commemorate his nativity and well earned fame; as they had ages before treated with corresponding distinction the respective shades of their inspired Catullus and their encyclopædic Pliny (Cives sui l'eronenses defuncto, ut ante Catullo, ac Plinio, statnam marmoream statuerunt anno 1555). Ghilinus, the famous author of the Theatrum Virorum Literatorum, places still more prolonged and detailed emphasis on the eminence of Fracastorius as a medical man, and considered him well deserving of the epithet of Felix in his practice (Felicis Medici titulum sibi comparavit, quoniam in medicinæ exercitio magna utens dexteritate, et egregia curandi methodo, paneas habuit pares, seque amabilem et mirabilem omnibus præstitit, præsertim vero iis qui ob valetudinem ad ipsum confugiebant).

The second in importance—at least as to longitudinal dimensions—of the poetic effusions of Fracastor was one on the patriarch *Joseph*—which he commenced in old age, and did not have time to finish; and which is contrasted with the *Syphilis* in manner and execution almost as strongly as in matter. Each of these compositions was dedicated to a cardinal; the *Syphilis* to Cardinal Bembo, and the *Loveth* to Cardinal Larnese. He also composed a considerable munder of brilliant specimens of

minor poetry. The second collected edition of his works (Venetiis, aprd Juntas, M. D. LXXIII), which now lies before me, contains the following: INDEX OPERUM, QV.E IN HOC VOLVMINE CONTINENTUR.

Homocentricorum siue de stellis liber vnus.
De causis criticorum dierum libellus.

De sympathia & antipathia liber vnus.

vinus.

De contagionibus & contagiosis morbis, & eorum curatione libri tres.

Navgerivs siue de poetica dia-Tyrrivs siue de intellectione

dialogus. Fracastorivs siue de anima dia

De vini temperatura sententia. Syphilidis siue de morbo Gallico libri tres. Loseph libri duo. Carminum liber vnus.

There was published at a later date another (much admired) poem of our author, with the title of Alcon, sine de Cura Canum Venaticorum. Fortunately for me, an enthusiastic former owner of my copy has written out this document-in exquisite mediæval script—on the opening flyleaves. The fact of the survival of the high poetic reputation of Fracastor in the seventeenth century is fully proved by the inclusion of his poetical works—with the conspicuous exception of the *Joseph*—in the Delitiæ CC. Italorum Poetarum, hvivs svperiorisque ævi illustrium, collectore RHANVTIO GHERO. Cipioviii. And the prose works-medical, scientific, and philosophical-everywhere display a breadth and depth of penetration and reflection, and an inspiring suggestiveness of thought; features which I feel constrained, regretfully, to add are often quite conspicuously absent from the pages of the less original publications of recent "modern" "authori-The pages of the De Contagionibus et Contagiosis Morbis will be found by the earnest student who is qualified to scrutinize it, and can bring to bear on the examination sufficient contemporary and correlated knowledge to enable him to view the various aspects of the questions therein discussed from the standpoint of the writer, to scintillate in every direction with suggestive-even inspiringideas; of which some will, I venture to suggest, be pretty surely resuscitated; and with advantage to both scientific and lay public, when the latter day doctrine of the bacterial genesis of disease has ceased to occupy the position of an infallible item of pathological faith. The question as to whether the morbus gallicus

was a disease really new to Europe-dating its focal infection from the siege of Naples in 1494-in the generation of Fracastorio, is one which, as we have seen, has been very recently answered once more in the affirmative; and with the impressive aid of the most elaborate and demonstrative historical and critical machinery and method. As already mentioned, too, one of the special objects of the present communication is to show that this affirmative answer should not be regarded as final. Every intelligent reader will, I trust, be able to grasp the reasons and estimate the value of the facts placed before him by the present writer-who will then allow him to draw his own conclusions.

The story that the lues venerea was imported to Europe from Hayti by the crew of Christopher Columbus has, as all readers know, been repeated times without number; also, that the infection was communicated to their French besiegers by the

Spanish garrison of Naples, in 1494; and that from the latter focus it was rapidly dispersed throughout Europe. But—it was not till after thirty years had elapsed from the date of the introduction of the "French evil" into Italy, and its baptism with the name and surname of morbus gallicus, that the account of its importation from the New World appears to have found its way into printed literature, historical or scientific. During the first quarter of the sixteenth century-down to 1525, and, in some instances, even later still-the various medical authorities who wrote on the subject offered a variety (even to multitudinous complexity) of ingenious hypotheses and explanations of the genesis of the new venereal plague. The catalogue of causes is a long-even a gruesomely amusing-one; but the statement or suggestion of its transatlantic origin is quite conspicuously absent. Those of my readers who have some little knowledge of the hopelessly entangled connection of medicine with mysticism, metaphysics, theology, astrology, and alchemy, which prevailed during the artistically interesting ages of the ascendancy of scholasticism, are, of course, prepared to appreciate the central factor in the genesis and development of the semiinspired confidence with which two of the most prominent, and most learned, of the physicians of that age announced their belief that the origin of the epidemic outbreak of the "French disease" was traceable to the close conjunction of the sun with Mercury, Jupiter, and Saturn, which occurred in the year of grace 1483 (by a very curious coincidence, too, the year which saw the birth of the author of Syphilis -and inventor of the name-as well as that of Martin Luther, the strenuous human source of the epidemic of theological infection which so deeply affected the length and breadth of Christendom in the same generation!). But, as it so happened that the year in which the great initial epidemic of the morbus gallicus spread over Italy was also one characterized by exceptionally heavy rains and consequent inundations, the still more famous physician, Nicolaus Leonicenus, discarded that item of astral pathology which had been advanced by Corradino Gillini and Gaspare Torella, and substituted one derived from a less elevated (meteorological) stratum; that the outbreak of the foul disorder had been aboriginally engendered by the excessive amount of moisture which happened to be present at that date; in the heavens above, and in, as well as on, the earth beneath. The great reputation of the author of this hypothesis governed the opinions of very many subsequent "authorities." We afterwards find Manardi, and also Paracelsus, ascribing the origin of the new disease to the intercourse of a leprous male with a prostitute; the former knew of the case by personal acquaintance—the gentleman was a Valentinian by birth; the evidence in the possession of Paracelsus was of similar origin, but the male partner in his sexual group was of French nativity. The learned, and deservedly famous, Antonius Musa Brassavola, of Ferrara, informed the professional world that the original epidemic of the "malady of France" radiated from the person of a female camp follower of the French army at the siege of Naples. The female in question had suffered from an abscess at the mouth of the uterus.

But a widely divergent account of its source was furnished by Gabriel Falloppius of Modena, the celebrated anatomist and physician, whose name has become immortalized in connection with the human oviduct. He avers that the Spaniards, at the time when they were hard pressed by their French besiegers, poisoned the wells from which the latter obtained their water supply, and that the new epidemic disease was the direct result of that procedure. The celebrated physician of Pope Clement VIII., Andrea Cesalpino, one of the foremost claimants to the credit of the discovery of the circulation of the blood, tells us that he learned from those who had been present at the siege of Naples, and the other operations of that campaign, that the disease really originated at the siege of Somma, a village of the Vesuvian territory. A great quantity of an excellent (and highly appreciated) Greek wine was shut up therein. One night the besieged Spanish garrison managed to escape, leaving behind them the greater part of their wine, which they had taken care previously to mingle with the blood of the patients of San Lazaro. The French besieging force, on entering the deserted village on the following day, with the characteristic pillaging and self indulging instincts of "that dissipated nation," drank freely of the inoculated wine-after which they soon were attacked by venereal symp-

The learned Bolognese physician, Leonardo Fioravanti, states that he was informed by the son of a person who had been sutler to the army of Alfonso, King of Naples, that when the supply of meat began to run short on account of the prolongation of that war, his father (the sutler) supplied both camps with dressed human flesh disguised as ordinary meat. The unconscious cannibalism which was the result of the gruesome fraud thus perpetrated was, according to that authority, the immediate cause of the development of the original epidemic of morbus gallicus. The famous Lord Chancellor Bacon quotes this story, as he does so many other "old wives' tales," with patronizing credulity; and he takes the trouble, too, of filling in some details for the more complete enlightenment of his reader: that the human flesh supplied on the occasion was that of men who had been killed in Barbary, and that it had been prepared and dressed after the manner of tunny fish.

Whether the morbus gallicus was really a West Indian import, and one previously unknown on this side the Atlantic Ocean, were questions of frequent discussion-very evidently-in the days of the author of Syphilis; and which the reader of that "divine" composition will find referred to without any attempt at dogmatic decision. True to the tone and diction of his chosen epic, he closes the poem with a thoroughly poetic version of the first appearance of the epidemic, almost as classic and pagan as his great prototype, Virgil, could himself have made it. This would seem to imply an intention of leading the reader to believe in the antiquity of its European existence. The lines are thoroughly worthy of the attention of every reader who is interested in the history of the healing art, as every medical man worthy of his profession must always be; and more especially having regard to the fact

that the origin of the word Syphilis has proved as ideally effective a pons asinorum to medical etymologists, as the origin of the protean pathological entity which it connotes has been to medical annalists. And they are as follows:

Syphilus (vt fama est) ipsa hæc ad flumina pastor Mille boues, niuas mille hæc per pabula regi Alcithoo pascebat oues, & forte sub ipsum Solstitium vrebat sitientes Syrius agros: Vrebat nemora: & nullas pastoribus vmbras Præbebant syluæ: nullum dabat aura euamen, Ille gregem miseratus, & acri concitus æstu, Sublimem in Solem vultus & lumina tollens Nam quid Sol te. inquit, rerum patremque Deumque Dicimus, & sacras vulgus rude ponimus aras, Mactatoque boue, & pingui veneramur acerra, Si nostri nec cura tibi est, nec regia tangunt Armenta? an potius superos vos arbitrer vri Inuidia? mihi mille niuis candore iuuencæ, Mille mihi pascuntur oues: vix est tibi Taurus Vnus, vix Aries cœlo (si vera feruntur) Vnus, & armenti custos Canis arida tanto. Demens quin potius Regi diuina facesso, Cui tot agri, tot sunt populi, cui lata ministrant Æquora, & est superis, ac Sole potentia maior Ille dabit facilesque auras, frigusque virentum Dulce feret nemorum armentis, æstumque leuabit. Sic fatus, mora nulla, sacras in montibus aras Instituit regi Alcithoo, & diuina facessit. Hoc manus agrestum, hoc pastorum cætera turba Exequitur: dant thura focis incensa, litantque Sanguine taurorum, & fumantia viscera torrent. Quæ postquam rex, in solio dum forte sederet Subjectos inter populos, turbamque frequentem, Agnouit, Diuum exhibito gauisus honore Non vllum tellure coli se vindice numen Imperat, esse nihil terra se maius in ipsa: Cœlo habitare Deos, nec eorum hoc esse, quod infra est. Viderat hæc, qui cuncta videt, qui singula lustrat, Sol pater, atque animo secum indignatus, iniquos Introrsit radios, & lumine fulsit acerbo. Aspectu quo Terra parens, correptaque ponti Aequora, quo tactus viro subcanduit aer. Protinus iliuuies terris ignota profanis Exoritur, primus, regi qui sanguine fuso Instituit diuina, sacrasque in montibus aras, Syphilus ostendit turpes per corpus achores Insomnes primus noctes, consulsaque membra Sensit, et a primo traxit cognomina morbus, Syphilidem que ab eo labem dixere coloni.

Thus, according to the conception of Fracastorio, the original plague of syphilis was a visitation of the offended solar deity; just as was that which opens the action of the *Iliad*—the complications of which led to the development of "Achilles' wrath"! So the arrows of the "far darting Apollo" were tipped for the occasion with a special culture of the bacillus of Lustgarten, or of the *Spirochata pallida* of the most recent apostles of bacteriological pathology!

As the author of Syphilis has not confided to his readers the stages of the mental process by which the name of his afflicted hero was evolved, a difficulty has necessarily arisen in regard to the determination of its probable or possible etymology. The very obvious derivation from σ^{in} (with) and ψ^{ij}_{c} (loving) readily suggests itself; and has indeed been, with a very plausible appearance of probability, received with the largest proportion of favor. But a more tortuous origin has been subjected to critical approval—from σ^{in} (hog) and ψ^{ij}_{c} This latter derivation is, of course, sugestive of bestiality, and of the most revolting kind. And although some would fain refer its original suggestion to the limbo of etymological mare's nests, it must be ad-

mitted that this derivation has received ingenious corroboration from some Levantine traditions relating to the association of bestial indulgence with venereal disease. After all, however, although the word has a Greek aspect, and was, accordingly, appropriately placed in a poem constructed after a classical model, it has not a self supporting Greek basis. We should probably, I venture to suggest, be right in regarding its formation as a specimen of poetic license. If either of the above mentioned derivations was really accurate, the resulting word should have been, for the first, Symphilus; for the second, Syophilus.

The origin of the adhesive appellation of morbus gallicus, which became so popular soon after the appearance of the great epidemic, must, of course, be referred to national antipathy. And this was by no means the sole epithet of corresponding derivation. The French gave it the name of morbus neapolitanus from the locus of its supposed nativity. From its traditional Spanish-American importation it received the compound epithet of scabies hispanica. The racial antipathies of dirt throwing patriots transferred the association of the disease and its name to those nationalities which they most detested. Accordingly, the more widely diffused Gallic cognomen was sometimes freely translated into German, Polish, Turkish, etc. although the Turks-for be it remembered that this was the precise period in which they had just come into broad contact with Europeans for the first time in their national history—retaliated with the reproachful epithet of "the Christian disease"! And so all around the ring; another item of evidence corroborative of the unity-without unionof the whole human race!

It is, of course, now well known to all well informed readers that the questions of the antiquity, and cosmopolitan distribution, of the lues venerea have been very frequently, and, for the most part, rather inconclusively discussed, even in general, as well as medical literature. Its modern origin must, I have always thought, strike the skilled pathologist as extremely unlikely. The Biblical writers and classical authors furnish, indeed, some very suggestive allusions. Gleaners in the wealthy harvest of the "higher criticism" know that some contributors have suggested that the "great plagues" with which the Lord plagued Pharaoh and his house, "because of Sarai, Abram's wife," can have been no other than venereal. The most learned and copious of the Jesuitical commentators on the book of Job has discussed at great length the nature of the physical afflictions of that patriarch, and arrived at the opinion that they were truly venereal. Even the agonizing appeal of the inspired Psalmist himself-which followed his first meeting with Bathsheba: "Heal me, O Lord, for my bones are vexed," has aroused the most compromising suspicions. The idea of the association of the lesions of venereal disease with the sufferer of proverbial patience was so firmly rooted in the Italian mind at the time of the outbreak of the historical epidemic of the morbus gallicus that we possess the testimony of the contemporary authority, Fulgentio, to the fact that, even from the beginning, some called the new plague "morbus Sancti Jobi." It should here be mentioned that the names of some other saints became subsequently attached to the disorder; it has been referred to, at various times and by various writers, as the "disease of St. Mevius," "disease of St. Roch," "disease of St. Sementius," etc., etc.

The classical allusions to symptoms and lesions of probably venereal origin are, it must be admitted, comparatively few—even in the least restrained compositions of Juvenal and Martial. But the lines of Catullus, the ancestral fellow citizen of Fracastorio—in which he so ruthlessly attacks the morals of Julius Cæsar, are unquestionably very suggestive:

... maculæ pares utriusque Urbana altero, et illa foramina, Impressæ resident nec eluentur.

And with regard to the existence of venereal disease in mediæval times, the descriptions and allusions of Avicenna, Albucasis, Gulielmus de Saliceto, Lanfranc, John of Gaddesden, etc., etc., are far too definite and pointed to be meant for anything else than groups of lesions very similar, at least, to those included in modern times under the generic appellation of syphilis. We find that in the year 1302 diseases of the genital organs had become so common in Venice that a fine of twenty soldi was imposed-for each individual offense-on every person who was convicted of having been the agent of communication. Towards the close of the same (fourteenth) century, Valesco mentions pustules and ulcers of the penis, which he attributed to *coitus* cum fætida, vel immunda, vel cancrosa mulierc. And the preventive treatment of John of Gaddesden would seem to be almost as prophetic of twentieth century practice as his scarlet treatment of smallpox: Si quis vult membrum ab omni corruptione servare cum recedit a muliere quam suspectam de immunditia, lavat illud cum aqua frigida cum aceto mixta, vel de urina propria interius vel exterius intra præputium.

An expression of opinion which can, as it seems to me, be very plausibly defended in the light of our present knowledge, was advanced by Lane in the pages of the Lancet some fifty-seven years ago: "That the venereal disease had existed for centuries prior to the siege of Naples, not only in South America, but in all parts of the world wherever promiscuous sexual intercourse, unrestrained by religion or by the customs of society, was carried to great excess. . . . that the discovery made at this period consisted simply in the recognition of a peculiar animal poison as the cause of various symptoms affecting different tissues of the human body, at considerable intervals of time, which symptoms had not been previously known to have any relation to each other." And if we add to this extreme probability the fact-not generally discussed in the manuals of surgery, and never, so far as I know. in those of bacteriology—that a more destructive type of venereal disease tends to develop from inoculation with the virus derived from an individual of a remoter race, we have, I venture to think, the double key required to unlock the historical mystery of the rejuvenescence, after the discovery of the New World, of the disease which inspired the epic muse of Hieronimo Fracastorio. The "Swan Alley sore" of the days of Benjamin Travers was immeasurably more-and more rapidly-destructive in its progress than any average London chancre; for it was the fruit of the continuous patronizing culture of the foreign sailors and refugees who were derived from the veriest social and moral dregs of the population of all foreign countries. And the ravages of the "black lion" of the Peninsular War, which caused, in so many cases, the infliction of "that most melancholy of all mutilations" on the elect members of "the flower of England's chivalry," were said at the time to have emanated from the desired person of a magnificently fascinating Spanish beauty who appeared every night on the stage in a state of apparently unsuspicious health. Is not this historic item a replica of the "original" Spanish importation of the lues venerea, rather more than three centuries before?

The view which I have thus ventured to express would, I think, satisfactorily account for the apparent indiscrepancies which appear to cloud and confuse the historical luminosity of the annals of venereal disease. It would reconcile the reports of its previous existence in the Old World, and its unlimited dispersion throughout all the regions thereof, with an abrupt outbreak of a more virulentrejuvenated-type of the disease after the discovery of the New World by Christopher Columbus and his Spanish sailors. We are in possession of thoroughly respectable and apparently unprejudiced testimony to the existence of the venereal disease in various remote regions of the Old World, in the older periods of its history. For instance, the famous French geographer, André Thevet, informs us that the "French disease" was endemic in Africa, throughout the regions bordering on the River Senegal. I. Bonzius, who occupied the post of French physician to the Dutch settlement in the East Indies, states that the same disease was endemic in Amboyna and in the Moluccas. Cloyer, the first physician of the Dutch colony in Java, tells us that the venereal contagion was a natural endemic product of that vast island, and as common and well known there as the quotidian ague. And we are informed by Herrera that Magellan and his crew, in the course of the first circumnavigation of the globe, landed at Timor, an island of the Moluccan Archipelago, where they found a large proportion of the native inhabitants affected with the lesions of the morbus gallicus, although they had been, up to that date, absolutely unacquainted with Europeans of any and every nationality. Astruc, the author of the celebrated classical work on lues venerea, interrogated Père Forneau on the subject of the antiquity of the existence of the venereal disease in the eastern hemisphere-who had long resided among the Chinese and had investigated their customs and penetrated their secrets as only a French Jesuit can. And he was told that the Chinese physicians believed that the disease had existed in their country from the very earliest antiquity-the authors of their oldest books referring to it as an ancient disease. So I ventureand with considerable confidence-to think that the collective statements of these witnesses (a few, only, abstracted from the available multitude) should satisfy all inquirers as to the actual antiquity of the lucs venerea.

Before dismissing the subject of syphilis, and the inventor of the appellation by which the protean disease has long been universally known, I will give an extract from the encyclopædic Bayle, which will, I trust, interest the reader—offering, as it does, an excellent view of the name and fame of the author of the uniquely inspired epic poem and his work; while displaying the genesis of a jealous French growl elicited by the nomenclature of the disease which the author had undertaken to describe in a way so thoroughly unprecedented, and an attempt to retaliate by the substitution of the term Neapolitan for Gallic in the malodorous epithet:

We can hardly forgive Fracastorius for his poem upon that vile distemper, which he ought to have treated only as a physician. If he had acquired a great fortune by curing this terrible effect of debauchery, there would have been something to be said. He might have urged that he displayed his poetic talent upon this Neapolitan Evil to testify his gratitude for the services it had done him; and we might, perhaps, have cited him along with the surgeon who, on being reproved for kneeling down to the statue of Charles VIII, answered that he knew very well what he did, and that there was no saint to be held in greater veneration than a prince who had, though indeed indirectly, enriched him by the distemper which his soldiers had caught at Naples; but, practising always for nothing, he had no such pretence. To be serious, the Syphilis is an incomparable poem; and charmed to admiration the two Scaligers, Sannazarius, and others, the severest judges, Fracastorius would needs compose another poem, and he chose for his subject the adventures of the patriarch Joseph, but the season for making verse was over with him, and he no longer felt that fire and vigour of imagination which he had shown in his fermer years.

Hieronimo Fracastorio died of apoplexy at Casi, near his native city of Verona. His enthusiastic admirer, Julius Cæsar Scaliger—the famous (and usually merciless) critic of that generation—had dubbed him, during life, præstantissimus post Virgilium poetarum, and referred to his Syphilis as the poema divinum. And the same unrivalled hand penned the author's epitaph in the following lines:

Hie situs est Fraeastorius Hieronymus: urna Quem capit, hic cepit pectore cuncta suo. Sidera digessit: revocavit funera, rerum Naturæ, imperii conscius, atque Dei. Aut Heliconiadum fontem sibi sustulit omnem Aut tumulus vertex hic Heliconis erit. 34 YORK STREET.

PRECIPATE REACTIONS WITH LECITHIN, SO-DIUM GLYCOCHOLATE, AND SODIUM TAUROCHOLATE FOR THE DIAGNOSIS OF SYPHILIS.

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Since the discovery by Wassermann (1), with Neisser and Bruck, of the serum reaction for syphilis, based on the complement deviation principle of Bordet, numerous researches have been carried on to determine the identity of the substances contained in the extracts used in the reaction, and also to simplify the test.

As a result of these and partially as a result of experiments based on different lines of reasoning, other reactions have been advanced for the diag-

nosis of syphilis. While the principles on which these reactions depend apparently vary, the result

in each instance consists of a precipitate.

Fornet (2) and Schereschewsky, proceeding from the assumption that the sera of patients with florid syphilis contain precipitinogen, and that the sera of parasyphilitics contain precipitin, found that on bringing together in a test tube carefully so as to form separate strata, the serum of a case of florid syphilis and that of tabes or paresis progressiva, the latter serum to be used pure and in different dilutions with distilled water: namely, 1:5 and 1:10, a precipitate either formed immediately or in the course of two hours, at the line of contact. Plaut, Heuck, and Rossi (3), who tried this method, reported it as inconstant and obtainable with some normal sera.

Michaelis (4) observed in one instance a precipitate to occur after mixing a syphilitic serum with

luetic organ extract.

Klausner (5) reported that on mixing luetic serum with distilled water in the proportion of 0.2 c.c. to 0.7 c.c. a precipitate occurred at room temperature in from one to fifteen hours. Klausner (6) later reported that he obtained the reaction with cases of various other infectious diseases, as pneumonia, typhoid, lupus, etc. (In this communication he advised the proportion of 0.2 c.c. serum and 0.6 c.c. distilled water.)

Our own experience with this reaction has been very unsatisfactory. We found a reaction in a very small proportion of cases we examined. Klausner attributes this to not examining the fresh sera, stating that the serum should be examined shortly after taking blood from the patient. The reaction is said to depend on the precipitation of globulin, which is increased in infections, consequently the reaction is obtainable in other diseases, and is not specific for

syphilis.

Wassermann (7), with Porges and Meier, as had also Landsteiner (8), Müller and Pötzl and Levaditi (9), and Yamanouchi, found that the alcoholic organ extracts contained the active organ substances concerned in the serum reaction for syphilis. Being soluble in alcohol, it was assumed they were lipoids. Therefore, Porges and Meier experimented with a lecithin suspension, substituting the same for organ extract in the serum reaction, and obtained the reaction with luetic sera. found similar results with solutions of sodium glycocholate and taurocholate. Porges and Meier (10) observed that on mixing a 0.2 per cent. suspension of lecithin with luetic sera in some cases a precipitate formed after standing for fifteen to twenty hours at room temperature, or several hours in an incubator. Porges (10) and Meier found the lecithin reaction in one hundred cases of lues, on which they reported, to coincide closely with the results of the serum reaction for syphilis.

From the work of Fritz and Kren (11), Noble

From the work of Fritz and Kren (II), Noble and Arzt (I2), Eisler (I3), Weil and Braun (I4), etc., it soon became evident that the lecithin reaction was obtained with the sera of patients suffering from other infectious diseases, as tuberculosis, in about as large proportion as in syphilis, also in

malignant growths.

Fritz and Kren reported more favorable results

with sodium glycocholate, obtaining positive reactions in only eighteen per cent. of the tuberculosis cases they examined.

Elias (15), Neubauer, Porges, and Salomon have recently reported the results of their work with sodium glycocholate, controlled by the serum reaction. They obtained fifty per cent. of positive reactions with the serum test, and forty per cent. with the glycocholate of sodium. This comparatively small percentage is due to the fact that questionable and latent cases of syphilis made up a good share of the patients examined. Among their seventy-seven control cases, there were eight positive with the precipitate, and fourteen with the serum reactions. They expressed doubt as to some of the control patients that gave a positive test, being free from syphilis.

Prior to the appearance of this latter report we had under way a series of examinations of syphilitic, parasyphilitic, and control cases, in which we used with few exceptions for each serum the following tests: I, The serum reaction. 2, The precipitate tests, with, a, lecithin, b, sodium glycocho-

late, and, c, sodium taurocholate.

The first reported results with sodium taurocholate as a precipitating reagent for syphilitic and parasyphilitic sera, are, so far as we can determine, contained in this paper. Levaditi (9) and Yamanouchi used this salt with satisfactory results as a substitute for syphilitic liver extract in the serum reaction.

The first of these tests, namely, the serum reaction for syphilis, was described by Butler in the Journal of the American Medical Association, September 5, 1908, to which the reader is referred for information concerning it. The performance of the precipitate reactions are comparatively easy and unattended with the many difficulties confronting one in making the complement deviation test.

The precipitate test is made by mixing equal quantities of the serum to be examined, and the precipitating reagent in a test tube, and allowing them to stand at room temperature for from fifteen to twenty hours. If the reaction was positive, a precipitate will have formed and collected at the top of the fluid, and on slightly tapping the tube it will descend in flocculi or whitish clouds from the surface. Vigorous shaking of the tube often diffuses the precipitate, rendering the fluid turbid. Turbidity of the fluid alone is not diagnostic. was noticed that in a few control cases of acute infections a precipitate formed and settled at the bottom of the tube and became evident only on shaking. The reagents used in the precipitate tests consist of (1) a 0.2 per cent. suspension of lecithin, made by adding one gramme of lecithin to enough warm alcohol to dissolve it and then adding enough distilled water to make up 500 c.c.; (2) sodium glycocholate; and (3) sodium taurocholate solutions made in the strength of one per cent. in distilled water. The latter are perfectly clear solutions when made, but become turbid on standing twenty-four hours, when they are unfit for use. They, as well as the lecithin suspension, should be made immediately before using. Elias (15), Neubauer, Porges, and Salomon consider much depends on the preparation of lecithin used for the test.

They recommend Kaulbaum's lecithin, and attribute some of the discrepancies with this reaction to using other makes of the preparation. We have used Merck's preparation of lecithin, and glycocho-

late and taurocholate of sodium.

The blood is either taken from a vein by a hypodermic needle of good size calibre, or from the finger, which should be constricted by a bandage and pricked with a fine pointed lancet. It is collected in a sterile test tube. The blood may be centrifuged at once, or allowed to stand until the serum separates, which should be removed by a pipette, and if not clear should be centrifuged and the clear serum only used. A turbid serum is not suitable for the reaction.

Some authors have used only sera which has not been inactivated (inactive serum is serum that has been heated to 56° C. for half an hour) in their experiments with the precipitate reactions. Elias (15), Neubauer, Porges, and Salomon state that the greater number of their tests were made with active sera, but thought that if they had used the inactivated sera, as they had in the last sixty-eight of their cases, better results would have been obtained. In view of this uncertainty as to the state in which the sera might best be used for the reactions, we divided each serum into two portions, inactivating one and leaving the other active, and made each precipitate test with the active and inactive sera. with few exceptions, of all cases that we examined in order that we might compare their respective merits. We used from 0.4 c.c. to 0.8 c.c. of serum in each of these reactions, depending on the quantity of serum available.

We examined (see colume I of the table) the sera of seventy-four cases, thirty-eight of these were made up of patients with primary, secondary, and tertiary syphilis, visceral syphilis, and parasyphilitics. The remainder were controls, the diagnoses of which are mentioned in the table. The results of the several reactions for each serum are indicated in parallel columns. In several instances there was insufficient serum for all the tests. These are indicated by ciphers. The plus and minus signs mean positive and negative respectively, and refer

to the result of the reactions.

In Table 2 is given the per cent. of positive reactions obtained by the different tests for the first, second, and third stages of syphilis, and for visceral syphilis and parasyphilitics. Under "Total I" is given the percentage of positive reactions for all cases of manifest syphilis with the serum and precipitate reactions, and under "Total 2" the percentage of positive reactions with manifest and with viscereal syphilis and parasyphilitics is pre-

sented.

In the examination of control sera, it was found that four of the patients with tuberculosis, all of which were in the third stage of the disease, gave a positive "serum reaction" for syphilis. Investigation of these cases revealed the fact that all four had syphilis. One case of typhoid and one of pneumonia gave a slight reaction with this test when guinea pig heart was used as antigen. On subsequent examination, of the same sera during convalescence of patients, on using syphilitic liver extract as antigen, they were found negative. Sodium

glycocholate gave a positive reaction with the active serum of one and inactivated serum of another case of typhoid fever, and of one case of tuberculosis that had syphilis. The active and inactive sera of one typhoid proved positive with sodium taurocholate, also the active serum of another and the inactive serum of a third typhoid case proved positive; also one tuberculous case that was syphilitic.

Lecithin gave a positive reaction with the active and inactive sera of sixteen and seventeen control cases respectively, and three cases of tuberculosis with syphilis. Five of the active and six of the inactivated sera of eight cases of carcinoma gave, a

positive reaction with lecithin.

Weil (14) and Braun assumed, on the basis of a number of positive results obtained by lecithin with the blood serum of cases of malignant growths, that these positive reactions with lecithin supported the bacteriological theory of malignant tumors. We obtained a positive reaction with a 0.2 per cent. suspension of lecithin in a case of syphilophobia that was negative to all other reactions. Our results in carcinoma cases are similar to those of Stumme (16), who found eight of ten cases of cancer positive with the lecithin test. One of our cases of carcinoma of the breast that had not ulcerated gave a positive reaction. The deductions, as made by Weil and Braun, seem unwarranted from our experience with the lecithin reaction.

In the results obtained by the various tests with active syphilis, parasyphilis, etc., it will be noted that ninety-three per cent. of the cases of active syphilis gave a positive reaction with the complement deviation test. In the same cases sodium glycocholate gave a positive reaction in fifty-seven per cent. with the active sera, and seventy-nine per cent. with the inactivated sera; sodium taurocholate in fifty-five per cent. with the active sera and sixty-one per cent. with the inactivated sera; lecihin, under the same circumstances, showing nine-ty-one per cent. and ninety-six per cent. of positive

reactions.

In the viscereal and parasyphilitic cases the serum reaction showed up best with seventy-seven per cent. of positive results, while the glycocholate was positive in twenty-one per cent. and thirtythree per cent., the taurocholate in thirty-three per cent. and fifty-five per cent., and lecithin in sixtysix per cent. and fifty-five per cent. with the active and inactivated sera, respectively. The results in the parasyphilitic cases reduced considerably the total number of positive results with the glycocholate in contrast to the serum reaction, which gave ninety per cent. of positive reactions for all cases of syphilis and parasyphilis examined, the glycocholate showing forty-eight and sixty-eight, the taurocholate fifty and sixty, and the lecithin seventysix and eighty-five per cent. with the active and inactivated sera respectively.

Summary.—The serum reaction surpasses in the percentage of positive results, and in reliability the precipitate reactions with lecithin, sodium glycocholate, and sodium taurocholate for syphilis and parasyphilis. The glycocholate and taurocholate of sodium, especially the former, show a large percentage of positive results in manifest syphilis and a remarkably small percentage of positive reactions

in control sera. Of these reagents the taurocholate gives the best results, in positive reactions with

parasyphilitic sera.

While the lecithin test compares favorably with the serum reaction in positive results in syphilitic and parasyphilitic cases, fully fifty per cent. of the control cases proved positive with lecithin, thus rendering it absolutely unreliable and definitely

nonspecific for syphilis.

The results obtained in the control cases with active and inactivated sera were practically alike with glycocholate and taurochalate of sodium, but in the syphilitic and parasyphilitic cases the inactivated sera gave the greatest number of positive results by thirty per cent. with the glycocholate and by seventeen per cent. with the taurocholate of sodium. This indicates that the results of the reaction in nonsyphilitic patients are equally reliable with either the active or inactivated sera, but a positive reaction is far more frequently obtained in syphilitic and parasyphilitic patients with the inactivated sera.

The glycocholate and taurocholate reactions will have to be tried out by many investigators before their real value in the diagnosis of syphilis can be determined. The results of our examinations, however, were especially satisfactory with these reagents in view of the few positive reactions obtained with these salts in the controls examined.

PRECIPITATE REACTIONS.

| | Serum, | Glycoc | holate, | Tauro | cholate, | Leci | ithin, |
|--------------------------------------|-----------|----------|-----------|---------|-----------|---------|-----------|
| Syphilis. Primary stage. | reaction. | active. | inactive. | active. | inactive. | active. | inactive. |
| Case I | | + | + | + | ++ | 0 | + |
| Case III | + | + | + | + | # | + | + |
| Case IV | | + | + | + | + | + | + |
| Case V | + | <u> </u> | + | + | <u> </u> | | 4- |
| Case VI | + | + | + | + | + | + | -1- |
| Secondary stage. | | | | | | | |
| Case VII | . + | 0 | +- | 0 | 0 | 0 | 0 |
| Case IX | | _ | _ | _ | | + | + |
| Case X | ‡ | + | - | _ | + | + | -1- |
| Case XI | | + | 4 | + | + | + | · [- |
| Case XII | | | + | , | + | 15 | 0 |
| Case XIII | | + | + | + | + | + | 0 |
| Case XIV | + | + | + | + | _ | + | + |
| Case XV | + | + | + | _ | | + | + |
| Case XVI | . + | _ | + | + | + | + | -1- |
| Tertiary stage. | . + | _ | + | + | + | + | + |
| Case XVIII | . + | | + | _ | + | + | + |
| Case XIX | . + | + | + | + | + | + | + |
| Case XX | | | | | | 0 | + |
| Case XXI | | + | + | + | + | + | 0 |
| Case XXII | . + | _ | | 0 | | 0 | + |
| Case XXIII | . + | | | | _ | - | +- |
| Case XXIV | + | + | + | _ | - | + | |
| Case XXVI | | + | ++ | + | + | + | + |
| Case XXVII | . + | | | T | <u> </u> | + | T |
| Case XXVIII | . + | | + | | _ | + | 0 |
| Case XXIX (Viscer | al | | | | | | |
| syphilis and parasyp | h- | | | | | | |
| ilis | . + | + | + | _ | _ | + | + |
| Case XXX (Paresis) Case XXXI (Tabes) | + | _ | _ | _ | + | _ | + |
| Case XXXII (Cerebr | · T | _ | _ | | 1.00.0 | | |
| spinal syphilis) | | ****** | - | _ | _ | | |
| Case XXXIII (Cerebr | 0+ | | | | 7 | | |
| spinal syphilis) | . + | + | + | _ | **** | _ | _ |
| Case XXXIV (Cirrhos | is | | | | | | |
| of liver) | | + | + | + | + | Morale | -1- |
| Case XXXV (Tabes) Case XXXVI (Tabes) | . + | | _ | + | + | 4- | + |
| Case XXXVII (Tabes) | | | | | _ | + | + |
| Case XXXVIII (My | | | _ | | | - | |
| carditis) | | _ | + | + | + | + | + |
| | | | | | | | |

| CONTROLS. | | | | | | | |
|---|------|------------|-------|-----|-------|-----|-----|
| Case XXXIX (Blastomy- | | | | | | | |
| cosis) | _ | 0 | _ | 0 | | 0 | |
| Case XL (Blastomycosis) | | _ | - | _ | - | | , |
| Case XI.I (Tuberculosis) | | _ | | | _ | | |
| Case XLII (Tuberculo- | | | | | | | |
| sis) | - | _ | | | _ | _ | - |
| Case XLIII (Tuberculo- | | | | | | | |
| sis) | - | _ | _ | | | + | |
| Case XLIV (Tuberculo- | | | | | | | |
| sis, syphilis) Case XLV (Tuberculosis, | + | ***** | | - | _ | + | |
| syphilis) | + | | | | | + | |
| Case XLVI (Tuberculo- | -1 | | | | | 7 | |
| lis, syphilis) | + | -+- | Money | + | | - | |
| Case XLVII (Tuberculo- | | | | | | | |
| sis, syphilis) | + | | + | _ | + | _ | _ |
| Case XLVIII (Tubercu- | | | | | | | |
| losis, syphilis) | _ | | | _ | | | - |
| Case IXL (Tuberculosis) | | - | | _ | | + | - |
| Case L (Tuberculosis) | _ | | _ | | ***** | + | - |
| Case LI (Tuberculosis). | - | | | _ | _ | 0 | |
| Case LII (Tuberculosis) | | | - | _ | _ | _ | |
| Case LIII (Typhoid) Case LIV (Typhoid) | | | _ | _ | | | - |
| Case LV (Typhoid) | _ | | _ | + | _ | _ | |
| Case LVI (Typhoid) | _ | | | | _ | + | + |
| Case LVII (Typhoid) | | - | | | _ | _ | - |
| Case LVIII (Typhoid). | | | + | | + | | - |
| Case LIX (Typhoid) Case LX (Lobar pneu- | | + | | | + | + | - |
| monia) | _ | | | _ | | + | - |
| Case LXI (Lobar pneu- | | | | | | -1 | |
| monia) | | | _ | _ | | _ | _ |
| Case LXII (Gonorrhœa) | | - | - | - | _ | + | _ |
| Case LXIII (Gonorrhœa) | _ | _ | - | _ | - | 0 | - |
| Case LXIV (Gonorrhæa) Case LXV (Syphilopho- | _ | | | | _ | -1- | |
| bia) | | | | | _ | + | _ |
| Case LXVI (Hemiplegia) | | ****** | - | | | 1 | |
| Case LXVII (Cancer of | | | | | | | |
| neck) | | | | _ | | | - |
| Case LXVIII (cancer of | | | | | | | |
| Case LXIX (Cancer of | _ | _ | | _ | _ | + | 7 |
| breast) | _ | | | _ | _ | + | + |
| Case LXX (Cancer of | | | | | | ı | - ' |
| breast) | _ | Million of | _ | | | - | + |
| Case LXXI (Cancer of | | | | | | | |
| case LXXII (Cancer of | _ | | _ | _ | | _ | + |
| œsophagus) | | | | | | | |
| Case LXXIII (Cancer of | | _ | _ | - | | + | 7 |
| stomach) | _ | _ | | | | + | _ |
| Case LXXIV (Cancer of | | | | | | | |
| stomach) | | _ | _ | _ | | + | + |
| PRECIE | ITAT | E RE | ACTIO | INS | | | |
| | | | | | | | |

PRECIPITATE REACTIONS

| INLCI | LIIA | 1 12 1/1 | CACII | OND. | | | |
|---------------------------|--------|----------|-------|------|-----|-----|-----|
| Percentage of positive re | esults | with- | - | | | | |
| First | 100 | 83 | 100 | 100 | 100 | 80 | 100 |
| Second | 91 | 50 | 81 | 50 | 60 | 100 | 87 |
| Third | 91 | 50 | 66 | 36 | 52 | 90 | 100 |
| parasyphilis | 77 | 22 | 33 | 33 | 55 | 66 | 5.5 |
| Total percentage for | 93 | 57 | 79 | 55 | 61 | 91 | 96 |
| syphilis and parasyphilis | 90 | 48 | 68 | 50 | 60 | 76 | 85 |

We wish to express our thanks to Dr. W. A. Pusey, Dr. S. Kuh, Dr. G. W. Hall, and Dr. P. Bassoe for the courtesy of affording their material for examination.

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THE POPULAR LECTURE IN THE CRUSADE AGAINST TUBERCULOSIS*.

By S. Adolphus Knopf, M. D., New York,

Professor of Phthisiotherapy at the Postgraduate Medical School and Hospital; Associate Director of the Chine for Pulmonary Diseases of the Health Department; Visiting Physician to the Riverside Sanatorium for Consumptives of the City of New York.

Valuable as the distribution of literature always has been and will be to enlighten the people on subjects of hygiene and the prevention of disease and although the interesting and instructive leaflets on the prevention of tuberculosis have proved to be of incalculable benefit, the spoken word, the verbal instruction to the individual, or the popular lecture to the masses, has a most important mission to fulfill

in this crusade against tuberculosis.

While it is by no means essential that such a lecture should always be delivered by a physician, in smaller communities, where the lecturer is likely to be personally known to a large number of the audience, the local physician's words will be listened to, perhaps, with greater attention and respect than those of a layman. If there is a local antituberculosis committee the lecturer should be a member of it, and if, as is of course desirable, several physicians belong to the association, they should alternate

in lecturing. A public hall, schoolhouse, or church, easily accessible, well lighted, and well ventilated, is of course the most suitable place for this purpose. It will not do to lecture on tuberculosis, and on the value of light and pure air, in a gloomy, badly ventilated hall. The lecture must be free to all and delivered at a time when the masses can come to listen. The titles of the lectures should not be gruesome; they should be dignified, encouraging, and inviting, for example like the following, which the writer has used with success: Our Duties toward the Consumptive Poor. The Tuberculosis Problem and How It May Be Solved. The Prevention of Tuberculosis. The Joyful Message of the Preventability and Curability of Tuberculosis. Pulmonary Consumption and the Possibilities of Its Eradication through the Combined Action of a Wise Government, Well Trained Physicians, and an Intelligent People. The Victory over the Great White Plague. The Social and Humanitarian Aspects of the Tuberculosis Problem. The Duties of the Government and the Individual in the Combat of Tuberculosis. The Successful Warfare against Tuberculosis.

If the audience is to be composed of women or schoolteachers, it is well to select titles similar to the following: Women's Duty in the Fight against Tuberculosis. The Teacher's Part in the Antituberculosis Crusade. Or if the audience is composed of laborers, it is well to use a title similar to this: What Can Workingmen Do to Fight Tuberculosis among Themselves?

The handbills, circulars, or cards inviting a general or a special public to attend a lecture should be attractive and to the point. If it can be an-

COLUMBUS BOARD OF TRADE.

Governor Herrick will preside and introduce the speaker. NO ADMISSION CHARGED. You are cordially invited to attend, and bring your friends.

Very respectfully, JOHN Y. BASSELL R. GROSVENOR HUTCHINS

ATTENTION! CLOTHING WORKERS!

If you wish to learn how to guard against the dreadful dis-ease of consumption which is very common among the tailors and which can be easily pre-vented, come to the

MEETING which will be held on SUNDAY EVE., MARCH 13th

EDUCATIONAL ALLIANCE HALL,

Jefferson St., corner East Broadway.
Professor Jacobi, Dr. David Blaustein, Mr. Joseph Barondess,
Mr. Paul Kennaday, and other prominent speakers
will address the meeting.

Mr. Henry White will preside.

ALL ARE WELCOME.

Under the auspices of the United Garment Workers of America, and The Committee on the Prevention of Tuberculosis.

CONSUMPTION.

WILL YOU HELP TO DRIVE THE DISEASE FROM OUR CITY?

WHY? LEARN

HOW?

RELIEF AND

RT ASSOCIATION FOR THE RE PREVENTION OF TUBERCULOSIS NIWPORI, RHODI, ISLAND.

Do you want to know how consumption is cured? Attend the free illustrated lectures on the subject which will soon be amounced in the papers.

Are you interested, but cannot attend the lecture? Write for further information to the

T ASSOCIATION FOR THE RELI PREVENTION OF TUBERCULOSIS, NEWPORT RELIEF AND

290 THAMES SERE (over Aquidneck Bank) Room 50, Tell Your Friends to Come to The Lectures.

nounced that a prominent officer or a particularly honored citizen or preacher of the city or State will preside over the meeting, it will add to the prestige of the movement and be likely to attract a larger audience.

Advent delicated before Section V. Hygiene, Social, Industrial and Leonomic Apoets of Tuberculous of the Fourth International Congress on Tuberculosis, Washington, D. C., October 1,

I have given here three examples of invitation cards which should be issued. They are a card of invitation issued by the Columbus Board of Trade, a handbill inviting the clothing workers to a lecture on the prevention of tuberculosis, issued by the United Garment Workers of America and the Committee on the Prevention of Tuberculosis of the Charity Organization Society, and an excellent and attractive circular issued by the Newport Association for the Relief and Prevention of Tuberculosis.

It has sometimes been the experience of the writer, as an occasional lecturer before public audiences, to be requested by the committee on arrangement to avoid the word tuberculosis or consumption in the title of his lecture. It was thought by the committee that too suggestive titles might keep a number of sensitive people away. Such titles as, for example: How May the Health of Our Community be Improved? A Health Problem of Interest to Everybody. Health and Prosperity and How It May be Furthered, might then be used.

In a public lecture on tuberculosis it is well to point out strongly the economic loss accruing to a community which does not take care of its consumptive poor at the right time and at the right place, when there is the best possible chance for recovery, but wait until it is too late and then cares for them at the wrong place (county hospital or poor farm). It is best to make such calculations with direct reference to the locality in which the lecture is delivered. Thus, for example, in my own city and State of New York I have been in the habit of giving to my lay audience the following convincing figures: It is estimated that there are in this State about 50,000 tuberculous invalids. Of these probably one fifth belong to that class of patients which sooner or later become a burden to the community. These 10,000 consumptives, absolutely poor, will sooner or later have to be taken care of by the public general hospitals. While they may not stay in one hospital twelve months continually. they will certainly occupy a bed in one or other of the public institutions for that length of time before they die. According to a recent report by the public charity hospitals of New York city the average cost per patient per day in the general hospital is Thus, the cost to the commonwealth will be \$4,234,000 per year for caring for the 10,000 consumptives. What would be the expense if they were taken care of in a sanatorium? Experience in this country has demonstrated that the maintenance of incipient cases in well conducted sanatoria can easily be carried out for \$1 per day. If these 10,000 persons could be sent to a sanatorium in time, at least 6,000 of them would be lastingly cured after a maximum sojourn of 250 days, at an average expense of \$250 per caput. Thus for \$1,500,000 6,000 persons could be made again breadwinners and useful citizens. If the remaining 4,000 invalids were kept in the sanatorium one year before they died it would cost \$1,460,000. Thus, taking away from the tenement district 10,000 consumptives, curing more than half of them, caring for the other half, and destroying 10,000 foci of infection will cost \$2,960,000, when not taking care of them in the earlier stages of this disease they will probably

all die, since this 10,000 represents the absolutely poor, who now live under most unhygienic conditions-they will have infected a perhaps equally large or larger number of individuals living with .them, but before dying they will have cost the community \$4,234,000.

Another valuable argument which may well be presented in any public lecture is that relating to the loss which accrues to a community by failing to prevent its people from becoming tuberculous. Besides the loss and sorrow which are naturally felt by the individual and family, the economic loss from tuberculosis sustained by the commonwealth is tremendous. Dr. Thomas Darlington, the health commissioner of New York city, in speaking of the cost of tuberculosis in that city, declares in a recent publication: "Estimating the value of a single life at \$1,500-not necessarily a high estimate -and taking only the lives between sixteen and forty-five years, the loss of life in that city alone from tuberculosis amounts to the startling sum of \$23,000,000 annually."

It should never be forgotten in a public lecture that much good may be accomplished by a dignified protest against the use of patent medicines and the dangerous and nefarious trade of quacks who advertise "sure consumption cures" alleging some secret method or remedy. A very valuable pamphlet has been issued by our Tuberculosis Committee and the New York Department of Health on so called consumption cures.

I take pleasure in reproducing it here for those who wish to use it for their propaganda.

CONSUMPTION "CURES."

The consumptive is the ideal victim of the quack, charlatan, and vender of patent medicines. Consumptives spend more money on patent medicines and special modes of treatment than any other class of persons who are really ill. The amount of money thus thrown away is almost as great as that obtained from fancied or real sufferers from catarrh or dyspepsia. Every year sees new remedies and methods of treatment advertised, only to be replaced later by others; of treatment advertised, only to be replaced later by others; and almost all these "cures," if well advertised for a time, pay their originators well. All such advertised special "cures" and methods of treatment are practically worthless, and many of them harmful. As Samuel Hopkins Adams says in his article on The Great American Fraud in Collier's Weekly, "Every advertisement of a consumption cure cloaks a swindle."

There are a number of reasons why the consumptive is such an easy prey to quacks and charlatans. Consumption is not a disease of rapid progress as compared to other illnesses; even the cases of "galloping consumption" rarely terminate in less than three months, and the average case of consumption lasts at least two or three years. There is consumption to the consumption that the consumption is the consumption to the consumption to look about him to graph ample time for the consumptive to look about him, to grasp at any straws in the way of assistance. The consumptive is, by a wise provision of Providence, hopeful—and this brings with it credulity. Many consumptives have not the time or money to undergo sanatorium treatment, or to provide themselves with the special diet so often necessary. and naturally lend a willing ear to the assertions of the quack, who promises to cure them rapidly, cheaply, and without keeping them from their work. In consumption there is not the prostration and dulling of the senses that so frequently accompanies other grave diseases. The consumptive has time to realize all that life means, and to desire ever more ardently and keenly to live

Consumptive "cures" may be classified as follows:

I. Patent Cough Medicines. These almost without exception contain either considerable amounts of opium or morphine, or else alcohol. Both drugs are bad for the consumptive; they give only temporary relief and leave him in a worse state than before.

2. Special Remedies for Consumption. These consist

of preparations of vegetable and mineral substances, usually said to be very rare or to be found only in distant parts of the world. They are practically without any effect whatsoever as regards curing the disease.

3. Serum Treatment. Based on the remarkable value of antitoxic serum for diphtheria, many sera are advertised to cure consumption. So far no serum having any curative effect has been discovered.

Special Diet. Curative influence is asserted by some of the quacks for special kinds of food—all meat or no meat, beef blood, onions, olives, etc.

5. Electricity, X Rays, Light, and Cabinet Cures. These various methods have no special value in consumption. Some of the frauds allege by their means to render the absorption of specific medicines more rapid and thus more efficacious.

6. Plasters, Poultices, and Other External Applications. While the pain of a tuberculous pleurisy may be relieved by the application of a mustard plaster, yet such procedures have no effect on the disease of the lungs. To produce ulcers of the chest wall by means of blistering plasters ters is a useless, brutal mode of treatment, and to state that the discharge ("corruption") from such ulcers comes from the lungs is a deliberate falsehood, uttered knowingly. Such procedures are harmful, as they exhaust the strength of the patient.

THERE IS NO SPECIFIC TREATMENT FOR CON-SUMPTION. A SUFFICIENT AMOUNT OF PROPER FOOD, WITH PLENTY OF FRESH AIR AND REST, CONSTITUTE THE ESSENTIAL BASIS OF ALL SUCCESSFUL METHODS OF TREATMENT.

Realizing the truth of the above statements, the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the City of New York has passed the following resolutions:

Whereas, It has come to the knowledge of the Committee on the Prevention of Tuberculosis of the Charity Organization Society that many so called specific medicines and special methods of cure for pulmonary tuberculosis have been and are exploited and widely advertised; and

Whereas, In our opinion there is no specific medicine for this disease known and the so called cures and specific and special methods of treatment (by electricity, x rays, electric light treatment, "diet" cures, plasters, serums, etc.) widely advertised in the daily papers are in the opinion of the Committee, without value and do not at all justify the extravagant claims made for them, and serve chiefly to enrich their promoters at the expense of the poor and frequent ignorant or credulous consumptive: therefore

Resolved, That a public announcement be made that it is the unanimous opinion of the members of this Committee that there exists no specific medicine for the treatment of pulmonary tuberculosis, and that no cure can be expected from any kind of advertised medicine or method, but only from a sufficient supply of pure air, nourishing food, needed rest, attention to the hygiene of the skin, and such medication as appears from time to time required, in the judgment of a physician.

The above mentioned Committee is composed of the following physicians and laymen, all of whom are especially interested in the subject of tuberculosis, its prevention and

Such or a similar leaflet should circulate in every community and the names of prominent physicians should be attached to it. I am convinced that such a circular would do much toward convincing the people that all the so called sure and quick consumption cures advertised as such are invariably based on false claims.

To say a few words on the abuse of alcohol, to denounce the idea that it is a valuable preventative in tuberculosis or an estimable means to cure, should be the duty of every physician. In doing so he need not make his lecture a fanatical temperance

talk. Every physician is justified to state that alcohol is no preventative, that the abuse of it predisposes to tuberculosis, and that in this disease alcoholic beverages should be considered medicine and not be taken except by order of the physician.

The lecture itself should, of course, be practical and to the point, avoiding too technical and too scientific expressions. It is not always easy to speak the language of science in the language of the people, but one should strive to use plain, simple words, and make himself well understood. While a dignified and earnest manner will always appeal to an intelligent audience, the lecture should be enlivened with some bright, cheerful suggestions, and an occasional witty remark may find its place. Even the citation of suitable poetry may be à propos, as, for example, the beautiful words of Emerson:

"God lent his creatures light and air, And water open to the skies, Man locks him in a stifling lair, And wonders why his brother dies."

If the lecturer is able to speak extemporaneously, it is always the most appealing and successful way to reach a popular audience. But whether the address is extemporaneous or read from manuscript, it should not exceed three quarters of an hour in length. The remaining quarter of an hour should, whenever possible, be devoted to showing stereopticon views, illustrating devices for the prevention and treatment of tuberculosis; such as sputum cups, reclining chairs, window tents, chair half tents, sleeping tents, sleeping shacks, leantos, sanatoria, and special hospitals.

While even the illustrations of bacilli may be useful and interesting ,it hardly seems wise to show a popular audience reproductions of pathological specimens, such as decayed lungs, etc.

No public lecture on tuberculosis is ever complete or will ever fulfill its mission without an ardent remonstrance against phthisiophobia-that insane, exaggerated fear of the presence of consumptives, as such. The lecturer must have, of course, previously explained the simple measures by which the consumptive may protect others from infection and himself from reinfection, and thus have shown the audience the folly of individual phthisiophobia. In a popular lecture it should be declared emphatically that the clean, conscientious consumptive who takes care of his expectoration is no more a danger to his fellowmen than any healthy citizen, and that he should be treated with the utmost kindness and consideration.

Those who as official authorities or private citizens oppose the establishment of sanatoria and special hospitals for consumptives must be convinced of their error. They should be shown the great educational value of a sanatorium for consumptives and should be told that any patient who has been in a sanatorium, even if only for a few months, must of necessity, on account of the training he will have received, become a hygienic factor in the community to which he may return improved or cured. If this simple assurance does not suffice to convert them from their unjustified prejudice against the establishment of a tuberculosis institution, they should be shown the statistics of this country and Europe, which prove that the mortality from tuberculosis

among the inhabitants of villages and towns where sanatoria for the tuberculous are situated has always been considerably reduced after the establishment of these institutions. The cleanly and sanitary habits prevalent at the institutions involuntarily imitated by the villagers have resulted in diminishing consumption in their own midst. Thus, the well conducted and well equipped sanatorium for consumptives serves not only as an institution to cure, but also as an institution to prevent the spread of consumption. It can even be demonstrated that the prosperity of the community which harbors a sanatorium for the consumptive poor has always been improved thereby. By the cures accomplished in such a sanatorium, wealthy invalids are almost invariably attracted to the locality.

But besides the individual or official fear of the presence of the consumptive on account of his disease, there is another prejudice, based on his alleged different and peculiar mentality (egotism, selfishness, immorality, etc.). People forget that among the consumptive invalids of the past and the present there have been and are some of the best types of man and womanhood, useful, noble, and valuable citizens, humanitarians, scientists, and philanthro-

pists.

Some years ago I had occasion to address a group of physicians and jurists, and chose for my title A Plea for Justice to the Consumptives. preparing the address I had collected a number of opinions of the moral standard and mental attitude of the average consumptive. I received replies to my inquiries from such men as Biggs, Bowditch, Bonney, E. D. Fisher, Flick, Janeway, Klebs, Osler, Otis, Trudeau, and they all concurred in the opinion that the moral and mental state of the average tuberculous patient is equal to that of any well person or patient afflicted with other diseases. Dr. Trudeau, to whom we all look up as the American physician who has, perhaps, the largest individual experience with consumptives of all classes of society and in all stages of the disease, wrote me the following in direct reply to the statement which a physician had made in the medical press' to the effect that in the average consumptive psychasthenia, the loss of self control and the rise of brutal selfishness combined to distort the clearness of the patient's ethical perception:

"I have never noticed any greater tendency to immorality or crime among consumptives than is to be found in the average of the human race, as far as it has come under my observation. On the contrary, I have seen all the finer traits of human nature developed to the fullest extent by the burdens which chronic and fatal illness, often slow in its progress, adds to the sum total of what men and women usually have to endure in life. I have seen certainly more patience, courage, self denial, and unselfish devotion to others in consumptives than I have noticed in the majority of healthy human be-Indeed, the sanatorium work never could have been carried on were it not for the self sacrificing devotion to the suffering of others shown by my associates, the nurses, and even the employees at the sanatorium, most of them having come here

¹Saxe: "Psychical Relation of Tuberculosis in Fact and Fiction." New York Medical Journal, August 1 and 8, 1903. originally because suffering from tuberculous disease. History is full of instances which prove that tuberculosis does not interfere with the development to the highest degree of the intellectual, the moral, and the ethical sides of man's nature."

When one will have read to the audience such beautiful lines as these of Dr. Trudeau, the lecturer may be sure to have the sympathy of his hearers, and a large stride toward overcoming phthisiophobia will have been made. If the lecture, which is to be delivered, has for its purpose to solicit financial help it is well, besides presenting the figures already referred to showing the advantages of treating the patient at the right time and at the right place, to relate one or two personal experiences from the lecturer's own professional life showing the need of timely treatment and timely help.

In conclusion, I should like to give to the public lecturer on tuberculosis one point of advice. I do this as the result of personal or rather painful ex-

perience.

The public press is a most powerful factor and indispensable in our crusade against tuberculosis, and I personally deeply appreciate its invaluable cooperation; but at times there is a tendency among the young reporters to try to find something sensational in the lectures they are sent to report, or they misunderstand the lecturer, and the result is a distortion of the meaning in the printed article of the ideas the lecturer had tried to convey. To guard against this there are two remedies: Either to hand a manuscript or a synopsis of the address to the reporter or to ask the newspaper to submit to you the proof before publication. With these precautions you may avoid erroneous and sensational statements and a good deal of annoyance.

Every lecturer will thank his hearers for the close and careful attention they have given him. even if the attention could have been a little closer. But when lecturing on tuberculosis one should never fail to announce it personally, or have it announced by the chairman, that at the close of the address the lecturer will be glad to answer questions on points which may not have been under-

stood or not made sufficiently clear.

If the lecturer is a physician, he will be almost invariably asked questions as to the best methods to pursue in individual cases, what kind of medicine to take for a certain symptom, and so on. Such questioning is pardonable, because it may be human nature to try on such an occasion to get medical advice for nothing. The lecturing physician will then have to use the necessary tact to avoid answering directly, and will refer the patients to their family physicians, or if they have none, to any physician of their choice.

It is not always a grateful task for a medical man to give a popular lecture, and the public does not always appreciate the time and sacrifice it involves to the busy practitioner. Some people may even be so ungracious as to consider it a means of advertising. All this one must forget and find his reward in the feeling that he has done his duty. lived up to his calling, and been a true doctor—which means a teacher.

16 WEST NINETY-FIFTH STREET.

THE EXPECTANT TREATMENT OF PULMONARY TUBERCULOSIS-A CONTRIBUTION FROM ORTHOPÆDIC SURGERY.*

By Adoniram B. Judson, M. D., New York.

A letter from an old schoolmate reads as follows: "I know of only two, yourself and Keen, of our class (Brown University, 1859), who have advanced our knowledge of the processes of repair of human organisms. The rest of us have tried to keep up with the procession, but have added noth-" The Keen referred to is Dr. W. W. Keen, of Philadelphia. The writer of the letter, Dr. Charles H. Perry, of Worcester, Mass., gave me a great compliment in placing my name with that of the renowned surgeon. Perry never lost the frank and generous impulses which endeared him to his classmates. He was eminent among the practitioners of New England, men who daily add lustre to our profession, modestly unconscious of the fact that a good physician occupies about the most honorable position attainable by any one. On the other hand, the pardonable ambition to add to the sum of medical knowledge leads to questionable ground. It gives entrance to the fairyland of giants and giant killers, where it is hard to tell the real from the unreal, the substance from the shadow. There are many seekers for buried treasure in this enchanted field, but the credit of having found a true gem comes, if at all, at the caprice of rare good fortune, or perchance as an immaterial post mortem decoration. Each new fact appears first as a novelty in the mind of some dreamer, but fails to be appreciated till other related, and belated, discoveries, in other departments perhaps, concur to give to it recognition and potency. Imagination walks ever in front of the advancing line of the arts and sciences, and no member of the band may move forward except in company with the rest. Furthermore, concurrent conditions must be awaited in vogue, habits of thought, and the customs of the country. An illustration is found in the fascinating story of the mosquito fevers. Before our time suspicious glances had doubtless been cast on the mosquito, and the necessity of sequestration had probably been proved by unrecorded experiments before it was demonstrated by Finlay, whose findings were confirmed at heroic sacrifice and supplemented with scientific exactness. It remains for sanitary authority to enlarge its powers at the bidding of new public opinion and complete a great achievement of preventive medicine.

Responding to the courtesy of the president of the section, Dr. Jacobi, I venture to propose a contribution to the discussions of the congress as follows: Patients affected with tuberculosis of the lungs will recover without treatment if the environment is favorable, an extension of the doctrine derived from the study of orthopædic cases that tuberculosis in the joints owes its destructive character to unfavorable environment and not to an inexorable disposition of its own.

Aside from whatever infective quality it may

have, tuberculosis of the joints, the worthy rival of infantile paralysis in the production of lameness, is clinically the expression of a conflict between destructive and reparative forces. After a period of advance the disease retreats. The cause and method of this benign change are not understood, but the surgeon, encouraged by the certainty of its coming, invites its approach by mechanically protecting the affected part, and providing the best possible general environment. This he will continue to do till the nature of the trouble is understood. When knowledge of the tuberculous process leads to its arrest and prevention a portentous medical riddle will be solved.

In all sections of the congress pulmonary tuberculosis will be very much in the minds of our colleagues as the chief burden of their professional lives. In the wide range of general medicine it stands out in baleful perspective. The same distinction is held in the limited field of orthopædic

surgery by hip disease.

"Satan exalted sat, by merit raised

To that bad eminence.

If nothing can be done to promote recovery from hip disease except to correct environment, it will be but a step further to say the same of pulmonary tuberculosis.

The tuberculous hip has been intractable to all forms of positive treatment. Medication has not been neglected. New devices of minor surgery are constantly in the stage of experimentation. New mechanical methods have been counted by the hundreds, and operative surgery has been pushed to the extreme. Although patients have, almost without exception, recovered, curative treatment has not been found, and the often disappointed observer, led by reason and experience, relies confidently on expectant treatment. He provides a local environment which frees the affected part from disturbance, and a general environment which includes abundant food, innocuous occupation, and sanitary housing. The patient is thus assured of recovery with the least inconvenience and the best result allowed by the nature of the case.

Can pulmonary tuberculosis be viewed in the same therapeutical light? It may be said that as one is fatal and the other not fatal, recovery from both cannot be expected to follow the same treatment. Sir Benjamin Brodie said: "Why should hip disease be dangerous? The hip is not a vital organ," and Dr. Henry G. Davis, the leader of the modern renaissance of orthopædic surgery, wrote: "Medical men are convinced that when consumption has once taken possession, it goes not out until the spark of life goes with it." The parts affected have, however, peculiarities of anatomy and physiology which make it reasonable to believe that the treatment accorded to one may be applied, mutatis mutandis, to the other. The lung is a semide-tached, almost pedunculated organ. The hip is an inherent part, interlocked with other parts of the body by far reaching and rigid processes. The construction of the lung is simple, that of the hip complex and jointed. Lung tissue is soft and homo-

^{&#}x27;Read at the International Congress on Tuberculosis, Washington, U. S. A., October 2, 1908.

^{**}Conservative Surgery, 1866, p. 284. Reprint from the same, The (unability of Fulmonary Consumption, p. 4. The views, except in their optimism, have little in common with those here presented.

geneous, completing development with the cry of the new born, while the tissues of the hip range from hardest bone to impalpable synovial membrane, and reach development in late adolescence. The vascular net work of the lung invites infection and encourages repair, while the hip, with its comparatively deficient circulation, reluctantly yields to disease and reacts so slowly that a typical case of hip disease covers several years. If the hip rises superior to tuberculous infection, what forbids the expectation of signal recovery in the lung, so separate from the rest of the body, so simple in construction, with rapidly developing, homogeneous, and plastic tissue, so infused with vascularity, and altogether so alert and responsive to the appeals of disease and recovery? And the factor of safety is to be considered. If both lungs were seriously impaired the case would be fatal, but when it is known that with only part of a lung life may be indefi-nitely prolonged who can put a limit to recovery in a favorable environment

It will be in order to note the environments required in hip disease and pulmonary tuberculosis respectively. A therapeutic precept followed alike by Nature and art is the arrest of the function of an inflamed organ. This is especially applicable to the hip, endowed with wide and active motion, and no less applicable to the lungs, which are in constant motion. The arrest of motion which is sought in the tuberculous hip by fixation may be sought in the tuberculous lung by the omission of exercises that unduly quicken the breath and circulation and by keeping respiration at the minimum, such as is seen in healthy sleep. The possible volume of respired air is a provision for emergencies, but not necessary for health and recovery from disease. It is an unanimous opinion that the seat of inflammatory action must be protected from violent disturbance. This protection is sought in the hip by recumbency or the use of portable apparatus, and may be sought in the diseased lung by the cessation of coughing.

The interesting question arises whether coughing can be arrested or prevented. The impulse comes from a congested point, where an adhesive exudation promptly appears. Coughing destroys this protection and a semifluid secretion soon calls for renewed efforts attended by temporary and doubtful relief and certain injury to membranes in a state of subacute inflammation liable to become chronic. Coughing increases the irritation, and the irritation in turn increases the cough. This is a vicious circle and certainly calls for the intervention of reason and self control. That the lungs are exposed to the risk of injury is clear on a consideration of the mechanics of this muscular convulsion. thoracic and abdominal muscles act on occasion as expulsive organs, and when they respond to an impulse to cough their great power is displayed in severe compression, alternating with sudden release and agitation of the whole respiratory apparatus, while the compressed air driven through the tubes recalls the action of a steam pencil, wanting only the mordant agent to become an excoriating sand

It may not be doubted that intelligent effort will abate this habit and in many cases lead to its cessa-

tion. It is not easy to ignore laryngeal irritations and temptations to cough and to give up what one has been accustomed to for years. Reform is a tedious process, because it takes longer to go up hill than down. Neither is it altogether frivolous to say that if you do not cough the first time you do not have any cough. Expectoration, when unavoidable, may be facilitated by assuming for a moment an attitude in which the direction of the air passage is changed from the vertical to a downward inclination, when gravitation and a little effort provide a harmless exit. In such straits quadrupeds have an advantage with their inclined windpipes, as was seen during the epizootic which visited American horses in 1872.

The local treatment of pulmonary tuberculosis, based on the teaching of orthopædic practice, may be outlined as follows: I, The omission of whatever unduly excites respiration and circulation; 2, the habitual reduction of the volume of respired air to the minimum; and, 3, the inhibition of coughing.

Turning now from local to general considerations, it is evident that a favorable general environment should be equally accorded to the hip patient and the consumptive, and, indeed, in view of prevention, to every member of the community. The question of how to distribute evenly the advantages of abundant food, innocuous occupation, and sanitary housing is calling aloud for quick attention.

In passing, I suggest the possibility of relaxing the custom which regulates the hours of taking food. Is it wise to eat three meals at short intervals and then give a long interval to fasting? An old custom of the navy called for the "meal pennant" at 8 bells. Thus the men had breakfast at 8 o'clock, dinner at 12, and supper at 4. Three meals within eight hours were followed by a fast of sixteen hours. The efficiency of the ship's company may not have been appreciably reduced, but an even distribution and the omission of fasting would have agreeably modified the dietary. In this connection the method of the machinist when he gives fuel to his engine may be recalled, and the rules which govern feeding in the nursery and the typhoid ward.

It has been said that prevailing east wind and atmospheric moisture are less potent as factors of pulmonary tuberculosis than parsimony. Tuberculosis of the joints is especially a menace to childhood, and yet in this period, when the vital processes are at their best, and growth and development are active, it would seem that natural resistance to general disease should be alert and give protection from dangers of this kind. In early youth the circulation is rapid and full. are not easily deprived of their share of respira-tory activity. They are not given to introspection and melancholy, which have been thought to favor the approach of general or constitutional diseases. Their habits are far from sedentary. Their minds are free from worry and their bodies from overwork and long hours without rest and recreation. By this process of exclusion their danger may perhaps be traced to some mismanagement of alimentation. Some unfortunates are, from sad necessity; denied sufficient food. Others, perhaps, suffer be-

cause prudent economy finds easy expression in a scanty allowance to the younger members of the family, reinforced by a common and not altogether unreasonable idea that it is bad for a child to eat Overeating may, of course, induce acute disorders of brief duration, but, on the other hand, prudence of this kind may easily lead to the more serious mistake of opening the door for chronic affections by withholding sufficient nourishment. Certain young parents who have no reason for economy seem to have an idea that the precious object entrusted to their possession has delicate and sublimated qualities which, for a time at least, exempt it from the common necessity of an abundance of good food.

Without experience in diseases of the lungs, I am not so presumptuous as to assert too much for the therapeutical concept included in this paper, but logical inferences may prove to be practicable and useful, and the argument here ventured will not be in vain if it throws a single ray of light on a most

important subject.

The prevention of disease is what gives to the physician the greatest pride and delight. Next to that comes the satisfaction of recognizing and providing for the miracle of recovery by the expectant treatment. It may be asked what will be the status of the medical profession when prevention and expectation shall have reached the beneficent extremes so eagerly anticipated. The medical student, if he has time to read these remarks on pulmonary tuberculosis, will say, "But where does the physician come in?" My young friend, he is not coming in. His successor, say fifty years from now, may be the trained nurse, coming in with cap and froufrou. The physician (Dr. Sine Qua Non) may then be found in the State laboratory, making a diagnosis, or perchance prescribing absent treatment for the Martians.

53 WASHINGTON SQUARE.

FAMILY TUBERCULOSIS.

A Unique History and Some Suggestions.

BY WILLIAM CHARLES WHITE, M. D., Pittsburgh,

Medical Director, Tuberculosis League.

The family of Y lived in X, a small town of ten thousand people in the highest part of Ontario. They were always in good circumstances and lived in a most hygienic way as regards food, rest, cleanliness, and sanitation. They always lived in new houses from the time of the parental marriage until the time of the present history.

In 1908, when this history was written, the family consisted of father, mother, and seven children. The ages were as follows: Father seventy-one, mother fifty-nine, A thirty-eight, B thirty-six, C thirty-four, D thirty-two, E twenty-nine, F twenty-seven, and G twenty-one.

The father was a chemist and druggist up until ten years ago when he retired, and was always in fair health. The mother was always in good health. They lived in X in an excellent home under the best conditions. A was an electrical engineer, married with three children and lived in T, a city of two hundred and fifty thousand in-habitants. B was single and taught school under delightnationalists. Be was single and taught school in a suburban district in New York state. C was a physician, married with two children, living in J, a city of one hundred and fifty thousand inhabitants. D had university education, was married, had four children, and lived in T, a city of two undered and the thousand mind rents. E was a trained nurse. F lived at home with the parents in a most healthful way. G was at the University of M, a city of five hun-

dred thousand inhabitants.

The history of the family of the father of the family of Y is as follows: His parents were always healthy and died of old age. His three brothers died of tuberculosis. They died some years after their marriage and after the father of the family of Y was married, but never lived in the house with the family of Y, and died before the birth of the four youngest children of the family of Y. He had two sisters living who had always been well, aged sixty-five and sixty-eight. He had one sister also who died in childhood by accident.

childhood by accident.

The history of the family of the mother of the family of Y is as follows: Her father died of old age. Her mother died at thirty-two, of pneumonia (probably due to the pneumococcus, judging by the history). One brother was living and well; one sister died in childbirth, but always had good health up to the time of her death.

So far as the writer could determine, the members of the family of Y were never exposed to direct infection, even remotely, from human source. They lived together up to 1892, when the oldest child left for college. The next year the second child left for college, and in 1894 the third child went to the university. From this time on the family were never all living continuously together. The older children, after their university course, started their lives in different distant places, and the younger children kept replacing them at school: They all remained in comparatively good health until 1907, when the following most remarkable series of events occurred.

C, the physician, who lived in a city of two hundred thousand inhabitants in the middle western States, and who had not lived at home for ten years, began to raise a little morning plug of sputum which, upon examination, be found to contain tubercle bacilli. No lesion could be found to contain tupercle backing. No lesson could be found in the chest at this time by expert examiners, among whom was Dr. William Osler. He, however, repaired to a resort to take the cure, where later right and left apical lesions became evident. His wife, who was the daughter of two who succumbed to tuberculosis in her youth, and his two children were at this time and have continued in perfect health. In the family of Y, C was at this time

periodably under the severest strain of overwork and worry. Five months later, while C was at the parental home in X, E, the fifth child, age twenty-nine, returned from her nurse's training. C noticed her afternoon tiredness and face flushing, and while there was neither cough nor sputace nusning, and white there was notated turn, he found upon examination, a well marked right apical lesion extending as low as the second interspace in front and the spine of the scapula behind. The afterin front and the spine of the scapula behind. The after-noon temperature in this case was 99.4° F. to 100.2° F daily for some months from this time onward, and a month after this time she gave a most violent reaction to 2 mil-ligrammes of old tuberculin. E had been under very severe strain in charge of the operating room in one of

Eight months later the father, age seventy-one, living most comfortably in the home at X, had what was called most contortably in the nome at A, had what was called a severe cold, coming on rather abruptly with fever and chills. This did not improve, and two months later it was found to be tuberculosis, the lesion involving the upper half of the right lung. The sputum, when the nature of the process was discovered, was about one ounce daily, and tubercle bacilli present in large numbers. About the same time A, the oldest child, was complaining of illhealth and was found to have a right apical lesion which was evidently active. He felt he could not give up his work at this time and a few weeks later he was prostrated with a lower right lobe pneumonic attack. Apparently the in-

a lower right lobe pneumonic attack. Apparently the in-fecting organism in this was a streptococcus. No tubercle bacilli were found in the sputum, but doubtless from the slow process and the continued fever after the pneumonia had cleared with increased right apical activity, the tuber culous process was in the main responsible. No tuberculin was given in this case, and his medical attendance was not such as to justify reliance. The diagnosis was made by

the largest American hospitals.

such as to justify reliance. The diagnosis was made by the writer who saw the patient three times.

About the same time as A's and the father's trouble, B was found to have advanced tuberculosis, from which she had doubtless been giving evidence in morning sputum, cough, and elevation of evening temperature for a year. When diagnosticated the sputum was an ounce in

quantity, and bacilli present in numbers to correspond to a Gaffky count of six, and the upper and lower lobes on both sides involved. This case is a sad comment upon the medical profession's carelessness. B had been under the care of prominent New York physicians; had had her appendix removed in Johns Hopkins Hospital, Baltimore; had been treated in England, Ireland, and France for intestinal disorders by men recommended as the best in their localities, all within a year's time; with the most reprehensible lack of thoroughness, they with one accordicated to her tale of abdominal discomfort and neglected every other part of her body. Her intestinal and appendicular trouble, into which I have carefully inquired, were doubtless either tuberculous, for she had tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the toxine of the tubercle bacillis in her stools, or due to the same time or due to the same

About the same time G received a slight injury in football and soon after complained of pain in the right side. He was found to have a pleurisy which developed an effusion in which tubercle bacilli were found. Upon examination he also had an incipient right apical lesions in

both upper and lower lobe

There were still three left in the family, mother and two daughters. The two daughters were both complaining about the same time of afternoon tiredness and morning sputtum, and marked intestinal disturbance. F had just finished a period of two months' rest cure in the open air in a sanatorium for her intestinal difficulty, and had made good recovery. This intestinal trouble, I am positive, was due to a tuberculous lesion in her right apex (upper) and her left lower apex. These were both active when the writer saw her upon her return home, when the father took sick. D was also found at the time to have a lesion at the right apex which explained her rapid decline in weight and health, and her other symptoms. The mother alone escaped the infection.

This is a mere outline of the facts in this case of family tuberculosis. To recapitulate: There developed in fifteen months eight cases of tuberculosis in a family of nine who had not lived together for ten years, who were scattered in six different homes in five different American and Canadian cities. The ages of the victims ranged from seventy-one to twenty years. There was no known source of infection; they had always lived under the best conditions. Four were diagnosticated by the presence of tubercle bacilli, one by tuberculin, and three by physical signs and symptoms. The writer made or confirmed the diagnosis in every case.

Some striking features in the history, symptoms, and examinations here merit special mention. The members of the family were brought up on milk without other beverage save water until they left home. The father consumed large quantities of cream. The mother, who escaped, took very little milk, no cream save in her tea, and very little butter. About the time the family ceased to live together they moved into a new house, and the source

of milk was shortly after changed.

The symptoms of intestinal distress were common to all patients. They were so marked in two cases that the appendix was removed from each under the supposition that this was at fault. All the cases were apparently of good resistance against the infection, because, upon assuming what is now taught as the proper method of combating this infection, they made good recovery. The tubercle bacilli were in the four cases in which they were found of similar morphological structure, that conforming to the bovine type as described by Weber and others. Short, thick forms, irregular in outline. These preparations the writer has examined repeatedly, personally, and the resemblance is very striking. Unfortunately the opportunity for the

isolation of the organism in all of the cases save one is past. This isolation is being attempted at the present time in the one case with the desire to apply to it the Theobald Smith reaction test.

A striking coincidence is that a family of four children, who lived not many doors away from the family of Y twenty years ago, when the children of the latter family were young, were two years ago wiped out in two years' time by tuberculosis. They undoubtedly had the same milk supply, but their cases were undiagnosticated until very late.

Most careful inquiry failed to reveal any source of infection of human origin. I repeat this that its significance may not be forgotten. The paternal brothers are, I think, not a factor. They never lived with or near the family of Y; they took sick after Y was married. This, then, makes it necessary to explain the facts in either of the following ways: All were infected individually in their different spheres of life in such a way as to render possible the malady making itself evident in each at approximately the same period of time. With the ubiquitous presence of the tubercle bacilli, this, of course, is possible, but when one considers that this involves the acceptance also of a complete uniformity of relation between the resistance of each individual and his special dose of tubercle bacilli to time the concomitant downfall of all, it is obviously an untenable statement.

Far more likely is the other possibility that all were infected with approximately equal doses at approximately the same time from some source other than human. This allows the difference in the chemical resisting powers of the individuals caused by innate and extraneous factors, such as work and worry, to explain the paltry differences in the time of the appearance of the malady in each case.

Such a view is strengthened by the bovine morphology of the infecting organism in those cases in which it was found, by the habit of the family in consuming large quantities of milk, and by the escape of the only one who used very little milk; which facts also go to prove that the source of in-

fection was bovine.

The recital of this instance of family infection is, if viewed in this way, corroborative evidence of the von Behring view. And, in accord with the findings of the present day authorities in this and foreign countries, it also constitutes a plea for a more rigid crusade on the part of our organizations for the "prevention of tuberculosis" against the disease transferred from cattle to man. Those who labor in this field of work cannot but be struck with the small decrease in the amount of tuberculosis in certain centres as compared with the labor and money expended. Mr. E. G. Pope, whose recent sad death at Saranac Lake removed a life hard to be replaced, showed me shortly before his death certain charts based upon the death rate from tuberculosis in various countries for the past fifty years. These demonstrated that in the first twentyfive years of the half century the decline in death rate from tuberculosis was quite as great and in some countries greater than in the last twenty-five, or, in other words, greater in the quarter century

preceding the discovery of the tubercle bacillus than in the quarter century following this dis-

This same fact has lately been shown in a striking way by the figures published by S. T. Maher for Connecticut, Medical Record, August 1, 1908. Even more striking are the lessons from the figures of B. Fränkel for Germany. One hundred and thirty-five sanatoria for adults, 18,927 beds for consumptives, 270 dispensaries and places for educational purposes, and only a reduction in twenty years of 13.88 per 10,000 in the mortality. Something must be at fault.

Another pertinent question to be decided and one that grows in importance the more it is considered, is whether the mortality from tuberculosis and the decrease in the same, is a correct indication of the incidence of tuberculosis. It seems to me we fail often to see that our ability to prolong life explains often in great part the decrease in mortality rate, to wit, the German figures, twenty per cent. only of those treated are dead five years after the treatment. The important figures would be those indicating the number of new cases arising annually, and on these figures only would we be fully justified in reckoning the true efficiency of our work. Those who are working in the tuberculosis field must be struck with the fact that the supply keeps up.

The study of this family has stimulated the suggestion that we too often, perhaps, neglect the questions of dosage of bacilli in tuberculosis and the following incubation period. I am not prepared to lay down any law governing these points, but at the present time I feel convinced that the progress of any case of tuberculosis depends more upon the number of bacilli received within a given period than upon any other one factor. The varying dosage in different cases may lead to immunity or to any condition of tuberculosis from acute miliary to chronic fibroid phthisis. Probably the reason we have so little tuberculosis, since every one is exposed, is that the dosage is fortunately such in amount and spacing in the majority of individuals as to lead to a more stable immunity.

BEDFORD AVENUE AND WANDLESS STREET.

REPORT OF SIX MONTHS' WORK IN THE BROOK-LYN HOSPITAL DISPENSARY, FIRST SURGICAL DIVISION,

Including a Brief Report of Five Hundred Cases. BY J. EDDY BLAKE, M. D., Brooklyn, N. Y.

V. a. b. Sarada, Bradda, Traptal Domany; Instructor in Sages, New York, Peage data's School, Physician to the Brooklyn Methodist Episcopal Home.

Progress comes by trial and comparison. And, especially in our profession, we need always to test the new by the old; and in our enthusiasm for the new, never to lose sight of the old, until experience has demonstrated that the new is really better. If this precept were only more regularly followed we would less frequently see new drugs and new measures, at first exploited as cure alls, only later to be unequivocally condemned as worthless or injurious. A notable example of this tendency first to overestimate and then to underestimate the value of a new medical discovery is presented in the rise and fall in popularity of the coal tar antipyretics.

In order to determine the relative value of our various methods of treatment, a frequent comparison of results is necessary. And with this idea in mind, I have reviewed the histories of the last five hundred cases treated in the Brooklyn Hospital Dispensary, first surgical division. I shall not burden you with statistics, but will endeavor to present for your consideration some of the more interesting

facts derived from their study.

At the outset, it should be stated that our records are incomplete, and often unsatisfactory. Many of our cases, perhaps a majority, cease coming when almost well; these are usually classified as cured, although healing was not quite complete when last seen. Many others fail to return after one or more treatments, and we have no information as to the final outcome; these are usually classified as improved, but most of them recover speedily, with or without further attention. Fractures and sprains are classified as cured, even though a certain amount of disability remain when they pass from under our care. And wounds of fingers and toes or amputations are classed as cured when the wound heals, even though there was loss of substance.

It would be impossible with our sized staff to keep a detailed history of every case treated; and hence the reports of some of our cases are very meagre. And yet, in spite of all the omissions and imperfections in the data, and allowing for the difficulties and possibilities of error in compilation, our study has revealed much of interest and value.

The cases may be grouped in three general classes. First, those simply examined and referred to the hospital or to some other clinic; these were comparatively few in number, and are of no significance in our study. Second, those referred to us from the hospital, to treat during the terminal stage of their convalescence after operation or injury; these were likewise comparatively few in number, but include many of the severer injuries noted in our list. As a general rule, cases of extensive burns, fractures or dislocations of the lower extremity, dangerous injuries to the head or trunk, etc., are usually provisionally dressed by the ambulance surgeon and treated in the hospital. If seen by us at all, it is only after convalescence is well established. Many of these cases fail to heal promptly, and require treatment for long periods of time. The third class includes the remainder of the cases. Of these, a considerable proportion, especially those suffering from injury, had likewise been dressed one or more times before coming under our care.

As a general rule, most of the cases do not require more than one or two weeks' treatment. But there is a minority of cases, of old ulcers, sinuses, tuberculous disease, fractures, etc., in which treatment may be necessary for months or years. Such cases, however, usually make the rounds of the dispensaries, and fail to remain under the care of any one, until a cure could be effected when that is pos-

[&]quot;Read at a receiver of the Bendeva, Hopatal Club, November

As might be expected in a surgical clinic, wounds were more numerous than any other class of cases. They numbered 135, or twenty-seven per cent. of all the cases seen. Not quite one third were incised wounds, and slightly more than two thirds were lacerated. The lacerations, however, were in most cases trivial. One sixth of the incised wounds and one twelfth of the lacerated wounds are recorded as infected. Infection was actually present more frequently than this, but in many cases it was too slight to be noted on the record. Contrary to expectation, the incised wounds appear to have been infected about twice as often as the lacerated. This is apparently due to the fact that the slighter injuries are more often neglected until infection has become marked, whereas the severer injuries are presented for treatment before infection has occurred, or at least before it has made appreciable progress. The incised wounds were distributed in about equal numbers among the four following localities: Fingers, hands, face, and remainder of the body. Of the lacerated wounds, about one third affected the fingers, one quarter the face, one quarter the scalp, and the remainder other parts of the body. In addition to these we treated six cases of canine bites, two of human bites, and three of poisoned insect stings. Furthermore, we treated forty-eight cases of infection in which no primary wound was discoverable, or in which it was trivial or had healed. Of the later cases, three quarters affected the forearm, hand, and fingers, and the remainder the face, neck, and lower extremities. Most of our cases of punctured wounds belonged to this class, and the remainder are grouped with the incised wounds.

Suppurating nontuberculous glands needed incision in eleven cases; boils in five; and abscess of

the breast in two.

Twelve cases of abrasions were treated, and twenty-eight of contusions. In one of the latter cases a large hæmatoma of the thigh developed, which promptly subsided after aspiration.

Burns, mostly of the hand, furnished twenty-one cases! Six of these were Fourth of July burns, and three were electric. None were very severe or ex-

tensive.

Sprains were met in seventeen cases; seven of the ankle, five of the knee, three of the wrist, and

one each of the shoulder and phalanges.

Dislocations were only treated five times: Two of the shoulder, respectively one subcoracoid and one subglenoid; one of the elbow, which was reduced by the patient before he arrived at the clinic; and one each of the thumb and forefinger.

Fractures were present in twenty-five cases, as follows: Six of the wrist (Colles's fracture), four of the ribs, three of the phalanges, two each of the metacarpal and metatarsal bones, and one each of the zygomatic arch, external condyle of the humerus, clavicle, Pott's fracture of the ankle, ulna, radius and ulna, nasal bones, and fourth cervical vertebra.

Eleven cases of tumor presented themselves for treatment. Four sebaceous cysts of the scalp and one dermoid cyst of the face were removed. One nævus and two epitheliomata of the face, one recurrent sarcoma of the jaw, one recurrent sarcoma of

the cervical glands, and one sarcoma of the tonsil were referred to the hospital for operation.

Of skin lesions, eczema was the condition for which relief was most commonly sought; we treated eleven cases. Scabies came next with four cases. Inpetigo contagiosa, erysipelas, and trichophytosis each furnished two cases; ivy poisoning three cases, and urticaria, sycosis, and lupus one case each.

Foreign bodies were removed in eight cases; namely, splinters from the fingers three times, and from the arm once; a fish hook and a needle from a finger once each; an encysted fragment of glass from the wrist; and a button from the ear.

Ulcers of the leg were treated in twenty-three cases. Of these, five were traumatic, five syphilitic, ten varicose, and in three the cause was not deter-

nined.

Twenty cases of tuberculous infection were treated. Of these, two were of the wrist, one of the flexor tendon sheaths, and one of the skin of the forearm, one each of the shoulder, tibia, knee, and prostate, and twelve of the cervical lymph glands. Several of the latter were complicated by axillary adenitis and tuberculous deposits in the lungs.

Phimosis was noted in seven cases, and paraphimosis in two. Two cases of anterior poliomyelitis were examined and referred to another department for treatment. Six patients sought relief for painful scars, eight for old sinuses, and four each for hæmorrhoids and ingrowing toenails.

The remaining sixty cases presented nearly as many different lesions. And my time and your patience would hardly suffice to mention them in detail

Having thus briefly summarized the various classes of cases coming under our care, let us now consider some of the more interesting details relat-

ing to their treatment.

Fresh wounds are usually treated with dry dressings except when very dirty, very ragged, or when punctured. The amount of preliminary cleansing of the neighboring skin depends upon circumstances. If not very dirty, it is simply sponged off with Thiersch solution; but if necessary, soap and water, oil of turpentine, and ether are used to remove the grime, and then the parts sponged off with the Thiersch solution. As a rule, no attempt is made to disinfect the wound itself. But care is taken to remove any foreign particles, and in the case of lacerated wounds to remove disorganized tissue. But even in these latter cases we are very conservative; and it is often surprising to see what brilliant results may be achieved with conservative treatment.

Sutures are sometimes necessary to retain parts in correct apposition. But very frequently sterile adhesive strips are used instead of sutures, and have proved very satisfactory. Of course they can only replace superficial sutures, and be used with

dry dressings.

Aristol powder is generally used on clean incised wounds, but has not proved satisfactory on others. For denudation of skin, boric acid ointment or silver foil are usually employed. For abrasions with slight infection a ten per cent. ichthyol ointment usually proves very satisfactory. Fresh lacerated wounds after the preliminary cleansing, are generally put up in balsam of Peru. This mechanically entangles

bacteria, and by its mildly antiseptic action, prolonged for hours, prevents their growth. At the same time it is chemotactic and stimulates granulations. It is worse than useless, unless it can come in contact with all parts of the wound, and unless it is used before the bacteria have gained access and begun to multiply in the deeper tissues. If the wound is too dirty, or if infection has become appreciable, wet dressings should be used instead. Furthermore, Peru balsam seems to be of value only for two or three dressings. After that, something else should be substituted, even though the balsam is used again at a later stage to stimulate granulations. When granulation is well advanced, bismuth subiodide is frequently employed to stimulate the growth of epithelium. If the granulations are too exuberant, silver nitrate may be necessary to control them. Strapping often has a most beneficial effect in promoting the growth of epithelium, and so also the placing of a small piece of glass over the granulating area. Boric acid and zinc oxide ointments are frequently used in the later stage of healing.

Infected wounds, and infections without a visible wound, are generally treated with wet dressings. Frequently incision is indicated to relieve tension and provide drainage; but in some of the milder infections, lymphangeitis, etc., suppuration can often be prevented and incision rendered unnecessary by

the use of wet dressings alone.

I have noted that wet dressings are used far more commonly than a few years ago, when I was a hospital interne. Now practically all of our serious and many of our mild infections are thus treated.

The choice of solution to be employed depends on various considerations; the site and extent of the infected area and the character of the infection; the intelligence of the patient; and the personal preference of the surgeon in charge of the case. Although carbolic acid is tabooed in most clinics, on account of its supposed dangers to life and limb, I very frequently employ it with the happiest results. For severe and moderate infections about the extremities, a phenolboric acid solution controls the pain and checks infection as no other solution does; and if properly used it is not dangerous, all statements

to the contrary notwithstanding. A recent article by Meyer quotes numerous authors and gives the impression that the use of phenol in weak solution is liable to be attended by untoward consequences. But an analysis of the reported cases shows that the strength of the solution, when known, always exceeded two per cent.; and every one should know that this is too strong to be used as a routine procedure, especially on fingers. In this conection, allow me to call to your attention a popular fallacy, which I have found to be common among physicians; namely, that a teaspoonful of drug to a cup of water makes a two per cent. solution. The ordinary coffee cup or glass filled to the brim contains about eight ounces; the teacup somewhat less; and filled to within one half or three quarters of an inch of the top, as is customary, a "cup" contains about six to seven ounces. Furthermore, an ordinary teaspoon holds considerably more than a drachm, on an average about a drachm and a half. Hence, the careless doctor who prescribes a teaspoonful of pure phenol in a cup of water, supposing that he has ordered a two per cent. solution, may be surprised by a bad burn or gangrene of a finger. But a careful investigation would reveal the fact that the patient, following the doctor's directions, had used in reality a three or even four per cent. solution, which is sufficient to cause gangrene in most any case, if used long enough. Furthermore, it should be remembered that pure phenol is only slowly soluble in cold water; and unless care is used, much of the phenol may remain in globules undissolved on the bottom of the vessel, instead of being diffused evenly through the solution. Lack of care in seeing that the phenol was entirely dissolved has often resulted in severe burns, damaging both to the patient and doctor. In order to increase the solubility of the phenol, it is advisable always to use a mixture of phenol and glycerin, equal parts. Still further, phenol should not be used over very large areas, on account of its ready absorption and the danger of toxic symptoms. If the urine turns smoky or greenish black, the doctor should know that too much absorption is taking place; and unless he does know it, no doctor should employ this agent.

But limited to its own proper field, especially infections in the tendon sheaths, and in the deeper tissues of the extremities, there is no other remedy with which I am familiar that so speedily relieves pain and checks a spreading infection. A two per cent. solution is sometimes recommended, but this I consider risky, especially in children and where the circulation is poor. A one per cent. solution is strong enough and not risky. I usually order the

following prescription:

 B
 Phenol,
 .2 grammes;

 Glycerin,
 .2 grammes,

 Boric acid,
 .4 grammes;

 Water,
 .200 c.c.

The addition of the boric acid appears to increase the efficiency of the solution. If I fear this amount will prove insufficient, I double the quantity, or I double the strength of the solution, and order that it be diluted with an equal quantity of water before use. Occasionally, if the skin is very delicate or if the circulation is very poor, or if the area to be kept wet is large, I may order but one gramme of phenol to the 200 c.c.; but this is rather too weak for routine use. Where the infection is severe but limited, as in a small abscess, we often use the ninetyfive per cent, carbolic acid solution to destroy the site of the infection. We swab out the cavity of the abscess first with dry gauze, then with the phenol, and after a minute or two with ninety-five per cent. alcohol. A couple of days after such an application a small abscess will often be nearly well. Boils are often thus treated, the phenol being introduced into the infected hair follicle by a sharpened toothpick or match, on which are wrapped a few fibres of cotton. When the ninety-five per cent. phenol solution is used, the skin should be well greased, and care be taken even then not to spatter the acid around; for if carelessly used it may cause severe burns. Water will not stop the burning; alcohol is the antidote.

For severe infections of the extremities covering a considerable area, we generally use a corrosive sublimate solution, one to two or three thousand, prepared with alcohol and water equal parts. This has to be used with care, and the patient watched

for symptoms of mercury toxæmia. For deep infections I do not think it as efficient as the carbolic solution; and it often causes a severe dermatitis, which prevents its continued application. Five per cent. ichthyol solution may be used instead, but its odor and staining properties often render it objectionable to fastidious patients. Burrow's solution acts well with mild lymphangeitis, but is not used for the severer infections.

For the ordinary class of mild infections the Thiersch solution (boric acid, 5 parts; salicylic acid, 1 part; and water, 500 parts) has proved very satisfactory, but it is of little or no use in very severe infections. Of course incision and drainage is often

the first requisite in many of the cases.

After the further progress of the infection has been checked and healing is well advanced, we usually substitute for the wet dressing an ointment dressing of boric acid or ichthyol, ten per cent. As a mild antiseptic and astringent lotion, red wash is sometimes used. And as an escharotic a ten per cent. zinc chloride solution is often employed.

For a number of months past we have been using the Bier treatment in combination with other measures, and in most cases it has seemed to materially hasten convalescence. We have used both the suction cups and elastic constriction on suitable cases, and always with satisfactory results. The great drawback to the use of the suction cups is the amount of time consumed, but for treating localized infections, punctured wounds, sinuses, etc., they are often indispensable. The elastic constriction can be left to the care of fairly intelligent patients or their friends, and after the first application demands but little of the doctor's attention. At the same time the doctor is responsible to a certain extent for the result of treatment, and must see to it that the elastic bandage is properly applied-i. e., tight enough to cause a moderate hyperæmia, but not tight enough to cause pain or even marked discomfort, and certainly not tight enough to cause numbness and coldness in the limb.

Abrasions are usually treated with an ointment, zinc oxide, boric acid, or ichthyol. If considerably infected a Thiersch dressing or a five per cent ichthyol solution is applied. Contusions are treated with rest and support; often with lead and opium

solution or ichthyol ointment.

Old burns are usually treated with boric acid ointment unless markedly infected, when a boric acid solution, or a weak ichthyol solution, is employed. If not too large a very weak phenol-boric acid solution may be employed, but this is rather risky; absorption takes place so easily. The same is true of the carbolic ointment, which is so frequently used for this condition. Fresh burns of any magnitude are usually treated in the hospital; those which we see are usually treated with one of the ointments already mentioned. In a couple of cases a picric acid dressing has given us very satisfactory results, and we intend to continue its use in the future.

Sprains are usually strapped, but for the first dressing lead and opium lotion may be employed. Dislocations and fractures are reduced, and appropriate dressings applied to keep the parts in proper position. In the case of fractures, we usually have the patient return four or five times during the first

ten to fourteen days, and each time the limb is gently massaged and the dressings reapplied. During the following two weeks a permanent splint is worn and the parts left undisturbed. After this a light splint is worn for about two weeks, and removed every couple of days or oftener for massage. Experiment has shown that in the ordinary uncomplicated case bony union begins and is practically completed in the period from the thirteenth to the twenty-fourth day; and that only during this time is absolute fixation desirable. The massage tends to prevent atrophy of the muscles; and by this plan of treatment the best possible result is achieved in a minimum of time.

There being no separate skin clinic connected with the hospital, all such cases are referred to us for treatment. By the use of antiseptic, sedative, or stimulating ointments, solutions, or powders, we have been able to cure all the cases applying for relief. But as our list shows, they were all acute or subacute cases, amenable to treatment. Our most stubborn cases were eczema and lupus; but even

these responded to treatment.

In the treatment of various forms of tuberculosis we have had considerable success. This I believe is to be attributed to the fact that we pay marked attention to treating the patient for tuberculosis, as well as to treating the local lesion. And we give advice as to hygiene and dietetics, as well as apply dressings and prescribe drugs. You may recollect that our late friend and colleague, Dr. Herman, read a paper before this club several years ago on the value of potassium permanganate in local tuberculous lesions. I have continued this line of investigation, and although not prepared to make a detailed report, I can say that I have had marked success in several cases where it was employed. The last patient treated had been operated upon several times for tuberculous disease of the shoulder, and when he came under my care the shoulder was apparently ankylosed, and eight sinuses were discharging great quantities of pus. Now, after about a year of very irregular and intermittent treatment, the sinuses are entirely healed, there has been a considerable increase in the muscular development about the shoulder, and he has regained a fair amount of motion in the joint itself. The cure appears to be absolute; but, of course, it will take years to determine this point. I have had two patients in private practice who have remained well for three years after the cure of a tuberculous ischiorectal abscess and of suppurating glands in the neck and axilla, both complicated with pulmonary involvement.

We have had to treat several cases of malignant tumor, recurrent after operation. We have tried Coley's fluid, amylopsin, trypsin, and extract of thymus gland. In a couple of cases the disease seemed to be held in check for a time and life prolonged, and in others no result was noticeable. So our small experience in this line has not been very encouraging.

In conclusion I would say that the work is interesting and valuable, both to the men in charge and to those treated. In addition, we strive to impart information and opportunities to gather experience to a certain number of students who desire to gain

more knowledge as to the best method of recognizing and treating common complaints than can be gained by didactic lectures. After watching the work done in dispensaries where students are admitted and those where they are not admitted, it is my judgment that their presence is an advantage to all concerned. And I believe that the best results will be achieved when dispensaries and hospitals are correlated to medical schools and serve as institutions for the discovery and dissemination of medical knowledge, as well as for the treatment of those receiving their care.

352 JEFFERSON AVENUE.

INSUFFICIENTIA PYLORI VERSUS EINHORN'S ACHYLIA GASTRICA.

By Mark I. Knapp, M. D., New York.

It is now over six years that my first article on insufficientia pylori has been published, and since then I have added a few more monographs on the same disease. My first writing gave the history of fourteen cases, and my next publication, printed some six months after, added twelve more cases. Since that time the number of cases of insufficientia pylori that I have seen and satisfactorily treated runs into the hundreds. Revolutionary as were the theories expounded by me in my first work, they have now found adherents. Moreover, what at that time was, with me, the result of only logical inference has now actual facts as a base.

Insufficientia pylori expresses the existence of a positive state, and its clinical aspect runs in the same identical rut with achylia gastrica. In other words, what Einhorn described as achylia gastrica my investigations proved to be insufficientia pylori. My substituting the name of insufficientia pylori for the selfsame clinical picture, known as achylia gastrica, was not intended to be merely a play of words. My desire is to teach the exact condition which prevails; and the prevailing condition is not a loss of digestive secretions as denoted by the word achylia, but the prevailing condition is a non closure or an insufficiently tight closure of the pylorus; the digestive secretions are extremely rarely absent in the stomach. This teaching is in marked contrast with the teaching of Einhorn. Either achylia gastrica exists or it does not. My contention is that there is no such thing as achylia gastrica, although there exists atrophy of the mucous membrane. If achylia gastrica exists then such cases have surreptitiously eluded me these many years of my special practice of gastrology.

Achylia gastrica has been described by Einhorn as a condition in which there is either nothing at all in the stomach one hour after the eating of the test breakfast or else there is but a trace of chyme—if chyme it should be called at all—imbedded in mucus. Such cases I have seen, treated, and cured by the score. Only I gave up the name of achylia gastrica soon after my return from Ewald and after I had found that I could make no headway by way of curing my patients. This renouncing of achylia is due to the fact that I have always taken as a standard for comparison, as a gauge of the correctness of any theory,

not the personality of the one who advanced the theory, but the result of such theory upon the patient. If the patient fails to get well, then the theory should be rejected, no matter how exalted the position is of the one who advanced such theory. The sooner this view is accepted by the medical profession universally the sooner will medicine get on safe scientific ground. Our watchword must ever be the health of the one who consults us, and it is our duty to accomplish this by any means irrespective of, whether by so doing, we conform to the

teachings extant or repudiate them.

In the issue of May 24, 1902, of the *Philadelphia Medical Journal*, I described for the first time insufficientia pylori as a sequela of chronic gastritis. Since then I have repeatedly written on the same subject. At that time my writing was the result of purely logical deduction; it was simply a matter of inference; I had had no anatomical evidence to guide me. But now, some five years after my first description, the actual existence of the condition has been proved by an eminent London surgeon, who had made it his business to examine the condition of the pylorus at each laparotomy. The condition which I have described as insufficientia pylori presents the identical clinical picture of that described as achylia gastrica. But achylia gastrica is presumed to be a functional disease, a sort of nervous disease, and I have never relished "nervousness" as a cause of any disease. Of course, a disease, nervous in origin, must needs behave and react nervously to treatment-i. e., some time the patient feels better, but mostly not. No wonder the physician had rather see such patients go to some one else, and so it is that with the diagnosis of achylia gastrica one best prescribes the impossible. For the poor patient one advises a high priced watering place several thousand miles away from home, and for the rich nothing less will do than an automobile trip to Mars, but without any Wall Street ticker attached to it by wireless. Thus becomes justified the advice that with the diagnosis of achylia gastrica leave all hopes for a cure behind.

Somehow or another I became quite restive about that disease, especially as I began to see a surfeit of achylics, and at one unfortunate moment I decided to delve into the mysteries of the achylic stomach. Hold on, I thought to myself. Next time an achylic comes I shall have him come again the very following day and shall wait but half an hour after he has eaten his test meal. What a shock to my achylic conceptions right after the first intrusion! Why, I found absolutely good digestion. I found that the chyme showed all the qualifications of a good stomach. That unexpected experience only whetted my appetite for more experiments, which I continued, still obtaining the same results, namely, I had found good digestion at a period earlier than one hour after the eating of the breakfast. What wonder that my untutored belief in achylia gastrica began to vacillate, and slowly but surely the achylic yoke became more and more burdensome to me, unbearable. By degrees and with greater experience, my faith in achylia gas-

trica melted away.

In the clinical picture described as achylia we are asked to assume that the absence of chyme one hour

after the test meal denotes the condition of absence of all gastric functions save motor, but such is not the case. For, if, instead of waiting after the eating of the test meal a full hour, I waited only half or a quarter of an hour, I almost invariably found good digestion. Hence the very stomach which had to be condemned, if the diagnosis of achylia gastrica was to remain, showed remarkable vivacity if its sanctuary was invaded earlier at an unexpected mo-Apparently the trouble was not so much with the stomach as with the diagnosis. After mature deliberation I found the diagnosis of achylia untenable, and concluded to call cases which presented the achylic aspect chronic gastritis with supermotility. This combination I thought worth while handling, and I felt very proud of this product of literary meditation. I called it chronic gastritis, because the patients gave the histories of long suffering, and the reason why I termed it supermotility was that the stomach seemed to show an express speed in expediting its contents. For a while I felt quite exultant over my prowess. Now it was chronic gastritis with hypertony, and I was very happy. However, my patients persisted in not getting better, and certainly in not being cured. Of course, it was never my fault; I treated as I was taught. That I had changed the name, what difference? It meant the same condition, and so I continued to treat my patients as if my diagnosis had been achylia. Somehow I soon tired of that beautifully sounding combination, and finally, by the process of evolution and elimination, as described in my first article, I reached the conclusion that not the entire stomach was to blame in those cases, but only the very tail of it, the pylorus.

It would seem that Einhorn in his zeal was car-

ried away by the enthusiasm of the novice. Otherwise he should have asked of himself the same question as I, and he might possibly have come to the same conclusions. The more I looked into the matter the more I became convinced that I was dealing with no other condition than the weakening of the pyloric sphincter, which followed a previous overtaxing of it. This previous overtaxing and overirritating may have happened within the memory of the patient, or it may have had its origin in the very first days of his life and hence been unknown to him. This weakening, this relaxation of the pyloric sphincter I termed insufficientia pylori. Let us think over the practical value of these terms. Diagnosticated as achylia gastrica, the outlook is dubious at best, and rather bad as to the ultimate cure. The same clinical entity diagnosticated as insufficientia pylori, and the cure is not only a positive certainty, but betterment begins to manifest itself within a few days. Might not Einhorn test his cases of achylia a second, third, or even a fourth time, and then either refute my statements or accept them? The most absolute and exact knowledge concerning the actual condition of the stomach is of the utmost importance, not from a fancied academical standpoint, but for the purpose of curing

the sufferers.

In my first article I explained the method of reasoning by which I arrived at the conclusion of the existence of insufficientia pylori, and I then based my views on the existence of the following facts:

I. The pyloric region is the lowest part of the stomach, hence all ingesta drop there by mere gravitation. 2. The pyloric region is the most often affected by disease. This is a fact which stands proved by autopsies both in vivo and post mortem, and is easily explained by the preceding fact, namely: since all matters drop down to the lowest, to the pylorus, hence also the noxious matters, which must needs affect the part with which they come in direct contact. 3. The pyloric sphincter is spastically contracted by irritation. Such contraction depends on the degree, severity, and length of time of such irritation. For a certain length of time the pylorus will be able to respond to excessive irritation with strong contraction, but sooner or later the muscular sphincter, whipped into excessive exercise, must and does relax. This constitutes the condition of insufficientia pylori. The muscle of the pylorus behaves identically in the same way as does the muscle in any other part of the body. We may chop wood for a number of hours in succession, but we cannot do it incessantly; the muscles, we say, tire out. The tiring out is gradual in its development, hence there are several stages of the relaxed pylorus.

My present writing has no other motive than to impress upon the profession the absolute necessity of recognizing insufficientia pylori as a disease of the stomach which is of very frequent occurrence; it is the natural sequel of chronic pyloritis, which latter condition, presumably always, is preceded by a stenotic condition of the pylorus. The stenosis gives way subsequently to insufficiency. stenosis need not be demonstrable anatomically, but it is the stenosis produced by overcontraction, it is the stenosis which I have termed "stenosis pylori ab irritatione." It is this condition which so often causes such grave and fatal mistakes. I have seen it mistaken for diabetes, valvular lesion of the heart, grave kidney disease, asthma, tuberculosis, and a hidden carcinoma. All these supposed diseases rapidly vanished after recognizing the true condition of insufficientia and treating the patient for this.

I cannot forget the one case in which a physician who called me in consultation to a man supposedly dying from cancer was entirely nonplussed by my declaration that the patient would be well in a few weeks; my prognosis proved true. Although this physician and his predecessors concurred in the diagnosis of cancer, the patient suffered from nothing worse than insufficiency of the pylorus. Miraculous indeed it appears when a patient nearly seventy, who had suffered ever since he was nineteen, who was well acquainted with the several countries of two continents, where he looked for relief, who had consulted physicians by the score during this long period, who had to abstain from many articles of food in order to lessen his suffering, who suffered mostly after eating meat, and who can now enjoy life with but insignificantly little restriction in his diet. This was accomplished after but a few weeks of treatment.

This case is an illustration of one out of many dozens, if not hundreds, of cases which presented the typical picture of "achylia gastrica." Here is a case of another, a man of fifty-eight. He came to me with the diagnosis of valvular lesion of the

heart on January 17, 1008. The usual test meal was given him, and his stomach was aspirated. No sign of anything. He came again the following day, and this time I attempted to aspirate half an hour after he had taken the test meal. Again the stomach was found empty. He came the following day; this time only fifteen minutes elapsed between the eating and my attempt to aspirate, but again unsuccessfully. I made him come again the following day, and this time the patient was put on his left side for fifteen minutes immediately after his eating. This time I did aspirate about two c.c., which, however, gave a negative reaction to tropaeolin, but a positive one to Toepfer's test. Here we see a case which certainly represents "achylia"—and the very latest phrase Einhorn uses in describing the meaning achylia is found in his article Intestinal Dyspepsia (Berliner klinische Wochenschrift, No. 23, 1908), in which he says: "By the term 'achylia' is denoted the 'absolute absence of any secretion.'" But this case did show some sort of secretion after the patient was put on his left side for fifteen minutes. is only one instance of many more. The subsequent history of this case goes this way. March 18th, the aspiration of the test meal fifteen minutes after eating gave 38 c.c., tropaeolin negative, but Toepfer positive. The aspiration of test meal half an hour after eating on the 11th of April gave 2 c.c., but tropaeolin was positive, and on the 13th of June the aspiration one half hour after eating gave 6 c.c., with the tropaeolin very positive. This patient's supposed heart disease was gone pretty soon after treatment for insufficiency of the pylorus was instituted, and he considers himself now a well man. Does the usual treatment advocated in achylia achieve such results?

Now to come back to the subject. Insufficientia pylori is that condition in which one hour after eating the test breakfast either no contents at all are aspirated from the stomach or but a few cubic centimetres. If one or two cubic centimetres are aspirated and tropaeolin gives a positive reaction, then we need go no further; we have the diagnosis of insufficiency. But if this one or two cubic centimetres of contents is imbedded in mucus, without even an acid reaction, or if no contents at all are aspirated, it becomes our duty to search further, and this with double purpose. First we must ascertain the degree of the relaxation of the pylorus, and secondly we must make sure if there is any glandular activity left in the stomach. This is accomplished by giving the patient repeated test meals, one morning after the other, and shortening every day by fifteen minutes the time of waiting between the eating of the test meal and the time of aspiration of the stomach. If we can aspirate no contents, even fifteen minutes after the eating of the test meal, then the patient is told to come again the following day, when he is put on his left side for fifteen minutes, and then the stomach is aspirated. But also this may prove unsuccessful, and then the patient comes again the following day, and now I give him a "coffee test meal," which consists of 35 grammes of roll and 200 c.c. of black coffee. The patient is treated as on the day before-i, e., by fifteen minutes' waiting; this will usually suffice for

the diagnosis. If there is no complete insufficiency i. e., if the pylorus is still capable of answering to stimulation, the coffee will do it, the pylorus will then contract.

Just let me see what is the explanation given for the absence of chyme in achylia. The fact that no contents are aspirated has been explained very philosophically, that because of the absence of stomach digestion, because of the achylia, the muscularis ventriculi, like a good fellow, obliges and shoves and pushes the chyme, if chyme it should be called at all. into better and more convenient quarters, into the intestines, here to see its finish. That is in plain medical vernacular, because the stomach cannot work, therefore it overworks itself to get the ingested food into the intestine in rapid transit style, and "there you Just because of the fancied existence of atrophy of the mucosa, which, by the way, autopsies but rarely attest, there is a manifestation of true fraternalism in the muscularis, and it is this good fellow which, to oblige, pushes things along.

The absence of food in the stomach is attributed to hyperkinesis, overmotility, hypertony. Now, overmotility of the muscularis may manifest itself either in an increased number of contractions or in deeper contractions or in both. These contractions travel from the cardia towards the pylorus with like intensity issuing from the same irritating cause. Overmotility means overaction, hence also deeper contractions, and a deeper contraction of the pyloric region can effect only its more spastic occlusion. Here again I wish to call attention to the fact that the opening and closing of the sphincter of the pylorus is effected through the ordinary peristalsis of the stomach and not through any special nerve function, namely, the force of the peristaltic wave of the stomach, which causes a comparatively small diminution of the diameter of the stomach, is ample enough to entirely occlude the lumen of the pylorus. This it does not because of anything else than that the lumen of the pylorus is very small, so that if the force of the peristalsis is sufficient to produce a diminution of a quarter of an inch at each end in the diameter of the stomach, the same force in producing a like diminution of one quarter of an inch in the pylorus closes the calibre of the pylorus. The closure of the pylorus is produced by the active peristaltic contraction of the muscularis; the opening of the pylorus is a passive act, is a relaxation, a recoiling of the muscularis. There is no need to call in the operation of any special nervous action or nerve centre to account for the opening and closing of the pylorus. Naturally, the pylorus will respond to peristaltic action only when it is in a normal condition. The moment we speak of increased gastric motility, of hypertony, we must at once admit that such hypertony also operates on the pylorus, and the result of this must, of necessity, be the spastic closure thereof; and spastic closure of the pylorus must give and does give a larger quantity of chyme after the test meal has been eaten, simply because the gastric contents are forcibly held back in the stomach by the spastic contraction of the pylorus. Therefore we can see how highly illogical and preposterous is the conclusion that the entirely too premature escape of the ingesta from the stomach is due to

any overaction of the muscular coat of the stomach. Absence of chyme in the stomach one hour after the test meal was eaten precludes the possibility of overmotility; overmotility guarantees spastic contraction of the pylorus, and spastic contraction of the pylorus gives a large quantity of chyme, instead of absence of chyme, which is taught as diagnostic of achylia.

As I stated in my first article, in 1902, I deduced the existence of insufficiency of the pylorus from the analogy of the relaxation of other muscles of the body following an overexertion of such muscle or group of muscles. If we accept the exist-ence of an overexcited stage of the pyloric sphincter at any time and for any continuous length of time, the relaxation of such overstimulated muscle must at some future time follow as a logical consequence. If we accept the existence of pyloric spasm, and this is no more denied, we must admit that such repeated spastic contractions will gradually weaken the pyloric muscle; then relaxation must ensue. If the pylorus has finally and entirely relaxed, the ingested food instantly escapes from the stomach by mere gravity. To counteract gravity is why I place the patient on his left side for fifteen minutes after the eating of the test meal. The finding of chyme then, fifteen minutes after eating, which I did not find when I had the patient in the usual sitting position, sufficiently testifies to the correctness of the view that the escape of the ingested matter through the pylorus is due solely to the changed position of the body, to gravity. If there is nothing else, this test alone is sufficient to prove the existence of the insufficiency of the relaxed condition of the pylorus. For we could not very well assume that the allegiance of the ventricular muscle to the intestine was binding only in certain positions of the body, and that the stomach muscle had stipulated as the one and necessary covenant in its contract with the bowel to work over time only when the person was standing or sitting, but that any other position would mean an infraction, and therefore a violation, of the agreement whereby the stomach felt itself relieved from any obligation to "overmotili-' Overmotility of the muscularis out of sympathy for an atrophy of the mucosa-what atrocious nonsense! What incongruities are, only too often, doled out to us under the cloak of scientific Were it but a question of academical finesse we might condone such grandiose infantile philosophy. But it is not. The diagnosis of achylia gastrica condemns the patient to an indeterminate sentence of suffering, while the diagnosis of insufficientia pylori prognosticates absolute and speedy recovery.

My earlier monographs on insufficiency of the pylorus relate to a condition which necessarily follows a chronic affection of the pylorus. True, my first article is headed Insufficientia Pylori, a Sequela of Chronic Gastritis. But since then I have had to modify my views as to the gastritis. Gastritis suggests the involvement of the entire stomach, which is comparatively seldom the case. Instead, it is only the pyloric region which is mostly the seat of damage. However, my first article sufficiently dwells on the pyloric region, and one who reads this article cannot fail to see that I meant the pyloritis instead of gastritis. Thus corrected I would now

say "insufficientia pylori, a sequela of chronic pyloritis." The insufficiency is the natural sequence of the chronic pyloritis, which is clinically evident by the pain in the pit of the stomach. Certainly this view of insufficiency is in marked contrast with the assumption of insufficiency being of "nervous I do not assert that I discovered the conorigin.' dition of insufficiency of the pylorus as a thing existing. I only allege that I first described insufficiency as being the natural sequel of chronic pyloritis, and that its occurrence is very, very frequent, that it is not of any nervous origin, but that it has a physical existence. Hemmeter has quite a good article on insufficiency in his textbook, but, unfortunately, he classes it among the occasional neuroses of the stomach.

For five years my views on insufficiency of the pylorus had no other basis than my reasoning. But now its anatomical existence is subscribed to and verified by Moullin, an eminent London surgeon. Says Moullin (Pyloric Stenosis and Conditions of the Pylorus During Life, Lancet, January 19, 1907): ". . . I found that the size of the pylorus varied from that of a channel which could easily admit three fingers . . . to that of a tiny orifice. . . . The former was in a patient (of whom) the pylorus was so indefinite that it was difficult to find. The sphincter could scarcely be felt, and the stomach and intestine seemed to form one continuous canal without a break." From the title of this monograph is indicated at once the object of the writer, viz., pyloric stenosis. Moullin was not interested in insufficiency, but he says: "Between these two (the channel wide pylorus and the pylorus in which the orifice could scarcely be felt) I have met with every grade." In other words, based on actual experience from laparotomies and autopsies and therefore based on indisputable evidence of facts, not theories. Moullin asserts exactly what I have repeatedly stated, that there is a channel wide pylorus, hence there is the actual presence of the insufficiency which I have been teaching since 1902, and that there are several stages of insufficientia pylori, at which conclusion I arrived not from autopsies, but from reasoning and deductions from clinical facts.

In conclusion I wish to address a few words to the general practitioner. You, general practitioner, are called upon not only to make a diagnosis, not only to treat, but, especially, to cure. If you do not cure, some Eddyite or other sort of quack will take your living away. Before you accept the diagnosis "achylia gastrica" or "destruction of the lining of the stomach," make sure that it is so. Insist upon repeated test meal examinations as outlined in this monograph, and, when you have found the case to be one of insufficiency of the pylorus, then treat accordingly. In my previous articles the symptoms and treatment are given.

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616 Madison Avenue.

Our Menders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been

decided upon, the further questions are as follows LXXIX.—How do you treat sick headache?

October 15, 1908.)

LXXX.—How do you treat asphyxia neonatorum? (Answers due not later than November 16, 1908.)

LXXXI.-How do you treat chronic eczema? (Answers

due not later than December 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be at-tached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXVIII has been awarded to Dr. Charles Floyd Burrows, of Syracuse, N. Y., whose article appears

below

PRIZE QUESTION LXXVIII.

THE TREATMENT OF ACUTE CORYZA.

BY CHARLES FLOYD BURROWS, M. D., Syracuse, N. Y.

Acute coryza, even more than dyspepsia, is one of the commonest disorders which general practitioners are called upon to treat. "Cold in the head," or "catarrh," as it is popularly termed by the laity, is an acute infection of the nasal mucous membrane brought on usually by exposure to cold, and is a self limited disease, though its course may be cut down to a minimum and its discomforts ameliorated by early and rational treatment.

It begins with stuffiness in the nasal passages, suffusion of the eyes, sneezing, headache, chilliness, and malaise. It often ushers in other acute and more serious febrile diseases as measles, the grippe, etc. But in answering the question, How do you

treat acute corvza, I take it that this query is meant to apply to the ordinary catarrhal cold, which every one so often experiences in the changeable weather

of winter, spring, and autumn.

If coryza is seen in its initial stage the treatment consists, first, in promptly administering a dose of calomel-one grain in divided doses, followed a few hours later by a saline cathartic. Five grains of Dover's powder should also be given at once along with quinine, grain v. The quinine may be repeated every two or three hours in diminishing doses. If fever is present and the skin hot and dry tincture of aconite in drop doses every hour or two will relieve this and also will tend to dry the nasal mucous membrane. The old fashioned treatment of prescribing a hot mustard foot and leg bath for ten or fifteen minutes and the ingestion of a glass of hot ler counte : Russian tea while coffed at and discountenanced by many physicians, I believe to be worthy and very useful. These measures tend to open the pores of the skin, produce sweating, and relieve congestion of the head by drawing the blood to other tissues, and so equalizing to some extent the circulation.

After this treatment has been instituted a patient should be confined to a bed or a couch, with a hot water bottle to the feet, warmly covered, and the room thoroughly opened to admit all the fresh outdoor air available. Weston, the pedestrian, in his famous walk from Portland, Me., to Chicago, Ill., found that when he began to suffer from a cold that by continuing persistently along his way he could soon walk it off under the brisk outdoor exercise which he was subjecting himself to. While such treatment would prove too rigorous and heroic for practicability among most of our patients it teaches a common sense lesson in treating colds. The old idea of cooping oneself in a red hot, stuffy room, and avoiding drafts and fresh air-especially "night air"-as sure pneumonia producers, has passed away along with many other old fogyisms. Nowadays the benefits of breathing fresh cold outdoor air are realized forcibly in all respiratory affections, whether of the lungs, throat, or nose.

Locally greasing the nose externally with lanolin is certainly a measure which relieves the difficulty in breathing. Another old fashioned idea, but not to be despised! Every hour the nasal passages may be irrigated with a warm boric acid solution. This carries away mucous discharge, allays irritation and congestion—so affording relief. Care must be insisted on that violent blowing of the nose is not resorted to after its use, as middle ear trouble may occur from forcing fluid and germs through the Eustachian tube. Inhalations of menthol following this douching are relieving and soothing, as is also the application to the nostrils of pledgets of medicated cotton wool, which is now on the market, for such conditions. Spraying the nasal mucosa with or applying applications of such drugs as cocaine and suprarenal extracts, while affording much relief at once by constricting the mucosa and bloodvessels, serve no other therapeutic or curative effect, and tend to prolong and make a case worse when the after effects of these drugs follow. Therefore they should never be used in treating acute corvza.

In cases of coryza which have progressed for a day or two beyond the initial stage when one is consulted the treatment varies somewhat. A dose of calomel should be prescribed, as outlined before, small doses of quinine administered, frequent irrigations with the boric acid solution recommended, and outdoor air in quantity ad libitum ordered. These measures will relieve the annoying symptoms and hurry the termination.

Fresh air in abundance then, with rest, opening of the bowels, frequent irrigation of the nasal passages, a hot pediluvium, warm drinks, and a few judicious antifebrile drugs will accomplish all one can hope for in cutting short an attack of acute coryza and allaying its discomforts.

Such a treatment, even with its foothbath and anomiting of the nose, has the advantage also of

producing a helpful psychic effect on a patient-an effect which even in cold in the head is not to be overlooked, thanks to some lessons learned from Christian science and suggestive healing-and will prove therefore more satisfactory to him and more advantageous to a physician than the usual hurried routine of handing out a few rhinitis tablets, whose effect is usually to disorder the stomach. I believe it is the only rational common sense therapy for this disagreeable every day affliction—acute coryza.

1001 EAST GENESEE STREET.

Dr. Beverley Robinson, of New York, says:

If acute coryza is seen at its earliest stage, when the patient has begun to sneeze, with, or without, slight catarrhal discharge from the nasal passages, we should try to abort it. A few doses of quinine will occasionally accomplish this. When used it should be in two to four grain doses, repeated not oftener than once every six hours. Given in larger doses, or more frequently, it acts no better and sometimes acts as a depressant, and certainly not as a tonic. Quinine hydrochloride is the preferable salt. It is more acceptable to the stomach than the sulphate and is not so apt to occasion tinnitus or unpleasant aural symptoms.

Personally, after numerous trials, I have concluded that of divers prescriptions to abort a case of acute coryza none will accomplish it so frequently and with apparently so little objection as ammonium carbonate. This drug should be given preferably in mixtura amygdalæ, or in water with a little syrup of acacia and orange flower water, as a flavoring agent. A grain to the dessertspoonful is a suitable dose, repeated every hour for twelve consecutive hours, and later at longer intervals. Every two or three hours is frequent enough for the sec-

ond twelve or twenty-four hours.

If at the expiration of forty-eight hours the attack of acute coryza is not entirely aborted it is useless to continue the remedy. If ammonium carbonate is continued too frequently and too long it becomes a notable depressant of the circulation and sometimes occasions unpleasant symptoms of cardiac disability of temporary nature. Occasionally I substitute the aromatic spirit of ammonia for the carbonate in twenty drop doses every two hours. diluted with water, but it is not so efficacious as the former. Ammonia carbonate and also the aromatic spirit eliminate themselves from the body through the nasal mucous membrane and are thus useful locally. It is probable that they modify favorably the inflamed pituitary. It is also probable that not infrequently they prove fatal to the microbes, which are clearly present at times, and which doubtless are connected as a causative factor with the inception of acute coryza. I have come to regard ammonium carbonate as nearly a specific in the treatment of acute corvza, when it is used soon enough, repeatedly, and in suitable doses. While it succeeds more frequently than any other drug, or combination of drugs with which I am familiar, and with less unpleasant after effects, it fails frequently to accomplish the purpose of aborting the coryza. In my judgment, this is true when the corvza has not been treated with it at the initial stage, and in accordance with the precise manner I have indicated.

Among the other remedies indicated to cure, or . rather abort an attack of acute coryza, I would moderately recommend the use of the Turkish bath. To a patient in previous good health and not much past middle life, it may usually be recommended as a safe and oftentimes efficient treatment. The bath should be taken, however, at a suitable time after eating, when the patient is not unduly fatigued, when he has time to give to it, and when, too, the attention of the attendant at the bath, who gives the after massage, or rub down treatment, is thoroughly available and not pressed for time by numerous other calls from bathers. When all the foregoing conditions are not strictly attended to, the Turkish bath may be harmful instead of useful and aggravate the coryza rather than abort it.

Locally, there is no spray, powder, inhalation, which per se will abort a coryza successfully. I have tried a large number of them, of different kinds, and at different times have believed I had found a panacea. Invariably I have been disappointed, and at present I have given up the search-

When after the effort has been made to abort an attack of acute coryza and failed, it behooves us to institute other treatment. The most effective and least injurious of these is the combination of sweet spirit of nitre with spirit of Mindererus. Nitre in doses of twenty minims and spirit of mindererus, a dessertspoonful repeated every two or three hours, plain or diluted with a little water, will be found not unpleasant and effective. It is a slightly stimulating mixture, and with it the arteries are relaxed and the skin rendered more active. While taking it one must be careful not to sit in a draught or go into the open air unless the weather is very mild. If this indication is not attended to the coryza is aggravated, and laryngitis and bronchitis may develop. Indeed, it is rare, after two or three days at the most, that an attack of acute coryza, if it still persists, is limited strictly to the nasal passages. Tickling in the throat and slight, recurring cough ensue, with some repeated expectoration of frothy mucus, which all indicate the implication of the respiratory tract further along. At times, under these circumstances, the coryza is seemingly better, and there is less blowing of the nose, less discharge from the nasal passages, and a freer current of air through them. Again, these symptoms are no better; indeed, they are somewhat aggravated, and, in addition, the other symptoms just re-

Locally, when the acute coryza has lasted several days. I have believed that bismuth subnitrate with a little powdered acacia and morphine blown into the nose with a simple powder blower was of service in lessening discharge and irritation. Preferably, however, to this, in many instances, is the repeated inhalation of the vapors from equal parts of oil of eucalyptus, camphor, and menthol. many years I have made use of this combination in becomes vellow and notably thick and abundant, or it may be decidedly purulent, I have repeatedly found that no application is so useful as the following, used night and morning, or even three times in

| P_{i} | Oleoresin of cubeb, m xx |
|---------|-----------------------------------|
| | Powd. camphor,gr. xi Glycerin, |
| М | White petrolatum, |

This ointment should be applied to either nostril with the tip of the finger, and then while moderate pressure is made to occlude the other nostril, the ointment is sniffed up, or drawn upwards and backwards in the nasal passage until it is felt or detected in the nasopharynx. What amount enters the pharynx is simply expectorated. After drawing up the ointment into one nasal passage until it is thoroughly coated, the same process should be used for the other side. By the use of this ointment the sensitive and inflamed pituitary membrane is protected against the air, atmospheric changes, dust, etc., and no doubt, also, a decidedly curative effect is produced by these combined agents, which are the most effective I have thus far found.

The foregoing treatment of acute coryza is practical, efficient, and has stood the test in very many instances and through a long term of years.

Finally, I would add that it is decidedly wise to always take a purgative dose of Rochelle salt in the morning, at the initial stage of acute coryza. Frequently coryza means, when properly translated, a susceptible mucous membrane, due mainly to congestion caused by lithæmia, and brought on by overeating or too much alcoholic stimulation.

Dr. W. Peyre Porcher, of Charleston, S. C., writes:

It has been hymorously said that "A man must

It has been humorously said that "A man must be mighty unlucky who could not even catch a bad cold," but there has been no equally axiomatic statement in regard to getting rid of one. This might be expressed as follows: Free purgation, free diaphoresis, stasis. Thomas Watson, the English physician, is reported to have said that the cure for a cold was a teaspoonful of laudanum. By this he meant that no other drug could control the circulation and hence limit the inflammation and secretion in the nose like opium. The most certain method of aborting a coryza is as follows: First night, free catharsis (preferably mercurial). Second night, drink eight or ten ounces of very hot water to which some sugar and spice and one half ounce of whiskey have been added. Exercise by rapid walking or otherwise until profuse diaphoresis has been produced. Take Dover's powder, grains 10; or camphorated Dover's powder. Retire immediately under warm bed clothing. The result will be certain. There will be an abatement of all the symptoms. The raw, sore feeling in the throat and nose, the profuse discharge from the nose and the throat will all have ceased. Here we have first the revulsive effect of the purgative, next the profuse diplace is produced by the hot drink, together with the stimulant, and the exerise, and finally the conunling action on the circulation of the opium in the Dover's powder.

By far the adjuncts most valuable to this in the treatment of a cold are warm sunshine and healthy critic. By this I mean exercise sufficient to produce free diaphoresis and a general emptying of the enunctories of the system. Of course there are other methods and other medicaments by which the cresults can be accomplished, such as bella

donna, pilocarpine, Turkish baths, etc., etc., but the mentioned procedure is far more certain and effective than any other.

If the coryza is accompanied with fever antipyretics must be administered, always proceeded by a mild cathartic to cleanse the alimentary tract.

Locally a weak mentholated oil to which a little cocaine has been added may be sprayed into the nose occasionally, and will afford considerable relief from the sense of congestion and swelling in the nose, but local applications do not abort the disease, and constitutional treatment is always imperative. The so called anticold combinations are usually ineffective on account of the lack of other measures and improper administration. Therefore all the specifics which have been extolled for the cure of coryza have failed in most instances.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

Opening of the Medical Schools.—Tuberculous Disease in the United Kingdom.—The New King's College Hospital.—Indecent Advertisements.—The Late Sir Arthur Vernon Macan.

LONDON, October 6, 1908.

Last week the new medical session commenced with the opening of all the medical schools. For the last few years the custom that was formerly very common, that of having opening addresses on these occasions, has fallen somewhat into abeyance, and with few exceptions the opening was marked merely by an introductory speech from the dean, followed by the distribution of prizes, and an "Old Students' in dinner in the evening. Opening addresses were given at King's College by Dr. Macalister, of Cambridge, at Charing Cross Hospital by Sir Patrick Manson, and at the Middlesex Hospital by Mr. Rudyard Kipling. The last was a very humorous discourse in Mr. Kipling's best vein. The schools and medical societies will soon be in full swing again.

The war against tuberculosis in England is being waged in various ways with great assiduity. The death rate from the various forms of tuberculosis has steadily declined in England, Wales, and Scotland, until it is now about half of what it was fifty years ago. On the other hand, in Ireland there has been a steady increase in the death rate from consumption. An attempt has been made to explain this unfortunate increase of the death rate from tuberculous disease in Ireland on the ground that there is a constant emigration of the young and healthy adult population of that country, which, leaving behind an undue proportion of aged and weakly individuals, necessarily raises the death rate from all diseases, including that from tuberculosis. It has been shown that emigration has been responsible for the statistics which have shown an apparent alarming increase of insanity in Ireland during recent years, and on analogous reasoning it may also be assumed to influence seriously the mortality statistics for the country. This argument is strongly supported by the fact that the greater part of the

increased death rate from tuberculosis in Ireland is accounted for by deaths occurring between the ages of fifteen and thirty-five years, which is just the period which is most affected by emigration. This alarming increase of tuberculosis in Ireland led to the introduction of the bill for the compulsory notification of phthisis (Ireland), which will probably

pass into law this session.

A similar bill will probably be passed in England, as Dr. A. Newsholme, principal medical officer of the Local Government Board, speaking at the Washington International Congress on Tuberculosis, on the authority of Mr. Burns, made the announcement that the board proposed to put upon the poor law medical officers the duty of notifying to all sanitary authorities who requested the information all cases of pulmonary tuberculosis occurring among patients who were a charge to the parish. Such an order, to be of any use, will also make it compulsory upon the guardians and their staff to notify changes of address of parochial patients suffering from pulmonary consumption, and no doubt the details of such notification will be arranged. In the curative treatment of this disease the campaign is also being carried on. Sanatoria are largely increasing in numbers, with good results. These institutions are, however, so costly to maintain that most of them have to make some charges to the patients, and the poor are thus deprived of their benefits. An interesting experiment was made in this direction by Dr. Lyster, of Chelmsford, who began operations about eight years ago. He organized a system of pervious canvas shelters, which was done at comparatively small cost, and in these the patients lived. The result has been that for two years past he has not had a single fresh case of tuberculosis in his district, and all the cases he now has under treatment were "imported" from other districts. actual cost of erecting and furnishing a shelter for one person was £25 and for two persons at the rate of £15 each, which is decidedly less than the cost at a sanatorium.

It is now five years since it was first decided to remove King's College Hospital to South London, and although for some time but little progress was made with this scheme, the work of constructing the new buildings has advanced rapidly during the past six months. The outpatient and casualty departments are well on the way toward completion, and the erection of the administration block, together with some of the wards, will be proceeded with very shortly. The new hospital will have 600 beds when completed, and if present plans are carried out, will probably be one of the finest hospitals in Europe. For some time King's College Hospital has occupied a position in which, owing to the clearance of slums and the dispersal of the poor population of the West Central District, there has been no real need of a large general hospital, while, on the other hand, the new hospital will afford relief to the vast population which surrounds Camberwell Green and is at present without hospital accommodation. The separation of the hospital from King's College will make it necessary for a division of studies to be carried out in connection with medical education at this institution. Such a system was proposed some little time ago for all the hospitals by the University of London, but the proposal did not meet with general approbation. In the present case, however, it is practicable and to some extent essential, as the preliminary scientific work of the medical curriculum (including anatomy and physiology) can readily be carried out at such an institution as King's College, while the actual practice of medicine and surgery will be carried out in the wards of the new hospital and in the laboratories for bacteriology and pathology which will be built in connection with it.

The committee of the House of Commons appointed to inquire into the subject of indecent advertisements and indecent literature generally has just published its report. The committee draw attention to certain anomalies in the law which require amendment. Thus, while it is an offense against the law to affix an indecent advertisement or print to a wall or boarding, it is no offense to place obscene or indecent papers or prints in the letter box of any house. Moreover, it is questionable whether there is power under the existing law to deal with indecent exhibitions in stereoscopic machines. The committee recommend such changes in the law as would remedy these anomalies. They also recommend such statutory definitions of indecent or obscene matter as would render the application of the law wider than at present. Also they suggest that the advertisement or sale of drugs or articles designed for procuring abortion should be made illegal, and that the advertisements of articles designed for the prevention of conception should be rendered illegal. It will be the wish of the medical profession in England that the various reforms suggested by the committee may speedily be brought into effect.

The death has occurred of Sir Arthur Vernon Macan, B. A., M. B., M. Ch., King's professor of midwifery, Trinity College, Dublin, and obstetric physician to Sir Patrick Dun's Hospital, Dublin. He was graduated in 1868 in the University of Dublin, and subsequently proceeded to Berlin and Vienna, where he spent several years in study, particularly in that of midwifery and gynæcology. He was appointed to the mastership of the Rotunda Hospital in 1882, and while there he instituted several reforms, especially an improvement in the nursing system, and there he performed the first Cæsarean section that was done in Ireland. He had been a president of the British Medical Association and also served as president of the British Gynæcological Society. He had written numerous works on obstetrical and gynæcological subjects.

Therapeutical Notes.

For Tenia in Infants.—The following is prescribed by G. Bardet:

| Oleoresin o | | | | |
|-------------|--------|------|---|-----------|
| Calomel, . | | | g | T. VIISS; |
| Water, | | | | 3ss; |
| Pulverized | sugar, | | | 544: |
| Gelatin . | | | | |

[This is evidently intended for a jelly, to be given in divided doses.]

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NEW YORK, SATURDAY, OCTOBER 31, 1908.

PROFESSOR CALMETTE'S HARVEY LECTURE.

The first of this year's lectures given under the auspices of the Harvey Society was delivered by Professor A. Calmette, of Lille, last week, and the subject was one with which his name has been intimately associated for years, namely, Intestinal Infection and Immunity in Tuberculosis. As those who have followed the literature are aware, Calmette argues strongly for the lymph path of infection, and sees in the digestive tract the chief portal of entry for the virus. According to him, aerial infection, either by means of spray particles (Flügge) or through dust containing tubercle bacilli (Cornet) is very infrequent. In fact, he alludes to the normal asepsis of the respiratory tract as arguing in favor of a strong natural defense against bacterial invasion from that point. It would be interesting to know just what data Calmette has concerning this point. Is the mucous membrane of the trachea and bronchi really aseptic under normal conditions?

Lest his readers associate the idea of intestinal infection with the well known view of Behring, Calmette is careful to emphasize the point that he does not believe the milk of tuberculous cows plays an essential rôle in human tuberculous infection. While admitting that such milk is dangerous, especially for young infants, he believes that this factor is slight when compared with the danger lurking in human by the the coeffet by a confumptive. In considering the various ways in which human tubercle bacilli may reach the food and so the intestinal tract, Calmette speaks of flies as an important factor in this transmission. Although we are thoroughly in sympathy with the movement for the suppression of the fly nuisance, we cannot share his view of their importance in the transmission of tuberculous infection. It is well known, of course, that the fly is an important element in the spread of typhoid fever and other diarrheal diseases. The typhoid bacillus, however, is highly saprophytic, and mutiplies rapidly when inoculated into a suitable medium, such as milk. In the case of the tubercle bacillus this is not the case, and it would therefore be necessary for a fly to deposit a considerable amount of tuberculous material on the food in order to carry infection to

In order to establish the path of absorption from the intestinal tract, Calmette mixed lamp black with the food of a number of animals and observed that the fate of these particles differed in the young and in adult animals. In the former the particles were held back in the mesenteric lymph nodes, while in the latter they often traveled to the lung, producing the typical picture of anthracosis. Similar results were obtained in animals with tubercle bacilli. In the very young the bacilli were held back by the lymph nodes; in the older animals the virus was carried through the lymph nodes into the thoracic duct and so into the right heart. From there the bacilli reached the lungs. Calmette thus gives an anatomical reason, the difference in the density of the filters constituted by the lymph nodes, for the greater proportion of tuberculous mesenteric glands found in infants. The frequency of the involvement of these glands, it will be recalled, was at one time made the basis for computing the relative frequency of intestinal infection. In the future it will be necessary to consider the point raised by Calmette.

Calmette reported some interesting feeding experiments on calves. When these were fed in a single infected meal with a small dose of bovine tubercle bacilli, the animals all became tuberculous, that is, they all reacted to tuberculin in about a month. When the aniamls were tested again, month after month, it was found that after a time some failed to react, and on slaughtering them, these animals were found free from tuberculous lesions. If, instead of slaughtering, one attempted to reinfect such animals, it was found that they were immune to a close of poison certainly capable of infecting other calves of the same age. Instead of feeding with but a single dose of tuberculous virus, he also fed another series of calves repeatedly, at short intervals, with small doses of bacilli. In this case it was found that the animals never ceased to react

to tuberculin, and did not become immune. On the contrary, the infection in these animals developed rapidly and terminated fatally. In order to determine whether the condition in the resistant animals which had been fed but once with tuberculous virus was a true immunity, Calmette felt that absence of reaction to tuberculin was not enough. He examined such animals carefully, to see whether virulent tubercle bacilli were still present in the different lymph nodes in the body. He found that four months after the feeding the bacilli had completely disappeared. This, naturally, is of the highest interest, for the production of immunity in tuberculous disease has remained one of the obscure points.

The immunity thus produced in the animals is not absolute. According to Calmette, healthy cattle can also be prepared by two or three large intravenous injections of tuberculin, and then exhibit considerable resistance. Thus, when injected intravenously with doses sufficient in the controls to produce an acute miliary tuberculosis, these animals always contracted merely a chronic form of tuberculosis, with a very slow development. This is really in line with the view expressed by von Behring four years ago. namely, that pulmonary consumption is a tuberculous infection manifesting itself in an individual already partially immunized. Behring, it may be added, believes that this primary immunizing infection takes place in very early life. It is true that we do not know whether these conditions exist in man, though analogous facts have frequently been reported by clinicians. In view of the efficacy of tuberculin in immunizing the animals, Calmette justly condemns the various methods of immunization in which the living virus is used. His work shows that by the intestinal absorption of a small single dose of tubercle bacilli it is possible to produce an immunity (in animals) of such a degree that for at least a year these animals are insusceptible to large infections through the digestive tract. So far as the duration of this immunity is concerned, it may be of interest to know that, in his "vaccination" against tuberculosis in cattle, Heymanns inoculates the animals each year.

THE SERUM TREATMENT OF CEREBRO-SPINAL FEVER.

In our issue of May 11, 1907, we referred to the attempt to produce an antiserum for therapeutic application in cases of cerebrospinal fever, and in that of January 25, 1908, we referred to the results of the use of this serum in thirty-six cases of cerebrospinal fever in human beings. In the Journal of Experimental Medicine for September 5th, Flexner and Jobling publish a summary of the

results of treatment in four hundred and twentynine cases of cerebrospinal fever in various parts of the world—Ohio, California, Ireland, Scotland, Massachusetts, Pennsylvania, Maryland, and New York. The gross results are that 287, or 66.89 per cent., of the patients recovered, and 142, or 33.11 per cent., died. By eliminating cases that ended fatally in less than twenty-four hours after the injection of the serum, those cases that were of a rapidly fatal, fulminant type, and those that proved fatal on account of secondary or of mixed infections, the mortality percentage is reduced to twenty-five.

It is of course well known that cases of infective disease respond to serum treatment best when the serum is injected within the shortest possible time after the onset of the symptoms, for example, in diphtheria. We think, however, that in publishing results of serum treatment, the percentages of cures and of failures should be calculated upon the total number of cases treated, not upon those treated under the average favorable circumstances. The practising physician must learn, if he has not already learned, to make his diagnosis early and to employ his specific serum treatment at once. The report under discussion contains much interesting material and many instructive tables showing the results of the treatment by age periods, according to the time of the injection, the manner of termination of the attack, the duration of the attacks, the frequency of relapses, and the influence of the serum on the diplococci, on the spinal exudate, on the leucocytosis, and on the frequency of the sequelæ. It is perhaps well to state that all of the cases treated in this series were diagnosticated by bacteriological meth-

The authors conclude that when the antimeningitis serum is used by the subdural route in suitable doses and at proper intervals, it is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration of health in all but a very small number of the recovered, thus lessening the serious, deforming, and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease.

SOCIETY PROGRAMMES.

We have more than once taken occasion in the past to deprecate the laxity sometimes shown by medical societies in the matter of allowing undesirable papers to be presented at their meetings. We have noted a decided improvement in this respect during the last few years, but a sorry lapse was made by the New York Academy of Medicine recently when it gave an individual the privilege of exploit-

ing a matter connected with the treatment of tabes dorsalis in such a way as to bring him the tremendous advantage of newspaper laudation, an advantage to which at least one shining light of neurology unwittingly contributed by the remarks which he made in the discussion. So palpable was the blunder that the New York Neurological Society very promptly signified its disapproval.

Locomotor ataxia is a disease that offers peculiar opportunities for those whose enthusiasm—not to use a harsher term—leads them to hold out to the public prospects of cure which must prove delusive. But the phenomenal exploit achieved by the man whose paper we have referred to seems to have aroused emulation among those who in various ways hold out an alluring bait to the public; within the last few days there has been shown to us a letter written to a victim of the disease by the proprietor of a sanatorium, in which, after setting forth the therapeutical resources of his establishment, he modestly remarked that not every case of locomotor ataxia was curable!

THE WORK OF THE MANUFACTURING DRUGGIST.

The October number of the Journal of the Michigan State Medical Society contains an article by Dr. Minta Proctor Kemp, of Detroit, entitled What the Manufacturing Druggist Does for the Doctor, in which the author has a good word to say for some of those manufacturing pharmacists whose products are not all official in the United States Pharmacopaia or recognized in the National Formulary. The author first speaks of the biological products, taking the diphtheritic antitoxine as an example. "The cost of production of antitoxine is high," says the article, "on account of the expense of immunizing horses, since all horses are not capable of producing antitoxine, and it may happen that several have to be tried before a susceptible animal is found. When the discovery of antitoxine was made, the manufacturing druggists became interested at once, and the marketed article has been improved at various times since by work done at their expense.'

"When," the author continues, taking up a different class of products, "as the result of research work by physicians and scientists in a manufacturing laboratory, a new remedy is put on the market, it has been considered a convenient protection to inaugurate a trade name for the article, for example, antiphlogistine and listerine. These two preparations are used advisedly, because the preparations have had such a widespread use among physicians that formulas which are nothing more nor less than imitations of them have been placed in the last edition

of the United States Pharmacopæia." The author remarks that the cataplasma kaolini corresponds to antiphlogistine, "and presumably would not have been found in the pharmacopæia except for the intense popularity of the well known preparation of Denver mud, glycerin, etc., which has proved useful and tremendously salable." The author adds that the United States Dispensatory says of the cataplasma kaolini that it was introduced into the pharmacopæia "to supply the demand for an antiseptic poultice," though "it is obvious that the demand was created by the thousands who have used antiphlogistine."

"Antiseptic compound, U. S. P." (by which doubtless the official liquor antisepticus is intended), the author declares to be "a good copy of listerine." Many further examples are cited of the official and semiofficial imitation of proprietary products, "always without credit to the originator." The obvious implication is that this privileged sort of substitution is reprehensible, and we must say that there are many who will admit that the authors of the pharmacopæia and the formulary might have been in better business than that of imitating preparations the prescribing of which under their original names is discountenanced by those who speak for a great part of the medical profession of the country in its corporate capacity.

Then there is the standardization of remedies by testing their physiological action, as in the case of ergot, all of which work appears to be undertaken by the manufacturing houses exclusively. Moreover, many new and useful remedies have been introduced into use as a result of the manufacturers' efforts. In short, a very appealing case is made out for the manufacturing druggists. Of course, there is nothing new in all this, save for the author's implied censure of the pharmacopæia and formulary officials for having resorted to imitation while withholding credit from those who originally devised the preparations imitated; for the medical profession has in the main acknowledged most frankly its indebtedness to the drug manufacturers.

INSTRUCTIONS FOR CONSUMPTIVES.

The Department of Health of the City of New York has issued a handy and very valuable little book entitled Handbook of Help for Persons Suffering from Pulmonary Tuberculosis (Consumption). The city has been deservedly commended for the means which it has taken to succor consumptives, to relieve or cure them of their disease, and to prevent its spread. The little book in question gives full information as to what ought to be done for persons who are thought to be tuberculous, ex-

Aems Items.

cept of course as to the medical treatment, and will serve as a guide to those who wish to take advantage of the varied provisions made for their benefit. It takes the present encouraging view of incipient tuberculous disease, but is far from sanctioning the ostrichlike policy of looking upon the disease as "a cold" or deluding one's self with the idea that pulmonary hæmorrhage comes "from the throat." There is no mystification in its pages; it contains nothing that a grown person of average mental attainment cannot readily comprehend. A copy of it should be kept in every household, for nobody can say that his own family is secure against the insidious attack of the tubercle bacillus, and in case of need, even if the danger seems doubtful, no time should be lost for the lack of such simple instructions as the book gives. We presume that it may be obtained by addressing the Department of Health, Fifty-fifth Street and Sixth Avenue, borough of Manhattan.

Gbituarn.

ALONZO BRAYTON BALL, M. D., of New York.

Last Saturday Dr. Ball died in Boston at the end of a short illness with pneumonia, in the sixty-eighth year of his age. He was the son of a New York physician and a graduate of the College of Physicians and Surgeons, of the class of 1863. After his graduation he served for the full term on the house staff of the New York Hospital, and then engaged in practice in New York. His career was that of a typical and exceedingly able family physician. He became an attending physician to the New York Hospital, to the Presbyterian Hospital, and to St. Luke's Hospital, and a clinical professor in the College of Physicians and Surgeons.

As an oral teacher of medicine Dr. Ball was exceptionally lucid, but he rarely contributed to the literature of the profession, although he was master of a singularly clear and attractive literary style. He possessed the social graces to an unusual degree, and he was critically appreciative of music and the arts of design. As a man he was genial, and his conversation was always interesting and instructive. He was zealous as a citizen, and he was highly esteemed by the profession and by all who knew him.

HENRY DENTON NICOLL, M. D., of New York.

Dr. Nicoll died on Tuesday, October 27th. in New Windsor, N. Y., his native town, at the age

of sixty-four. He was a graduate of the College of Physicians and Surgeons, of New York, of the class of 1866. For many years he had been a well known gynæcologist and one of the surgeons of the Woman's Hospital. He was a man of great amiability, highly respected by his professional brethren.

An Appropriation for the Louisville Medical Schools. The general council of Louisville, Ky., has passed an ordinance appropriating \$25,000, to be used for laboratory equipment for the Medical Department of the University

Women Physicians in France.-It is reported that there are more than six hundred women students in the medical departments of French universities. In Paris alone there are over a hundred women practitioners of medicine, most of them holding official positions.

Buffalo Academy of Medicine.—A meeting of the Section in Surgery will be held on Monday evening, November 2d. The programme will include the following papers: New Aural Surgery, by Dr. George F. Cott; Report of a Case of Primary Ectopic Pregnancy, by Dr. James A. McLeod.

The Manhattan Medical Society.—A stated meeting of this society was held on Friday evening, October 30th. Dr. Dexter D. Ashley demonstrated the Parkhill instrument. and Dr. Ralph Waldo read the paper of the evening on the Differential Diagnosis between Extrauterine Pregnancy and Early Abortion, after which a clinical conference on antipyretic treatment was held. A general discussion followed.

pyretic treatment was neid. A general discussion followed.
Changes of Address.—Dr. Carlos MacDonald, to 15
East Forty-eighth Street, New York.
Dr. Ross M. Bradley, from Boston, to 416 Main Street,
Jamestown, N. Y.
Dr. David Riesman, to 1715 Spruce Street, Philadelphia
Dr. Lewis Brinton, to 1913 Spruce Street, Philadelphia
Dr. H. M. Christian, to The Burlington, 1321 Spruce
Street Philadelphia Street, Philadelphia

Street, Philadelphia.

The Syracuse, N. Y., Academy of Medicine.—A regular meeting of this academy was held on Tuesday evening, October 27th. The programme included the following papers: Resection of the Knee Joint for Tuberculosis, by Dr. Nathan Jacobson; Report of a Case of Gunshot Wound of the Small Intestine, with presentation of the patient, by Dr. Frederick Flaherty; Report of a Case of Abdominal Pregnancy, by Dr. G. B. Broad.

The City Hornital at Atlantic City appounces the following the control of the patient of the

nancy, by Dr. G. B. Broad.

The City Hospital at Atlantic City announces the following changes in its staff: Dr. W. Blair Stewart has resigned as attending surgeon and will be succeeded by Dr. W. Price Davis; Dr. William M. Pollard has resigned as attending ophthalmologist and will be succeeded by Dr. W. L. Ridgeway; Dr. Charles K. Mills, of Philadelphia, has resigned as consulting neurologist and will be succeeded by Dr. T. D. Taggart, of Atlantic City.

Personal.—Dr. Smith Ely Jelliffe sailed for Europe results for a prolonged absence. Dr. Jelliffe will prosecute

cently, for a prolonged absence. Dr. Jelliffe will prosecute his psychiatric studies in various European cities. In consequence of the necessity of his remaining away from New York for a long time for that purpose, he has resigned his position as joint editor of the New York Medical Journal.

We are glad to be able to announce, however, that he has undertaken to favor us with frequent communications.

Contagious Diseases in Chicago.—During the week ending October 17, 1908, there were reported to the Department of Health 414 cases of contagious diseases, as follows: lows: Dipththeria, 132 cases; scarlet fever, 102 cases; measles, 9 cases; chickenpox, 5 cases; pneumonia, 24 cases; typhoid fever, 104 cases; whooping cough, 2 cases; tuberculosis, 31 cases; smallpox, 1 case; diseases of minor importance, 3 cases

Dr. Goldwater's Appointment.-On the application of the Board of Trustees of Bellevue and Allied Hospitals the Municipal Civil Service Commission of the city of New York has approved the appointment of Dr. S. S. Gold-water, superintendent of Mount Sinai Hospital, as a con-sulting expert in hospital administration and construction. to advise the architects and to supervise and direct the completion of the plans for the new Bellevue Hospital.

completion of the plans for the new Bellevue Hospital.

The Baltimore Medical Society.—The Section in Neurology and Psychiatry held a meeting on Friday evening, October 9th, and elected the following officers: Dr. Henry R. Dunton, of the Shepherd Hospital, president; Dr. I. J. Spear, secretary; Dr. E. C. Durrow, of Johns Hopkins, third member of the executive committee. Dr. Llewellys F. Barker read a paper on Psychology, and Dr. A. P. Herring read a paper on State Care of the Insane.

The Pathological Society of Philadelphia held a meeting on Friday evening, October 16th. The following papers were read: The Report of a Case of Metastatic Carcinoma of the Lung with Pathological Findings, by Dr. George W. Norris; A Brief Report of a Growth in the Testicle Resembling Sarcoma with Metastasis to the Lung, by Dr. J. Allison Scott; Congenital Nephritis, by Dr. Howard T. Karsner.

The South Boston Antituberculosis Society held a The South Boston Antituberculosis Society field a meeting on the evening of Thursday, October 1st, and elected the following officers for the ensuing year: President, Dr. Herbert J. Keenan; vice presidents, Dr. James S. MacDonald and Dr. William H. Ruddick; treasurer, Dr. Marcellus Reeves; secretary, Dr. Edward A. Tracy. The society is planning an educational campaign against tuberculosis and lectures and exhibits are being prepared

Civil Service Examinations .- Among the positions for which examinations will be held on November 21st by the New York State Civil Service Commission is that of second assistant physician to State Hospitals for the Insame. The salary is \$1,500 to \$2,000 per annum, with maintenance. The last day for filing applications is November 14th. Full information and application forms can be obtained by postal card request to the chief examiner of the commission, Mr. Charles S. Fowler, Albany.

Union County, N. J., Medical Society.-The one hundred and fiftieth regular meeting of this society was held on Wednesday afternoon, October 14th. The programme consisted of a "symposium" on the subject of tonsils and consisted of a Symposium on the Subject of tonsis and adenoids, and papers were read as follows: Symptomatology and Treatment, by Dr. William K. Simpson, of New York; Middle Ear Complications, by Dr. Norton L. Wilson, of Elizabeth, N. J.; Dangers and Accidents following Operations, by Dr. F. C. Ard, of Plainfield, N. J.

The College of Physicians of Philadelphia.--At a meeting of the Section in Ophthalmology, held on Thursday evening, October 15th, the programme included the following papers: Some Unusual Cases of Plastic Choroiditis, by Dr. G. E. de Schweinitz; Extensive Plastic Operation for Cicatricial Extropion of Both Eyelids, by Dr. William Zentmayer; Demonstration of a Case Showing on the Optic Nerve Head in Association with Pseudoneuritis. Dr. William Campbell Posey exhibited a patient showing an unusual inflammation of the cornea.

The Philadelphia Neurological Society.-At the regular meeting of this society, held on Friday evening, Oc tober 23d, the following papers were presented: Pseudo-bulbar Palsy, by Dr. James Hendrie Lloyd; A Case of Adiposis Dolorosa in which there is present Spasticity and Contracture Involving all the Extremities, by Dr. F. X. Contracture involving at the Extendities, by D.I. F. A. Dercum; Adiposis Dolorosa—A Consideration of its Diagnosis and Pathology, by Dr. G. E. Price; Report of a Case of Adiposis Dolorosa, by Dr. G. E. Price and Dr. H. Hudson; A Case of Adiposis Dolorosa with Involvement of the Large Nerve Trunks, by Dr. P. N. Bergeron.

Medical School Inspection in Chicago.-The medical inspectors of schools in Chicago examined 9,121 school children during the week ending October 17, 1908, and excluded 377 on account of contagious diseases. Physical examinations were made of 4,475 school children, and of this number 2,130 were advised to seek medical treatment. The defects found were as follows: Nutrition, 170; anæmia, 227; enlarged glands, 642; nervous diseases, 40; amemia, 227; emiarged glands, 042; nervous diseases, 40; cardiac diseases, 48; pulmonary diseases, 31; skin diseases, 92; orthopædic, 82; vision, 232; hearing, 142; nasal breath-ing, 232; palate, 12; teeth, 1,586; hypertrophied tonsils, 1,028; adenoids, 164; mentality, 51. During the week the chool nurse made 1,017 calls at the homes of school

The Associated Physicians of Long Island.—The thirty-second stated meeting of this society will be held to-day, at 3:75 p. m., at the Garden City Hotel, Garden City, L. I. The programme will include a paper on the Treatment of Fractures by Dr. James P. Warbasse, of Treatment of Fractures by Dr. James P. Warbasse, of Brooklyn, and a paper on the Treatment of Infantile Club Foot by Dr. Jaques C. Rushmore, of Brooklyn. The discussion will be opened by Dr. Algernon T. Bristow. The officers of the society are: President, Dr. H. Beeckman Delatour, of Brooklyn; first vice-president, Dr. Frank T. De Lano, of Rockville Centre; second vice-president, Dr. Frank Overton, of Patchogue; third vice-president, Dr. Thomas R. French, of Brooklyn; secretary, Dr. James Cole Hancock, of Brooklyn; treasurer, Dr. Charles B. Bacon, of Brooklyn; Brooklyn.

Charitable Bequests .- By the death of Ariel Lathrop, of Adamy, N. Y., the Albany Hospital becomes the absolute owner of \$50,000 left to the hospital by Mr. Lathrop several years ago on the condition that he was to have the income from it during his lifetime.

By the will of Louis Bourneuf, of Lynn, Mass., the Lynn

Hospital receives \$500. By the will of Mrs. Louise Breneman, the Ann C. Witmer Home for Aged Women, of Lancaster, Pa., receives

New York Academy of Medicine.-A stated meeting of the academy will be held on the evening of Thursday, November 5th, under the auspices of the Section in Surgery. The programme will include the following papers: Surgery of the Bile Passages, with Special Reference to End Results, by Dr. John C. Munro, of Boston; Treatment of Biliary Disease as Determined at the Operation, by Dr. Howard Lilienthal; Cholecystotomy versus Cholecystectomy, by Dr. John F. Erdmann.

on Thursday, November 19th, at 8:30 p. m., the anniversary address will be delivered by Major Charles Lynch, of the Medical Corps of the United States Army, on Medical Service in a Modern Army in War, as Exemplified by the Japanese Army in the Russo-Japanese War.

Medical Registration in Ohio.—The Ohio State Board

of Medical Registration and Examination has been informed that certain medical students, having preliminary educational requirements less than those required by the Ohio law, have been induced to attend medical colleges in other States, under the impression that, after graduation, they can return to Ohio and, under reciprocity, obtain a-license to practice in that State. This is erroneous. All medical students must understand that a license from another State is accepted in Ohio in place of an examination only. In all other particulars the applicant must comply with the laws of the State of Ohio and the rules of the State Board of Medical Registration and Examination, and the preliminary educational attainments must be equal to the requirements of Ohio colleges

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statistics of new cases and deaths reported for the two weeks ending October

| | | | Oct. 24- | |
|--------------------------|--------|---------|----------|--------|
| | Cases. | Deaths. | Cases. | Deaths |
| Tuberculo is sulmonalis | 486 | 138 | 509 | 156 |
| Diphtheria | 311 | 10 | 322 | 17 |
| Measles | 110 | 2 | 133 | 6 |
| Scarlet fever | 109 | 5 | 129 | 2 |
| Smallpox | 1 | | | |
| Varicella | 3.0 | | 82 | |
| Total fever | 10.5 | 2.3 | 84 | 16 |
| Whooping cough | 2.2 | 5 | 26 | 1 |
| Cerebrospinal meningitis | -4 | - | 9 | 6 |
| | | | | |
| Totals | 1,187 | 100 | 1,294 | 204 |

New York Pathological Society.-At a meeting of this society, held on the evening of Wednesday, October 14th, Dr. Alfred Wolff-Eisner, of Berlin, read a paper entitled Theoretical and Practical Considerations concerning the Significance of the Conjunctival Reaction (Ophthalmothe Significance of the Conjunctival Reaction (Ophthalmotuberculin Test). Other papers read at this meeting were The Influence of Atoxyl on the Development of Syphilis in Lower Monkeys, by Dr. Simon Flexner; A Simple Method of Performing Serum Reactions, by Dr. Albert A. Epstein and Dr. Reuben Ottenberg; Bone Formation in the Kidney after Partial Extirpation, by Dr. Richard M. Pearce; Two-Unusual Forms of Sarcoma, by Dr. Leo Buerger; A Case of Typhoid Fever without Intestinal Lesions, associated with Cholelithiasis, Chronic Cholecystitis, and Multiple Hepatic Abscesses, by Dr. E. Martin.

The Eastern Medical Society of the City of New York.—At a stated meeting of this society, which was held on Friday evening, October 9th, Dr. Louis Fischer

held on Friday evening, October 9th, Dr. Louis Fischer demonstrated a new milk filter and milk cooling apparatus devised by Dr. Siegfried Weiss, of Vienna. Dr. Charles Goodman reported operations under local anæsthesia for thyreoidectomy for tumor of the thyreoid, and herniotomy for strangulated umbilical hernia. Dr. M. O. Magid read a paper entitled The Abuse of Medical Charity and its Remedy, which was discussed by Dr. S. S. Goldwater, Dr. S. F. Hallock, and Miss Lillian D. Wald. A paper on the Early Diagnosis of Cancer of the Stomach was read by Dr. Ludwig Kast, and among those who participated in the discussion of it were Dr. W. H. Thomson, Dr. Max Einhorn, Dr. Willy Meyer. Dr. G. A. Friedman, Dr. A. E. Isaacs, and Dr. Anthony Bassler.

The Sale of Deteriorated Food and Drugs by the Medical Department of the Army.—According to a statement by the Judge Advocate General of the Medical Department of the United States Army, the sale of deteriorated food and drugs is permissible in any State and at military posts or on reservations, transports, etc., it being held that Congress has no jurisdiction over such domestic sales. It is explained that as subsistence stores are presumed to be in proper condition upon their arrival at a military post and, in a majority of cases, become deteriorated while held in store, their sale, when so deteriorated, constitutes in a majority of cases a sale in State commerce in which the national food and drugs act would have no application. An order of the War Department would be operative if in furtherance of the pure food and drugs act, and not in conflict with State law.

Vital Statistics of New York .- During the week ending October 17, 1908, there were reported to the Department of Health of the City of New York 1,220 deaths from ail causes, of which 623 were in Manhattan, 122 in The Bronx, causes, of which 023 were in Manhattan, 122 in the Bloms, 367 in Brooklyn, 74 in Queens, and 34 in Richmond. The annual death rate in 1,000 of population was 14.17 in Manhattan, 19.43 in The Bronx, 12.82 in Brooklyn, 16.60 in Queens, 23.13 in Richmond, and in the whole city, 14.39. The death rate in the corresponding period in 1997 was 16.43. Of the total number of deaths 383 were of children under five years of age, of which 102 were due to diarrhœal diseases. There were 138 deaths from pulmonary tuberculosis during the week, as against 174 for the corresponding period in 1907. Deaths by violence numbered 88, of which 16 were suicides. There were 132 still births. Seven hundred and sixty-four marriages and 2,348 births were reported during the week.

Scientific Society Meetings in Philadelphia for the week Ending November 7, 1908:

Monday, November 2d.—Philadelphia Academy of Surgery; Biological and Miscroscopical Section, Academy of Natural Sciences; West Philadelphia Medial Association; Northwestern Medical Society.

Tuesday, November 3d.—Academy of Natural Sciences; Philadelphia Medical Examiners Association.

Wednesday, November 4th.—College of Physicians; Association and Chiladelphia Medical Examiners Association.

ciation of Clinical Assistants of Wills Hospital.
THURSDAY, November 5th.—Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Germantown Branch, Philadelphia County Medical Society; Southeastern Medical Society;

ciety.
FRIDAY, November 6th.—American Philosophical Society;
Kensington Branch, Philadelphia County Medical So-

The Mortality of Chicago.—There were reported to the Department of Health of the City of Chicago 550 deaths from all causes during the week ending October 17, 1908. as compared with 503 for the preceding week and 508 for the corresponding period in 1907. The annual death rate in 1,000 of population was 13.25, as against a death rate of 12.10 for the preceding week. The principal causes of death were: Apoplexy, 13 deaths; Bright's disease, 45 deaths; bronchitis, 10 deaths; consumption, 70 deaths; cancer, 24 deaths; diphtheria, 18 deaths; heart diseases, 43 deaths; influenza, 2 deaths; intestinal diseases, acute, 77 deaths; and the procedure of deaths. deaths; measles, I death; messinal useases, active, year deaths; measles, I death; pneumonia, 48 deaths; scarlet fever, 2 deaths; suicide, II deaths; typhoid fever, I0 deaths; violence, other than suicide, 38 deaths; whooping cough, 3 deaths; all other causes, II0 deaths. Of the total number of deaths II8 were of children under one year of age and 46 between one and five years of age.

Labor Unions and Tuberculosis.-At a recent meeting of the State Federation of Labor, held in Rochester, N. Y., the following resolutions were introduced:

Resolved, To endose the campaign conducted by the State Charities Aid Association and the State Department of Health for the prevention of tuberculosis and recommending that all central and local bodies cooperate and render all possible assistance, and To commend the Albany Federation of Labor for the establishment of a tuberculosis pavilion and recommending that all central bodies foriow the example sent by Albany

An address was delivered by Mr. Philip V. Danahy president of the board of governors of the Albany Pavilion, on the subject of tuberculosis, in which he told of measures employed to arrest the spread of the disease, and of the efforts of the labor people in Albany toward the

erection of the pavilion. The delegates from Brooklyn were particularly interested, as the Brooklyn Central Labor Union purchased sixty acres of land some time ago for the establishment of a tuberculosis hospital, but have been unable to go on with the project on account of lack of

The Harvey Society Lectures.—The first lecture of the fourth course of the Harvey Society Lectures was delivered on Saturday evening, October 24th, by Professor A. Calmette, of the Institut Pasteur de Lille, France, on Intestinal Infection and Immunity in Tuberculosis. The other lectures of the course are as follows: Fever, by Professor W. G. MacCallum, of Johns Hopkins University, on November 7th; Metabolism in Diabetes, by Professor Graham Lusk, of the University and Bellevue Hospital Medical Colleges on November 1sts. Therapeutics of Diabetes by ham Lusk, of the University and Believue riospital Medical College, on November 21st; Therapeutics of Diabetes, by Dr. Wilhelm Falta, of the University of Vienna, on November 28th; Anaphylaxis, by Dr. M. J. Rosenau and Dr. John F. Anderson, of the U. S. Public Health and Marine Hospital Service, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Professor A. B. Macallum, of the University of Toronto, on December 5th; Osmosis, by Profes A. B. Macallum, of the University of Toronto, on December 19th; The Relation of the Liver to the Metabolism of Fat, by Professor J. B. Leathes, of the Lister Institute of Preventive Medicine, England, on January 9, 1909; Some Problems in Immunity and the Treatment of Infectious Diseases, by Professor Philip Hanson Hiss, of Columbia University, on February 6, 1909; Heredity in Man, by Professor C. B. Davenport, of Cold Spring Harbor Station for Experimental Evolution, on March 6, 1909.

Nociety Meetings for the Coming Week:
Monday, November 2d.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

Medical Society.

Tuespay, November 3d.—New York Academy of Medicine
(Section in Dermatology); New York Neurological
Society; Buffalo Academy of Medicine (Section in
Surgery); Ogdensburgh, N. Y., Medical Association;
Syracuse, N. Y., Academy of Medicine; Hudson
County, N. J., Medical Association (Jersey City);
Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long
Island, N. Y., Medical Society; Bridgeport, Conn.,
Medical Association Medical Association.

Medical Association.

Wednesday, November 4th.—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine; Psychiatrical Society of New York.

Thursday, November 5th.—New York Academy of Medicine: Dansville, N. Y., Medical Association.

Friday, November 6th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York. ciety of New York.

The Health of Pittsburgh .- During the week ending September 19th the following cases of transmissible diseases were reported to the Bureau of Health of Pittsburgh: Chickenpox, I case, 0 deaths; typhoid fever, 30 cases, 2 deaths; scarlet fever, 25 cases, 4 deaths; diphtheria, 15 cases, 3 deaths; measles, 6 cases, 0 deaths; whooping cough, 4 cases, 0 deaths; pulmonary tuberculosis, 24 cases, 10 deaths. The total deaths facilities for the case of the c ro deaths. The total deaths for the week numbered 147, in an estimated population of 565,000, corresponding to an annual death rate of 13.54 in 1,000 of population. the week ending September 26th, the following cases of transmissible diseases were reported: Chickenpox, I case, o deaths; typhoid fever, 27 cases, 5 deaths; scarlet fever, 40 cases, 1 death; diphtheria, 26 cases, 2 deaths; measles, 5 cases, o deaths; whoopingcough, 3 cases, I deaths; pul-monary tuberculosis, 15 cases, 9 deaths. The total deaths for the week numbered 170, corresponding to an annual death research. death rate of 15.64 in 1,000 of population. During the week ending October 3d the following cases of transmissible diseases were reported: Chickenpox, I case, o deaths; typhoid fever, 15 cases, 4 deaths; scarlet fever, 27 cases, 2 deaths; diphtheria, 17 cases, 2 deaths; measles, 8 cases, 0 deaths; whooping cough, 3 cases, I death; pulmonary tuberculosis, 12 cases, 10 deaths. The total deaths for the week numbered 133, corresponding to an annual death rate of 12.23 in 1,000 of population. During the month of July there were 719 deaths in the city, corresponding to an annual death rate of 15.25 in 1,000 of population.

THE BOOKS OF SIX MONTHS

THE PRINCIPAL MEDICAL BOOKS PUBLISHED SINCE APRIL 1, 1908

Nearly all the medical books that have been issued by American publishers during the year, as well as many others, of foreign production, have already been reviewed in our columns. These reviews, however, are scattered throughout the different numbers of the Journal for the entire year, and are consequently not easily accessible to the reader. We feel confident, therefore, that our readers will find that the list which we have compiled here below will be of great value as a guide to the selection of books for the library. In view of the fact that the majority of the books have already received review notice, we insert only occasional brief comments. For convenience of reference, the titles of the publishing houses are arranged alphabetically.

D. APPLETON & COMPANY, New York.

LEXER.—General Surgery. By EHRICH LEXER, M. D., Professor of Surgery, University of Königsberg; translated by Dean Lewis, M. D., Assistant Professor of Surgery, Rush Medical College, and edited by Arhhur Dean Bevan, M. D., Professor and Head of the Department of Surgery, Rush Medical College. Published July 29, 1908; 450 Illustrations, Five Colored Plates. 1,041 pages. Price, cloth, \$6.00, and half leather, \$7.00. It is a presentation of the scientific principles upon which the practice of surgery is based.

P. BLAKISTON'S SON & COMPANY, Philadelphia.

Beasley.—Book of Prescriptions. Containing a Complete Set of Prescriptions Illustrating the Employment of the Materia Medica in General Use; Comprising also Notes on the Pharmacology and Therapeutics of the Principal Drugs and the Doses of their Preparations Principal Drugs and the Doses of their Preparations
According to the Imperial and Metric Systems, with an
Index of Diseases and Remedies. By Henry Beasley.
Ninth Edition, rewritten by E. W. Lucas, F. I. C.,
F. C. S. With an Introduction by Arthur Latham,
M. D. 16mo; 366 pages. Price, cloth, \$2.00.
Brubaker.—Textbook of Physiology. Specially adapted
for the use of Students. Including a Section on Physiological Apparatus. By A. B. Brubaker, M. D., Professor of Physiology and Hygiene at Jefferson Medical
College: Professor of Physiology. Pennsylvania Col-

College; Professor of Physiology, Pennsylvania College of Dental Surgery, Philadelphia. With an appenlege of Dental Surgery, Philadelphia. With an appendix giving a brief account of some essential forms of apparatus suited to those who have not large laboratory opportunities. Third Edition, thoroughly Revised and in Parts Rewritten. Colored Plates and 383 other Illustrations. 8vo; xii, 752 pages. Price, cloth, \$3.00.

CLOWES.—A Treatise on Qualitative Analysis and Practical Chemistry. Adapted for Use in the Laboratories of Colleges and Schools. By Frank Clowes, D. Sc., F. I. C. Eighth Edition, Revised. Illustrated. 1200.

DUFF.—A Textbook of Physics. By Various Writers. Edited by A. WILMER DUFF, A. M., Sc. D., Professor of Physics, Worcester Polytechnic Institute, Worcester, Mass. With 511 Illustrations. Small 8vo; xi, 680 pages. Price, cloth, \$2.75.

pages. Price, cloth, \$2.75

The preparation of a work of this grade by the collaboration of several writers is a somewhat novel undertaking. It represents the attempt of seven experienced teachers of college physics to prepare a textbook that would be more satisfactory to all of them than an existing one, the idea being, of course, that such a book would also prove acceptable to other teachers. It seems that there is a need, and there must be a place, for a work prepared in this EDWARDS.—Diseases of the Rectum, Anus, and Sigmoid Colon. By E. SWINFORD EDWARDS, F. R. C. S. Being the third edition of Cooper and Edwards' Diseases of the Rectum and Anus. Illustrated and Enlarged. 8vo; xii, 442 pages. Price, cloth, \$4.20.

EMERY.—Clinical Bacteriology and Hamatology for Practitioners. By W. D'ESTE EMERY, M. D., B. Sc. (Lond.), Clinical Pathologist to King's College Hospital, and Pathologist to the Children's Hospital, Paddington Green; formerly Assistant Bacteriologist to the Royal Colleges of Physicians and Surgeons, and some-time Lecturer on Pathology and Bacteriology in the University of Birmingham. Third Edition, Revised. University of Birmingham. Third Edition, Revised.
With 10 Plates containing 62 Figures, some in Colors.
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- 2. Miotics versus Iridectomy in the Treatment of Simple Chronic Glaucoma.-Posey states that miotics should be relied on as the sole means of treatment only in those cases which are free from attacks of so called "glaucomatous congestion," the presence of such congestive symptoms being, in his opinion, the chief indication for iridectomy; and, second, that to gain the full benefit of miotics it is necessary that they should be administered properly. Beginning in doses small enough to avoid creating spasm of the ciliary muscle, and rapidly increasing the dose until the pupil of the affected eye is strongly contracted, this degree of contraction should be maintained as long as life lasts by gradually increasing the strength of the solution, from time to time, and by instillations of the drug at intervals of every three or four hours. Conjunctival irritation may be avoided by employing only fresh and sterile solutions of the drug. Suitable cleansing washes should be administered, and attention given to the general health and especially to the condition of the bloodvessels. Careful and repeated correction of the refraction error should be made and restrictions enjoined on the use of the eyes.
- 8. Children of the Tuberculous.-Sachs observes that incidence or infection of children by tuberculous parents must, of necessity, vary with the different conditions of life. Lack of hygiene, combined with enforced closeness of contact in the homes of the poor, facilitate the more widespread dissemination of the infecting agent. While the detection of the well developed forms of tuberculosis in children is possible with the aid of the present diagnostic methods, the implantation of the tubercle germ does, no doubt, occur in a wider circle

of instances. To what extent hereditary predisposition is responsible for the development of the disease in individual cases can never be determined until the factor of infection is completely eliminated. The question of connection between tubercle infection in infancy and childhood and the manifestations of the disease in later life is still awaiting a so-The researches of von Behring, Calmette, and others are gradually turning the trend of modern medical thought toward an interpretation of the term "predisposition" as a susceptibility of the tissues dependent on antecedent infection. Of the large number of children infected through close contact with tuberculous parents, only a certain proportion present the well known manifestations of a fully developed disease of the lungs or other organs; in the vast majority the incidence of infection remains unrecognized. The increase in the frequency of tuberculosis with the advance of age from childhood to adult life makes it evident that eradication of tuberculosis in the human race can never be accomplished unless the child, first of all, is protected from infection.

9. Heart Disease.—Brown finds, naturally, many problems in heart disease. Cardiopaths may be divided into three general classes: I, Those in whom the compensation is perfect; 2, those in whom compensation is waning; and, 3, those in whom compensation is lost. The first and most fundamental step to be taken in trying to protect the cardiopath from an untimely end is publicity. Candor, attended by patient and careful explanation, will do much to assist in the correction of this widespread disease problem. Then, too, the profession should be quick to appreciate the importance of this disease problem and begin to preach with that same laudable freedom of its dangers as is now being done in the case of other medical problems. Those cardiopaths in whom the compensation is good, in whom the conductivity of the auriculoventricular bundle is good, in whom the musculature is supporting cardiac action, may need little or no medicine, but they should, nevertheless, receive the attention and direction of the medical expert as to matters affecting the lesion. The regulation of the kind and amount of exercise, the selection of vocations best suited to the support of the myocardium; the suggestion as to the curbing of certain harmful practices, the education of the cardiopath in matters of marriage, the instruction of the kind of clothing to be worn under certain conditions, the taking of baths, the character of the food, the danger of intercurrent sickness, the use of drugs, the changes of climate, and the dangers of sudden and unexpected death are some of the questions which the medical attendant should consider in treating the cardiopath in this stage. The conditions of the second and third group must be met with the same candor, but a little more skilfully and carefully. The supervision of the patients of the second group must be more constant, and the management of these cases must be more rigid. Most careful physical examinations and careful testing of the properties of the heart by instruments of precision must be conducted frequently, and remedial measures, whether medicinal or otherwise, must be instituted to regain the compensation beginning to be lost. In these cases cooperation of the patient is of the most

imperative significance, as is also the intelligent comprehension of the danger of his condition. The third group in this problem presents a syndrome only to be compared to the last stages of cancer or phthisis. But, unlike these conditions, heart disease, with its discomforting symptoms of dropsy, dyspnœa, surging heart beat and throbbing jugular, etc., offers a field for most brilliant medical achievement. So frequent are the recoveries, and so accustomed are we to these demonstrations of medical success, that proper and just credit is not accorded the physician for such efficient work, placing, as he does, a patient in imminent danger of dissolution, as surely as if he were affected by any other deadly process, in a condition of usefulness and comfort to live out the allotted life period.

10. Neisser's Vaccine in Gonorrhœal Affections.—Aronstam summarizes the results obtained by the gonococcus vaccine as follows: acute cases the vaccine acts beneficially, and the time necessary to cure the disease does not exceed four weeks. In some of the complications of gonococcic urethritis, such as epididymitis, cowperitis, and acute prostatitis, as well as in gonorrhœal adenitis and in involvement of the lymph channels on the dorsum of the penis and in posthitis of the same origin, threatening phimosis, it may be confidently relied on. No other treatment, whether systemic or local, is necessary, and irrigations and injections may be entirely dispensed with. chronic cases it is inert and acts indifferently, owing to the fact that in these conditions one has to deal with a mixed process. The conjoined use of other v-ccines, therefore, suggests itself. In these instances the gonococcus vaccine per se has reached its limitations. It is a valuable diagnostic agent. It brings to view latent or dormant conditions and thus affords a most important diagnostic means in definitely deciding on whether a given case has been actually cured, which is of inestimable value for sociologic reasons. In dormant gonococcic arthritis it will bring about a recrudescence of the disease. In this sequela it materially shortens its duration and brings about a speedy restitution to the normal. No exact rule can be laid down as regards the dosage and the intervals of the administration of the vaccines; each case must be treated individually. The future possibilities of gonococcic vaccine in particular and opsonotherapy in general are unlimited, promising to give us a new and unexplored field of scientific inquiry.

MEDICAL RECORD.

October 24, 1908.

I. Thoracic Periosteædema of Angeioneurotic Origin,

2. Some Features of the Present Crusade Against Tuber-culosis in New York City,

3. Eupyrexia By CAMILO CALLEJA. 4. Early Medical Schools and Legal Regulation,

By JAMES J. WALSH.

5. Interpretation of Blood Examinations,

By IRA S. WILE, M. S. 6. A Contribution to the Subject of Syphilitic Prophylaxis by the Use of Calomel Ointment; Report of a Case, By A. L. WOLBARST.

Thoracic Periosteædema of Angeioneurotic Origin .- Stern remarks that thoracic periosteædema of angeioneurotic origin occurs much more frequently than is generally supposed; it is closely related to the acute circumscribed superficial œdema, with which it may be associated. It may be the external manifestation of periosteal swellings on the inner side of the thorax, or it may be the visible evidence of possible angeioneurotic cedemas of the mucosa of the respiratory tract disturbing the intrathoracic equilibrium. If rightly interpreted, it will always prove of diagnostic aid. The phenomenon, which is of a fleeting nature, but tends to recurrence, appears oftener in women than in men, and seems to stand in some connection with the catamenia. A prognosis as to the period of its ultimate disappearance cannot be made, but the outlook concerning its gradual diminution and that of its concomitants is very encouraging. The phenomenon requires no treatment in the majority of instances; remedial measures, however, when indi-cated, invariably call forth temporary and, occasionally, also more lasting amelioration of the sub-

jective and objective symptoms.

3. Eupyrexia.—Calleja defines eupyrexia as the pretuberculous fever, the word meaning good fever, that is, the best of all fevers, a disease almost exclusively belonging to youth and children. There are five degrees of pretuberculous affections: Neuroses, hyperæmias, fevers, inflammations, and granulations. Moreover, there are complex pretuberculous affections in which two or more of the elemental ones, just mentioned, are united. Eupyrexia is a very important and frequent disease, especially in young people, and is manifest in different forms, but the principal may be reduced to four: (1), Pseudotypic eupyrexia, which is the most typical. Belonging to this variety are many of the cases hitherto diagnosticated as intestinal infections, without specifying the cause; also many other fevers qualified as attenuated typhoids, and a great number of catarrhs of the digestive organs considered as grippal. (2) Pseudorheumatic eupyrexia, to which belong many of the cases generally qualified as rheumatic fevers. (3) Pseudopneumonic eupyrexia, which is marked by symptoms of congestion of the respiratory organs like bronchitis, transitory pneumonia, and, when it lasts long, sometimes has the appearance of an incipient consumption. (4) Pseudopaludic eupyrexia, to which belong almost all paroxysmal fevers which are not malarial and are neither septic nor pyæmic. Our first aim in eupyrexia must be to prevent hypoxygenia, that is lack of reoxygenation in the organism, which may be either primary or secondary. Primary hypoxygenia is a general asthenia due to imperfect breathing and an insufficient intake of oxygen, so that there is an imperfect compensation of the oxygen we constantly lose. Secondary hypoxygenia may be either general or local; the former is at times caused by chronic infections like lues, or chronic intoxications like alcoholism, sometimes by primary anæmia resulting from poor alimentation; and also it may be produced by a dyscrasia, especially when the individuals are narrow chested. Local hypoxygenia may be produced by traumatism and also by an idiosyncrasy; this is generally inherited from ancestors suffering from sclerotic diseases, among which nicotinism, besides the disease before mentioned, is one of the most important. In secondary hypoxygenia, the want of oxygen in the system is

the result of the tissues having lost some of their power of reoxygenation on account of their presclerotic state. Complex hypoxygenia is that in which the primary and secondary forms are combined in the same subject. Sufferers from chronic hypoxygenia are predisposed to pretuberculous affections, one of which is eupyrexia; but germs are indispensable to the development of tuberculosis. once this is produced, eupyrexia is its best natural or spontaneous curative process. Hence we must help the development of eupyrexia in those suffering from hypoxygenia, for which pure air is the best recourse. Whether he breathes or does not breathe sufficient pure air may determine whether the individual suffers from eupyrexia or from consumption. Consequently, in addition to the direct preventive influence of atmospheric air, recognized by all as a means against tuberculosis, we must not follow the old saying, "starve a fever"; on the contrary, when the first week of the fever has passed, during which it will be well to restrict the diet somewhat, we must give as much and as nutritious food as the patient can digest, so that the calories, which the fever consumes, may be made up. But it often happens that the digestive organs cannot do as much work as is necessary; then we must prescribe some preparations to help the metabolism, so that the bacilli become less virulent and the sufferer may resist the disease. For this purpose we may prescribe the phenol derivates, the arsenicals, one of the colloidal forms of silver, and organic preparations such as tuberculin, always taking care to use them in small doses, as in eupyrexia they merely produce a stimulating effect upon the cells.

BRITISH MEDICAL JOURNAL.

October 10, 1908

The Varieties of Malignant Endocarditis,

Bees' Stings and Rheumatism, By E. W. A. WALKER. Aneurysm of the Heart Due to Syphilitic Gummata, By P. W. BASSETT-SMITH.

By J. L. Todd.

(Seventy-sixth Annual Meeting of the British Medical Association).

Association).

Section of Medicine.

Discussion on the Etiology of the Degenerative
Changes in the Aorta, Introduced by G. N. Pitt.

Results Obtained in the Treatment of Pulmonary Tuberculosis by the Class Method,

An Exocardial Murmur Often Misinterpreted, By J. E. SQUIRE By J. H. PRATT.

Remarks on the Arthropathics of Acquired Syphilis, By R. WATERHOUSE.

An Attempt to Prevent the Adhesion of the Pleura By O. GRÜNBAUM and W. O. PITT.

10. The Clinical Estimation of Blood Pressure: ssure: The Finger By W. Russell. and the Hæmomanometer, A Case of "Apyrexial Typhoid,"

By G. CARTER. By A. F. HERTZ. 12. Constipation,

12. Constipation,
13. Sciatica and Its Treatment,
13. Sciatica and Its Treatment,
14. The Treatment of Chronic, Gastrie, and Duodenal
Ulcer with Antilytic Serum,
15. Human and Bovine Tuberculosis, with Special Reference to Treatment by Different Kinds of Tuber
Culin,
16. Service A. P. State Constitution of Tuber
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17. Service A. P. State Constitution of Tuber
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Section of Dermatology. 17. Syphilis, with Special Reference to Experimental Work

on the Subject By A Netser 18 The Definitionized as Common to Main and Animals, By R. Sarourann.

Section of Laryngology, Otology, and Rhinology.

19. Discussion on the Methods of Dealing with Suppura-

19. Discussion on the Maxillary Sinus,

introduced by Sr.C. Thomson.

20. On the Permanence of the Improvement in the Shape
of the Nose Obtained by Paraffin Injection,

By W. DOWNIE. 21. Some Observations on the Results of the Application of Barány's Tests to "Deaf Mutes,"

By A. R. TWEEDIE,

1. Malignant Endocarditis. — Taylor states that it must be borne in mind that malignant endocarditis is a form of pyrexial complaint which may be easily confounded with typhoid fever, tuberculosis, pneumonia, or other severe infection; that it has no one definite course or duration; that, as a rule, it is characterized by a valvular lesion, by pyrexia, by other signs of general infection, and by the evidences of vascular obstruction or embolism; that in different cases pyrexia may be absent or murmurs may be absent, or there may be no evidence of vascular obstruction; that while some cases resemble typhoid fever, others pyæmia, while in others pyrexia is grafted on marked cardiac symptoms, in others cerebral symptoms are prominent; there are cases which can come under neither of these groups, and others which may be included in two or three.

2. Bees' Stings and Rheumatism.-Walker has investigated the popular belief that the poison of bees is protective against rheumatism and may also be employed for its cure. The material collected establishes nothing beyond the fact that the belief does exist. But it is highly suggestive, and in the light of recent observations as to the possible relationship between some of the phenomena of acute rheumatism and an abnormal production of formic acid in the body under the action of a streptococcal microorganism, it should be investigated further. Terc, a Styrian physician, has carried out the bee sting treatment for many years, and asserts to have had most excellent results. In rheumatic subjects, secondary itching and swelling does not follow the sting, and finally a condition of immunity is obtained. Couch alleges to have found formic acid a marvellous remedy in rheumatic conditions and in arthritis deformans. After a preliminary injection of cocaine, a two and one half per cent. solution of formic acid is injected under the skin in the neighborhood of the painful joints. Twelve or fifteen injections are made in one day, and are repeated every day or every other day until the pain ceases.

9. Prevention of Pleural Adhesion .- Grünbaum and Pitt suggest that if it were possible to keep the two layers of the pleura apart for some weeks after the inflammatory process subsides, adhesions would either not occur, or if they were formed, they would not be so dense. The obvious method is to inject fluid into the pleural cavity. Such fluid must possess two characteristics: (1) Absence of toxicity; (2) slow absorption. Liquid paraffin answers the requirements. In five cases treated in this manner there were no untoward symptoms, and the movements of the two sides of the chest became equal. But Litten's sign was not reestablished.

10. Blood Pressure.-Russell contends that the trained finger is still the only means of estimat-

ing blood pressure in clinical work; that in using the hæmomanometer the vessel wall becomes a disturbing factor whenever pathological conditions are dealt with, and that in the high pressures obtained from thickened arteries the arterial wall is the pre-

dominant partner.

18. Dermatomycoses. — Sabourand discusses the various dermatomycoses common to man and animals-favus, microsporous, and trichophytous. Cutaneous epidermic ringworms are cured by tincture of iodine diluted with five times its volume of alcohol, Ringworms of the hairs originating from animals are less tenacious and more inflammatory than the ordinary ringworms. When they evolve in the type of Kerion the treatment must moderate the inflammation by emollients and attempt absolute local cleanliness (cleaning, epilation). When they evolve without inflammation, radiotherapy well managed becomes the method of election, as in the common ringworms of the child.

19. Maxillary Sinus Suppuration.—Thomson states that in cases of suppuration of the maxillary sinus treated by lavage, the age of the patient does not influence the result. Lavage is to be preferred in patients of advanced years. The existence of nasal polypi does not make the radical operation imperative—simple irrigation may cure such cases. In long standing cases due to the pneumococcus or staphylococus lavage should be employed. But when due to the streptococcus the radical operation should be advised. When lavage is adopted, an intranasal operation should be preferred to the alveolar route. The only satisfactory method for the radical operation is through a large opening in the wall of the canine fossa.

LANCET.

October 10, 1908.

1. Hospitals, Public Medicine, and Medical Studies, By SIR T. C. ALBUTT.

Abstracts of Introductory Addresses Delivered at the Opening of the Medical Schools,
 By C. Slater, Sir J. F. H. Broadbent, H. Sainsburg, A. Case of Division of the Auditory Nerve for Painful Tinnitus,
 A Case of Division of the Auditory Nerve for Painful Tinnitus,
 The Serum Treatment of Cerebrospinal Fever in the City of Glasgow Fever Hospital, Belvidere, between May, 1906, and May, 1908.
 By J. R. Currie and A. S. M. Macgregor.
 An Attempt to Rehabilitate the Permanganates,
 By E. C. Bonsfield.

By E. C. Bonsfield.

Division of Auditory Nerve for Tinnitus. -Ballance reports the case of a woman, aged forty-nine years, upon whom he performed division of the auditory nerve for painful tinnitus, with entire success. This operation is a means of relieving a patient from distressing tinnitus and vertigo not amenable to other measures. Such patients are almost invariably deaf on the affected side, so that no sacrifice is made by cutting off the labyrinth from its connection with the brain. The operation being undertaken for disease of the labvrinth or its ganglia does not give rise to that group of symptoms which follows division of the auditory nerve or extirpation of the labyrinth in animals. moval of the semicircular canals cannot be expected to relieve a painful tinnitus. Either the cochlear ganglion must be destroyed or the cochlear division of the auditory nerve divided. Just as in division of the fifth nerve for epileptiform tic we may hope some day to spare the motor root which is in no way concerned in the disease, so in division of the auditory nerve we may hope to spare the nerve of Wrisberg, which is in no way concerned with auditory symptoms. Labyrinthine symptoms have their origin in the cochlear ganglion or in the vestibular ganglion or in both, but we cannot yet think of a method for separating surgically the cochlear and vestibular divisions of the auditory nerve so as to spare the one or the other, as the symptoms may in-

4. Serum Treatment of Cerebrospinal Meningitis .- Currie and Macgregor base their paper upon a series of cases of cerebrospinal meningitis observed during the recent epidemic of the disease in Glasgow; 330 cases were seen during two years, of which 105 were treated with antimeningococcic serum. In all but a few cases, each case was bacteriologically verified. Four different sera were used for treatment, with varying rates of case fatality. No opinion is given regarding the relative merits of the sera. Of the 105 patients so treated, thirty-nine recovered. The effects of the serum are considered in two ways-clinically and statistically. Clinically it was found that spontaneous improvement in the condition of patients was liable to occur during the natural course of the disease, alike in the acute group of cases with their critical recoveries, and in the chronic group with their oscillations between betterment and relapse. After serum treatment in the acute phase in certain cases, the temperature suddenly fell and the symptoms passed, but as noted above this early favorable termination was by no means uncommon in untreated cases. In the chronic cases also, the clinical appearances after serum treatment were equivocal. In some cases decrease of restlessness, headache, and general irritability occurred on the day following administration; in other cases two days later. In some cases the improvement was lasting; in others the symptoms recurred. Some cases again which had several injections of serum reacted differently with the different injections. were not prevented by serum treatment, either in the acute or chronic phases of the disease. In their influence on the phenomena of the disease, frequent injections and large injections did not differ from injections at longer intervals or in smaller quantity. On these observations the writers base their conclusion that the administration of serum in their cases was followed in individuals by no consistent modification of the natural course of the disease. Turning now to the statistical side of the question, of the 330 cases eighty-three patients recovereda case fatality of 74.8 per cent., which is slightly higher than in epidemics elsewhere. Of the 105 serum treated cases sixty-eight patients died, a fatality of 64.8 per cent. Of the 225 untreated cases 179 patients died, a fatality of 79.5 per cent. Considered with reference to the number of cases involved and also with reference to the fact that many cases admitted when moribund did not receive serum treatment, the difference between these percentages is barely significant. The mortality was highest among the patients in whom serum treatment was begun during the early days of illness.

writers ascribe this to the special virulence of the acute phase of the disease in the Glasgow epidemic. The authors' conclusions were generally negative with the following important exception: When serum treated survivors of the first ten days were compared with untreated survivors in respect of case fatality, they found that the treated patients recovered in greater number, and the difference between the respective percentages was sufficient to imply that serum treated patients who survived the first ten days of illness had a better chance of life. This suggests that the serum, while unable to arrest the disease outright, was yet able to hamper its progress, aiding in this way the natural defenses of the body. Most of the injections were given subcutaneously, and the writers admit that better results are obtained by injection into the spinal theca, after the withdrawal of spinal fluid.

5. Permanganate Disinfection. - Bonsfield states that except for popular use and upon vague and indefinite lines the permanganates have almost been dropped as disinfectants. The permanganates have many qualities which, given a reasonable disinfectant power, entitle them to consideration. Their very great power as generators of nascent oxygen, their nonpoisonous character, their cheapness, and lastly their distinctive color, are all features of value, while they alone possess the power of destroying the odor of putrescent matter, and of thus affording, in the absence of odor, a very evident, if somewhat rough and ready, criterion of the amount of disinfection which has been accomplished. Finally, they have the advantage of leaving the substance to which they have been applied, whether solid or liquid, in a condition in which it is incapable of giving rise to disease either by the bacteria contained in it or by their products.

THE GLASGOW MEDICAL JOURNAL. October, 1908.

- An Obstetric Diary of William Hunter, 1762-1765 (Continued), Edited, with Notes, by J. NIGEL STARK.
- 2. Multiple Telangiectases: Three Cases in One Family,
 By ARTHUR J. BALLANTYNE.
- 3. The Choice of a General Anæsthetic,

 By J. King Patrick.

4. A Case of Facial Paralysis, with Remarks on Surgical Treatment of this Affection,

By CHARLES GREENE CUMSTON. 3. The Choice of a General Anæsthetic.-Patrick says that the choice of a general anæsthetic is a question to which too little attention is given, and it is impossible in the widely varying conditions met with in practice to use one anæsthetic only to the exclusion of all others. Such a procedure is unscientific, and by no means devoid of danger. For induction, ethyl chloride or nitrous oxide followed by other is to be preferred, followed in turn by chloroform or a mixture of chloroform and ether if the operation is prolonged. He does not favor the use of ether by the closed method for operations occupying more than fifteen to twenty minutes. Mixtures of chloroform and ether are not used as freely as they might be, and are preferable to pure chloroform in very many cases, especially in the hands of the inexperienced. In dental and rectal cases chloroform is in the very large proportion of cases

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBER-CULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 813.)

SECTION II.

Specific Therapy of Pulmonary Tuberculosis. Part I, Tuberculin and Its Derivatives.

The Treatment of Tuberculosis by Tuberculins, and More Especially by Béraneck's Tuber-culin.—Dr. E. Béraneck, of Neuchatel, said that the results of attempts at antituberculous immunization up to the present time had been relative only. The results, however, were sufficient to enable one to affirm that homotypical or heterotypical tubercle bacilli were capable of conferring marked resistance upon inoculated animals. The biochemical characters of the tubercle bacillus were such that, although it might act as a "vaccine," it could not be used in its natural state in the treatment of human beings suffering from tuberculosis. Therefore it was necessary to make use of the extracellular toxines or of the intracellular toxines for the purpose of human therapy. The immunizing properties of the toxines of the tubercle bacillus justified, in the opinion of the writer, the utilization of these toxines as a specific treatment of tuberculosis.

Filtered Broth of the Bacillus of Human Tuberculosis as a Curative Agent in Tuberculous Affections of Man .- Dr. G. DENYS, of Louvain, said that since 1896 he had used a product obtained by filtering a culture of human tubercle bacilli grown upon peptonized and glycerinated bouillon through a porcelain filter. This product was used without modification by physical or chemical agents. It was equivalent to diphtheria and tetanus toxines. When a suitable dose was given, it produced inflammatory phenomena at the site of the injection, rise of temperature, nervousness, malaise, weakness, loss of appetite, and a return of the general symptoms of the disease or the appearance of new symptoms. Marked reactions were obtained with less than 0.001 milligramme. The author was convinced of the possibility of curing human tuberculosis by a complete immunization with this filtered broth, which he termed "F. B." He also maintained that he could succeed in giving as large doses as one cubic centimetre without appreciably injuring the patient's health. In the use of "F. B." all reactions were avoided except the lightest ones. Even the lighter reactions too frequently produced were considered harmful and dangerous. He began with a very small dose; 0.0005 to 0.0001 milligramme for an apyretic tuberculous patient, and 0.0000005 to 0.000001 milligramme for a slightly feverish patient. He never injected during a reaction or when a reaction was just ending; he allowed an interval of from one to several days between the end of one reaction and the next injection. He never increased the dose when there had been the least reaction. If the reaction was strong, he reduced the next dose. In general, the adaptability of individuals to the injections and the improvement of the disease in them went on hand in hand. As a result of twelve years' experience, he alleged almost certain cure in cases of "closed pulmonary tuberculosis." In apyretic, ulcerated pulmonary tuberculosis the infection was generally arrested, and the less advanced the lesions the more complete would be the cure. Patients who had had fever for a long time were less likely to be benefited, on account of the extent of the lesions. During the hectic period the chances of recovery were small. In pleuritis, laryngitis, enteritis, peritonitis, adenitis, osteitis, arthritis, and cystitis a large proportion of cases were cured. The treatment with this filtered broth did not exclude treatment by other methods. If the rules above mentioned were followed out, the treatment was absolutely inoffensive.

Antibacterial or Antitoxic Immunization in Tuberculin Treatment.—Dr. Edward L. Trudeau, of Saranac Lake, N. Y., said that there were two theories concerning the action of the biological products which were being used in the treatment of tuberculosis—one, the "vaccination" theory, which sought to produce immunity by the injection of the bacilli; and the other, toxine immunization, which attempted, by giving increasing doses of the toxine, to produce the greatest degree of toleration of the chemical poison of the bacillus. Neither method was quite satisfactory, owing to our imperfect knowledge of the mechanism of the immunizing process. At the present writing the reader preferred to adhere to the conception of an immunity that was principally antitoxic as produced by the treatment, and he considered tuberculin habituation its essential feature and the best guide to the dose. If toxine immunization was accepted as the essential feature of treatment and the guide to the dose, instead of measuring the degree of a questionable antibacterial immunity by the opsonic index or attempting to produce it more or less empirically by a series of reactions, the severity of which we could in no way control, the main features in our treatment would be: First, to raise the tolerance of tuberculin to the highest point attainable in each case by an almost imperceptible and long continued progression in doses. Second, to avoid general and local reactions as much as possible and to consider them merely as evidences of intolerance. Third, to follow no arbitrary rule as to rate of increase or maximum dose to be reached; but to be guided merely by the degree of toxine tolerance of each patient as shown by the symptoms and the general conditions, whether the highest individual maximum dose attainable was only a small fraction of a milligramme or a cubic centimetre or more.

PART II, SERUM TREATMENT.

The Maragliano Serum Treatment at the Henry Phipps Institute.—Dr. LAWRENCE F. FLICK, of Philadelphia, said that twenty members of the staff of the Phipps Institute had used the Maragliano serum and had reported upon the results obtained. Their consensus was that the serum had no specific value. The cows that had been used for making the serum were tested for tuberculosis and were found to be free from the disease. They were guarded against infection and were immunized by injections with material recommended by Maragliano. The serum given by them seemed to be as

satisfactory as the imported serum. One of these cows died of general tuberculosis, and the other cow, when she was killed, was found to be slightly tuberculous. These occurrences raised the following questions: "Can an animal give an immunizing serum and itself not be immune? Does the withdrawal of serum from an animal deprive it of its protection against the tubercle bacillus?"

The Untoward Effects Following the Use of Maragliano's Serum.—Dr. H. R. M. LANDIS, of Philadelphia, said that, of forty-one cases of tuberculosis treated with Maragliano's serum, seven, or seventeen per cent., showed evidences of marked supersusceptibility, such as suffused face, dyspnæa, cardiac oppression, rapid pulse, lumbar pain, muscular tremors, and a sense of impending death. The were no fatalities. There seemed to be no definite time for the occurrence of these phenomena of anaphylaxis; the symptoms had developed after the third to the twenty-second injection. The doses had been from one to three cubic centimetres of the serum. The patients who were treated with this serum were all with advanced or moderately advanced cases, and were confined to bed. Ambulant cases did not show anaphylaxis; four of six ambulant patients had the "serum disease." Skin eruptions were seen in six cases. The other phenomena were herpes labialis in one case, herpetic eruption about the site of the injection in three cases, severe inflammatory reaction at the site of the injection in seven, enlarged and tender lymph nodes in ten, severe joint pains in three, and severe lumbar pain

SANATORIA, HOSPITALS, DISPENSARIES, AND HOME TREATMENT FOR THE TUBERCULOUS.

The Value of Sanatorium Treatment. -ARTHUR LATHAM, of London, said that sanatoria were essential to the successful treatment of pulmonary tuberculosis on a large scale, and that they were essential to any scheme directed toward the eradication of the disease, provided they were used intelligently. The majority of sanatoria, however, were inefficient. The following objections might be advanced against sanatorium treatment: Sanatoria were regarded by some physicians as sufficient in themselves for the management of cases of tuberculosis and as certain to effect a cure in nearly every The erection of sanatoria cost too much money. It was held by many that it would be impossible to provide the necessary funds to pay for the treatment of the majority of sufferers. When the head of a family was at a sanatorium it was very difficult to make arrangements to support the dependent members of that family. It was, furthermore, difficult to find work for the head of the family on his return from the sanatorium. On the other hand, the value of sanatorium methods was increased by the use of tuberculin. The treatment in a sanatorium was of great value from the point of view of education. The value of the treatment was much increased by the knowledge obtained from the observation of the patients treated in them, concerning autoinoculation and the response of the recuperative forces to the action of tuberculin.

Graduated Labor in Pulmonary Tuberculosis.

—Dr. M. S. PATERSON, of Frimley Sanatorium.

England, said that it was erroneous to believe that

work was to be employed in the treatment of every case of pulmonary tuberculosis and at all times. The system of graduated labor at the sanatorium of which the reader had charge began with extreme rest. It had been shown that the opsonic index was modified by exercise in cases of pulmonary tuberculosis, as well as that the temperature was influenced by it. This influence upon the opsonic index and the temperature was considered to be due to the toxines produced at the seat of the lesion, autoinoculation, in other words. In the Frimley Sanatorium patients with a temperature of 99° F. and over, and headache, were sent to bed, and were not allowed to wash themselves or to go to the lavatory. Every possible means was adopted to prevent nonproductive coughing attacks. The graduated exercises were begun after the temperature had reached normal, a constant watch being kept upon the curve. amount of work done was gradually increased under constant supervision until such time as they could perform the heaviest work without a rise of temperature. The symptoms indicating autoinoculation were loss of appetite, the performance of the work as though it required considerable effort, an irregular swinging temperature, usually below normal, a temperature of 99° F., with headache.

The Effect of Exercise on the Opsonic Index

of Patients Suffering from Pulmonary Tuberculosis.—Dr. A. C. Inman, of Brompton, London, said that autoinoculation occurred spontaneously in the febrile stage of pulmonary tuberculosis. In a less active stage these autoinoculations did not occur spontaneously, but they were produced by exercise or movement sufficient to affect the focus of the disease. Autoinoculation was manifested by a variation in the opsonic index. Such a variation did not occur in nontuberculous subjects. When graduated exercises or graduated labor methods were being used in the treatment of pulmonary tuberculosis, tuberculin elaborated from the patient was being used in the treatment of the condition. Of the patients investigated at the Brompton Hospital, ninety-five per cent. had a high opsonic index at some time during the day. These patients, however, were all doing appropriate work and had normal temperatures. A rise in the temperature corresponded with a negative opsonic phase, and indicated an excessive autoinoculation, which required rest in bed for its cessation. When active exercise was followed by no variation in the opsonic index, when a variation had resulted on former occasions, the presumption was that the disease was arrested. He was of the opinion that patients might be classed as having had the disease arrested even though there were still tuberele bacilli in the sputum.

The Application of Rest and Exercise in the Treatment of Tuberculosis.—Dr. F. M. POTTENGER, of Monrovia, California, said that the functions of the body were best carried on when the alternation of rest and exercise could be prescribed in suitable proportions. The amount of each of these factors must be determined by the natural resisting power of the patient and the extent of the disease present in him. In prescribing rest and exercise the conditions of the respiratory, circulatory, digestive, and muscular systems must all be considered, and special attention must be directed to the condition of the heart and the ability of the patient to exercise

without causing fatigue, increase of cough, dyspnœa, or rise of temperature. Exercise was the cause of autoinoculation, on account of the passage of toxines from the diseased area into the blood stream. The symptoms resulting were practically the same as those following an injection of tuberculin. In such conditions, however, the dose of tuberculin could not be controlled; the patient received the dose at a time when he was tired, and when he was not able to respond to his fullest capacity with the production of antibodies. Such a method of autoinoculation could not be considered a scientific method of administering bacterial "vaccines" or toxines. If work was to take the place of carefully prescribed exercises in treating charity patients, the work must be prescribed according to the needs of the individual, and not according to a routine list made out for another No patient should be allowed to do work which was not consistent with his powers of endurance. No patient should ever have a task assigned to him which he could not leave at the moment it began to tax his strength.

(To be continued.)

Book Aotices.

(We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.)

A Manual of Fever Nursing. By REYNOLD WEBB WILLOX, M. A., M. D., LL. D., Professor of Medicine at the New York Postgraduate Medical School and Hospital, etc. Second Edition, Revised, Illustrated. Philadelphia: P. Blakiston's Sons & Co., 1908. Pp. 229. (Price, \$1.)

Professor Wilcox has collected his lectures on fever nursing which he delivered to the nurses of St. Mark's Hospital, of New York, during the season of 1907 and 1908. The subject has been very completely and comprehensively treated, in accordance with the present state of practice, and the thirteen illustrations, mostly specimens of temperature charts in different diseases, have been well selected.

The book is indeed a manual, as it does not necessitate any preliminary knowledge on the subject, but begins with the definition of fever, its causes, physiology, varieties, etc.; demonstrates the thermometer and how to use it; treats of the pulse and respiration; speaks of the treatment, diet, and disinfection; and leads up to the continued and intermittent fevers, the fever in exanthemata, and thermic fever. It is certainly a very good compendium on the subject.

The Ready Reference Handbook of Diseases of the Skin.

By George Thomas Jackson, M. D., Professor of Dermatology, College of Physicians and Surgeons, New York, etc. With 99 Illustrations and 4 Plates. Sixth Edition, Thoroughly Revised. New York and Philadelphia: Lea & Febager, 1668. Pp. 17 to 737.

Dr. Jackson's excellent handbook has been conscientiously revised, and new articles have been added on black tongue, dermatitis verrucosa, keratosis follicularis contagiosa, keratosis senilis, lichen obtusus, melung, pseudo-pelade, and sporotrichosis hypodermica. Several of the illustrations also are

The book, thus well brought up to date, will doubtless hold its own for a long time to come as a very convenient and trustworthy manual.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Report on the Prevention of Malaria in Mauritius. By Ronald Ross, D. P. H., F. R. C. S., D. Sc., LL. D., F. R. S., C. B., Nobel Laureate, Président honoraire de la Société médicale de l'Île Maurice, etc. London: Waterlow & Sons, Limited, 1908. Pp. ix-202.

A Textbook of Operative Surgery. Covering the Surgical Anatomy and Operative Technic involved in the Operations of General Surgery. Designed for Practitioners and Students. By Warren Stone Bickham, M. D., Phar. M., Junior Surgeon, Touro Hospital, New Orleans; late Surgeon to Manhattan State Hospital, New York, etc. Third Edition, Greatly Enlarged. Containing 854 Illustrations. Philadelphia and London: W. B. Saunders Company, 1908.

High Frequency Currents. By Frederick Finch Strong, M. D. Instructor in Electrotherapeutics at Tufts College Medical School, Boston. With 183 Illustrations in the Text. New York: Rebman Company, 1908. Pp. xix-289. (Price,

Report from the Pathological Department, Central In-

diana Hospital for the Insane. 1903-1906. Pp. 392.
Venoms, Venomous Animals, and Antivenomous Serum Therapeutics. By A. Calmette, M. D., Corresponding Member of the French Institute and of the Academy of

Member of the French Institute and of the Academy of Medicine, Director of the Pasteur Institute, Lille. Translated by Ernest E. Austen, F. Z. S. New York: William Wood & Co., 1908. Pp. xvi-493. (Price, \$5.)

Operative Midwifery. By J. Munro Kerr, M. B., C. M., Glasgow; Fellow of the Faculty of Physicians and Surgeons, Clasgow; Obstetric Physician, Glasgow Maternity Hospital, etc. With 294 Illustrations in the Text. New York: William Wood & Co., 1908. Pp. xi-795. (Price, \$6.)

Textbook of Nervous Diseases and Psychiatry. For the Use of Students and Practitioners of Medicine. By Charles L. Dana, A. M., M. D., LL. D., Professor of Nervous Diseases in Cornell University Medical College, etc. Seventh Edition. Illustrated by Two Hundred and Sixty-one Engaryings and Three Plates in Black and Colors. New York: William Wood & Co., 1908. (Price, §5.)

Angina Pectoris. Von Dr. Louis Peiser. Arzt am deutschen Hospital und deutschen Dispensary der Stadt

deutschen Hospital und deutschen Dispensary der Stadt New York. Stuttgart: Ferdinand Enke. 1908. 106.

The Bone Marrow. A Cytological Study forming an Introduction to the Normal and Pathological Histology of the Tissue, more especially with Regard to Blood Formation, Blood Destruction, etc. Together with a Short Account of the Reactions and Degenerations of the Tissue in Disease. By W. E. Carnegie Dickson, M. D., B. Sc. Edin., F. R. C. P. Edin., Lecturer on Pathological Bacteriology and Senior Assistant to the Professor of Pathology in the University of Edinburgh, etc. With Colored Plates and Microscopical Photographs by Richard Muir. New York, London, Bombay. and Calcutta: Longmans, Green & Co., 1908. Pp. ix-153. 1908. Pp. ix-153.

The Dissociation of a Personality. A Biographical Study in Abnormal Psychology. By Morton Prince, M. D., Professor of Diseases of the Nervous System, Tufts Medical College, etc. Second Edition. New York, London, Bombay, and Calcutta: Longmans, Green & Co., 1908. Pp.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A. M., M. D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York, etc. Fourth Edition, Revised and Entrged. Illustrated with 126 Engravings and 7 Colored Plates. New York and Philadelphia: Lea & Febiger, 1908. I'p. 604.

Emergency Surgery. For the General Practitioner. By John W. Sluss, A. M., M. D., Professor of Anatomy, Indiana University School of Medicine, etc. With 584 Illustrations, some of which are Printed in Colors. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xi-692. (Price, 53 50.)

Technique précise de radiothérapie et de radioscopie (instrumentation pratique). Par le Dr. Paul Vaudet, de la Ficulté de médecine de Paris. Préface de M. E. Gaucher, professeur à la Faculté de médecine de Paris, médecin de l'Hôpital Saint-Louis. Ouvrage récompensé par l'Académie de médicine (1906). Deuxième édition. Paris: Al-

émie de médicine (1906). Deuxième édition. Paris: Alfred Leclerc, 1908. Pp. 227.
Guide to the Clinical Examination and Treatment of Sick Children. Second Edition, Greatly Enlarged and Rewritten. By John Thomson. M. D. Fellow of the Royal College of Physicians of Edinburgh. Physician to the Royal Edinburgh Hospital for Sick Children, etc. With 160 Illustrations. Edinburgh and London: William Green & Sons, 1908. Pp. xxviii-629.

Diseases of the Nervous System. For the General Practioner and Student. By Alfred Gordon, A. M., M. D. (Paris), Associate in Nervous and Mental Diseases, Jefferson Medical College, Philadelphia, etc. With One Hundred and Thirty-six Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xiii_487. (Price, \$2,50.)

Der menschliche Körper in Sage, Brauch und Sprichwort. Von Professor Karl Knortz, North Tarrytown, N. Y. Würzburg: A. Stuber, 1909. Pp. 240.

Diet in Infancy. The Essential Introduction to the Study of Disease in Childhood. By A. Dingwall-Fordyce, M. D., F. R. C. P. Ed., Extra Physician to the Royal Hospital for Sick Children, Edinburgh. Edinburgh and London: William Green & Sons, 1908. Pp. x-174.

Diagnose und Therapie der Gonorrhöe beim Manne. Von Dr. S. Jessner. Würzburg. A. Stuber, 1909. Pp. 164.

Atlas und Grundriss der gerichtlichen Medizin. Herausgegeben von Dr. Georg Puppe, Professor der gerichtlichen Medizin. Herausgegeben von Dr. Georg Puppe, Professor der gerichtlichen Medizin and Feebleminded Individuals. By Walter Channing, M. D., and Clark Wissler, Ph. D. New York: Published by Order of the Trustees, 1908. Pp. 349.

The Tuberculosis Infirmary of the American Museum of Normal and Feebleminded Individuals. By Walter Channing, M. D., and Clark Wissler, Ph. D. New York: Published by Order of the Trustees, 1908. Pp. 349.

The Tuberculosis Infirmary of the Home Treatment of Consumption, Troy, N. Y., 1908. Pp. 363.

First Annual Report of the Troy Tuberculosis Class. Maintained by the Society for the Home Treatment of Consumption, Troy, N. Y., 1908. Pp. 367.

Tube

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the stogeon general. United States Public Health and Marine Hospital Service, during the week ending October 23, 1908:

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Army Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Army for the week ending October 23, 1908:

Promoted from ASHBURN, P. M., Major, Medical Corps. captain, with rank from June 24, 1908.

BETTS, C. A., Medical Reserve Corps. Ordered to active duty at Fort Lawton, Wash.

BLANCHARD, R. M., Captain, Medical Corps. Relieved from duty at Fort Wingate, N. M., and ordered to Fort Sheridan, Ill., for duty.

BUCHSBAUM, MAURICE, First Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort D. A. Russell, Wyo.

CHURCH, J. R., Major, Medical Corps. Promoted from captain, with rank from May 1, 1908.

Cole, C. Le Roy, Captain, Medical Corps. Promoted from first lieutenant, with rank from May 13, 1908.

FIFE, J. D., Captain, Medical Corps. Relieved from duty at Fort Slocum, N. Y., and ordered to sail from San Francisco, Cal., November 5, for Philippine service.

FORD, J. H., Major, Medical Corps. Promoted from captain, with rank from May 20, 1908.

HENNING, O. F., First Lieutenant, Medical Reserve Corps. Granted leave of absence for ten days, to take effect about November 20th; relieved from active duty at the expiration of leave.

LEMMON, ROBERT, First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.

PARGON, J. A., First Lieutenant, Medical Reserve Corps Ordered to active duty at Fort Yellowstone, Wyo.

QUINTON, W. W., Captain, Medical Corps. Arrived in New York on sick leave of absence for one month.

Presonn, F. P., Major, Medical Corps In addition to present duties, will take charge of office of chief surcoon, Department of Dillota, during the absence of Colonel George W. Adair.

STEPHENSON, A. V., First Lieutenant, Medical Reserve Corps. Arrived in San Francisco, Cal., on the Sheridan for treatment at the Army General Hospital.

review Werrier Lacutemant Colonel, Medical Corps.
 Province have a range with rad, from May 1, 1998.

Lee A. J. M. per, Medical Corps. Promoted from cap. the settle of from May 1, 1908

Price is M. Linet Licentenant, Medical Reverse Corp. Ordered to Fort Mackenzie, Wyo., for temporary duty

Navy Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Navy for the week ending October 23, 1908.

CARPENTER, D. N. Surgeon. Detached from Naval Station, Cavite, P. I., and ordered home.

Donelson, M., Assistant Surgeon. Detached Stringham and ordered to the MacDonough. Detached from the

Morris, L., Surgeon. Ordered to the Naval Station, Cavite, P. I. (Order issued by Commander, Third Squadron, Pacific Fleet).

RIKER, G. A., Acting Assistant Surgeon. Appointed an acting assistant surgeon from October 16, 1908; or-dered to a course of instruction at the Naval Medical School, Washington, D. C.

Births, Marriages, and Beaths.

Married.

Augustin-Dewey.-In Oneonta, New York, on Saturday, August 22d, Dr. George William Augustin and Mrs. Blanche Webster Dewey.

ANDREWS-COOPER.-In New Castle,

ANDREWS—COPER.—In New Castle, Delaware, on Orange, Virginia, and Miss Margaret Janvier Cooper.

Evans—Weeks.—In Dorchester, Massachusetts, on Thursday, October 15th, Dr. George F. Evans and Miss Cecelia Claive Weeks.

En

FARWELL—SCHAEFER.—In Baltimore, Maryland, on Wednesday, October 21st, Passed Assistant Surgeon Wrey G. Farwell, United States Navy, and Miss Virginia Davis

HAWKE—HARVEY.—In Calistoga, California, on Thursday, October 15th, Mr. Albert L. Hawke, son of Medical Director James A. Hawke, United States Navy, and Miss Matilda Eloise Harvey.

NEILSON-McDougal .- In Vallejo, California, on Friday, October 16th, Passed Assistant Surgeon John N. Neilson, United States Navy, and Miss Caroline McDougal. SIEGLER—RUFE.—In Doylestown, Pennsylvania, on

Wednesday, October 14th, Dr. C. Louis Siegler, of Phila-

delphia, and Miss Mary R. Rufe.
Sonnenborn—Hess.—In Philadelphia, on Wednesday,
October 21st, Dr. George A. Sonnenborn and Miss Lillian Hess.

Van Duzen—Haines.—In Elyria, Ohio, on Tuesday, October 20th, Captain James W. Van Duzen, Medicai Corps, United States Army, and Miss Bessie Evelyn

WHITALL-OGDEN.-In Media, Pennsylvania, on Monday October 12th, Dr. J. Dawson Whitall, of Philadelphia, and Miss Mary Emma Ogden.

BALL.—In Boston, on Saturday, October 24th, Dr. Alonzo Brayton Ball, of New York, aged sixty-seven years.

Brobst.—In Bernville, Pennsylvania, on Tuesday, October 20th, Dr. John A. Brobst. aged seventy-three years.
Brodeur.—In Montreal, Canada, on Friday, October 16th,

Dr. A. Brodeur.

Cook.-In New York, on Thursday, October 22d, Dr. Irving J. Cook, aged thirty-five years

Davisson.—In Jefferson City, Missouri, on Tuesday, October 13th, Dr. A. C. Davisson.

Herring.—In Oakville, Kentucky, on Thursday, October 15th, Dr. J. P. Herring.

Henser—In Louisville, Kentucky, on Monday, October 19th, Dr. Matthew Huber, aged seventy-nine years Kentooo. In Scattle Washington, on Wednesday, Octo-ber 14th, Dr. William R. M. Kellogg, aged thirty three

In Glendale, Rhode Island, on Sunday, October

LAGE In Glendale, Rhode Island, on Sunday, October 18th, Dr. John G. Lace, of Pascoaga, aged seventy years. Prewitt.—In Mansville, Kentucky, on Thursday, October 15th, Dr. G. W. Prewitt.
Rosson.—In Boston, on Monday, October 19th, Dr. Fimma Rosson, of Wakefield, aged sixty-one years. Fassitre.—In St. Paul. Minnesota, on Monday. October 19th, Dr. Marcus Le let

New York Medical Journal

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WHOLE No. 1562.

Pectures and Addresses.

REFLEX NEUROSES ARISING FROM OCULAR AND NASAL ABNORMITIES.*

> By S. Lewis Ziegler, A. M., M. D., Philadelphia.

Attending Surgeon, Wills Eye Hospital; Ophthalmic Surgeon, St. Joseph's Hospital.

Reflex neuroses are not the property of the savage, but of civilized man. The more refined we become in the crucible of civilization, the more must we pay the penalty of that civilization through the neurotic tendencies which we either inherit or acquire. This underlying neuropathic predisposition is unfortunately present in a large proportion of the American population, and, when not inherited, is due chiefly to the irritating action of our changeable climate, some of the effects of which have been shown by Mitchell1 and Lewis2 in their study of chorea. To this and to the ambition to equal or surpass the activities of our rivals and associates may be ascribed our highstrung nervous energy, and inordinate desire to "hustle." If sooner or later there comes a nervous breakdown we may add this complication to our predisposing cause. On the other hand, the search for the locum tenens of the exciting cause has often proved to be as elusive as "the search for the glittering pearl.'

Reflex nervous disturbances have long been ascribed to perverted nerve impulses originating in peripheral end organs. Dental irritation from delayed eruptive teeth in children, phimosis, or adherent prepuce, incarceration of a nerve filament in the cicatricial plug of a uterine laceration, or an uncorrected depressed fracture of the skull, have all contributed their quota to the causation of minor epilepsy, habit chorea, vertigo, localized muscular spasms, neuralgia, neurasthenia, and gastric neu-

INFLUENCE OF THE EYE ON REFLEX NEUROSES.

That the eye is a most prominent ætiological factor in these systemic reflexes has long been conceded by careful observers. Ever since Donders, in 1864, called the attention of the medical world to the fact that the group of symptoms known as asthenopia could be relieved by the proper refraction of the eye

and the careful adjustment of glasses, our knowledge of the deleterious effects of eyestrain on the human organism has been steadily growing.

In those earlier days, when refraction was passing through its formative stages, the work of such Philadelphians as Dyer, McClure, Thomson, Norris, and Harlan in the diagnosis and correction of astigmatism was of inestimable value in the development of what we today term "modern methods of refraction." While these were the writers and lecturers of their day, there were other pioneers such as Goodman, Levis, and Morton, who gave great impetus to the work of practical refraction and won a large clientèle by their successful methods. It was not, however, until Weir Mitchell' accepted these results at their true face value, and publicly endorsed them, that the medical profession at large became properly impressed with these new truths in ophthalmology. From that day until this, a period of almost three decades, the subject of ocular reflexes has been a controversial one, those most interested ranging themselves either as enthusiastic endorsers or as uncompromising unbelievers, while the conservative middle ground was but sparsely occupied.

Curiously enough, those who have been termed the "muscle faddists" early began to make a most active crusade in favor of eyestrain as the chief cause of many reflex neuroses, later on, however, advancing the statement that muscular imbalance was the real source of these pathogenic impulses. As far back as 1876, Stevens' was impressed with the relation of evestrain to systemic neuroses, which he at first relieved by refraction alone. Gradually his attention was shifted from this and centred upon muscular imbalance6 as one of the chief causes of these disturbances, which he then corrected by the adjustment of prisms. A decade later he became obsessed by the idea that all reflex neuroses should be ascribed to muscular errors, which could only be properly corrected by partial tenotomies of the opposing muscles. While his views as a whole have been endorsed by few, many have accepted them in part, and all have given him credit for a valuable nomenclature of muscular terms, a new and practical operation for the relief of heterophoria, and much original investigation of this intricate subject.

Ranney', who was a neurologist with a penchant for the practice of ophthalmology, accepted these views in their entirety, and, while he also acknowl-

The oration in calculationage, delivered before the general most ing of the Medical Society of the State of Pennsylvania, Reading, September 24 to 26, 1995.

**Illustrates on Processes of the Norman System, 1881.

**Seasonal Relations of Chorea and Rheumatism, Medical News November 13, 1886, and Increase Pennal of the Medical September, 1862.

**Accommodation and Refraction of the Eye, 1864, p. 259.

Wedwal it is Novemal Reports. Amoust it 1884, and done of Journal of the Medical Sciences April, 1876.

"Transactions of the Medical November of November 1885."

Functional Nervous Discuses, 1887.
New York Medical Journal, February 27, 1880.

edged the necessity for the most careful preliminary refraction, which often gave the desired relief, he proceeded to examine all cases of reflex neuroses for muscular imbalance, and to perform tenotomies for their relief. He stated that he had cured many cases of epilepsy, chorea, and weak mentality. So careful an observer as the late Dr. Noyes10, who was then one of our leading ophthalmologists, placed himself on record as being conversant with many of Ranney's successful cases, and in part endorsed his views.

Following this came a veritable cyclone of heterophoric studies on the use of prisms, muscular gymnastics, and partial tenotomies for the correction of muscular errors and the relief of these complicating systemic reflexes. To this "symposium" Savage contributed much original research in muscular anomalies, operative methods, and the demonstration of new theories, always conceding, however, the therapeutic value of properly corrected ametropia" in relieving headache, migraine, and other reflex disturbances.

. Gould13 tried to stem the tide of "tenotomies" by advocating a return to the older method of prism exercises, but, not succeeding, declared "surgery the despair of medicine," abandoned all ophthalmic surgery, and devoted his attention wholly to refraction. He, however, adopted the entire symptomatology of his foes, the "muscle faddists," and stated that complete relief from this host of reflex neuroses could only be obtained by properly adjusted glasses. He undoubtedly alleged too much. Nevertheless, there is much of undisputed truth in what he says, which is all the more reason for calm, dispassionate statements.

The views of de Schweinitz14, who has voiced the feeling of the profession in the matter most fairly and concisely, are of great interest in this connection because of his well known conservatism. He says:

It is unquestionably true that fully seventy-five per cent. of ocular disorders depend on anomalies of the refraction, accommodation, and motility of the eyes. Correction of such faults is followed by the greatest good to the eye and to the general organism in which the strain has been interpreted by accommendation. terpreted by symptoms not necessarily suggestive of their origin. When one comes to think about them, these symptoms stretch out into an extraordinary train, but we have ceased to wonder, and as a matter of course investigate or cause to be investigated the eye whenever searching for the ætiology of headache of all kinds, vertigo. nausea, pseudo and habit chorea, neurasthenia, and other disease phenomena of similar manifestation. We have learned that many so called gastric troubles, tachycardia, flatulent and other types of dyspepsia, indigestions, night terrors, especially as they occur in children, may have a like origin, and we have found out that pains strangely and persistently situated in the nape of the neck, between and under the shoulder blades, at the end of the spine and deep in the matter of the neck of the spine and the neck that the neck of the spine and the neck that the deep in the mastoid may owe their origin to the same cause. These facts are widely, I think I may say universally, known, although, curiously enough, many of the most important of them find no place in the most used textbooks on general medicine

these, when he says, "Who has not seen correction

of errors of refraction relieve so called 'bilious attacks,' periodical vomiting, anorexia, indigestion, and other gastric symptoms?" The cure of grave organic ocular defects relieves similar gastric con-

Hansell¹⁶ has carefully summed up this interrelation between the eye and the general system in saying: "Any theory of the origin of disordered function which does not embrace a consideration of the ocular apparatus is unscientific and open to criticism. There are incessant demands on the peripheral organs of vision which are in direct connection with the central nervous system, and the many ways in which this connection is provocative of disordered function is a fact of deep significance in the causation of disease. The cause or association is, moreover, continually active during the life of the individual.

Many distinguished neurologists, such as Wood17, Gray18, Starr18, Féré28, and Pritchard21, have endorsed these views in part, by acknowledging the ætiological entity of uncorrected refractive errors, but not conceding the equally deleterious effects of muscular imbalance; while others, whose experience has been different, still remain unconvinced that ocular

defects can excite reflex disturbances.

The unbiased observer must concede at least four ocular factors which may become the exciting cause in producing reflex neuroses: 1, Ciliary spasm, or strain from uncorrected ametropia; 2, accommodative effort, whether in youth or old age (presbyopia); 3, muscular imbalance; and, 4, painful ciliary scar, or shrunken eyeball. As has been previously pointed out, the underlying, predisposing cause must be present and active. Hence these factors are most liable to originate reflex symptoms in the neurotic subject, while the phlegmatic individual may wholly escape their deleterious action.

I. Eyestrain from uncorrected ametropia stands

at the head of the active factors causing these annoving reflexes. It takes its origin in the ciliary effort made to overcome errors in the static refraction, or to correct axial defects. These errors are hypermetropia, myopia, and astigmatism in varying combinations. As the ciliary muscle may act irregularly, spasmodically, and unequally, its action must be wholly suspended by complete cycloplegia in order that the ametropia may be accurately measured. Having carefully ascertained the total refractive error, we must make due allowance for the free play of the ciliary muscle in prescribing the correcting glass. Failure at this point may wholly annul our efforts to remove the exciting cause. Too strong a glass will blur the vision, while too weak a cor-

the happy medium. 2. Unusual accommodative strain is a fruitful source of reflex disturbances. The accommodation should, therefore, be tested in every case, and a careful record made. Subnormal accommodation may be found in the eyes of children or youths, as

rection will not relieve the strain; hence, failure from either extreme should be avoided by ordering

[&]quot;Nonne et l'exception, in P except Smiller, 1966, p. 778.

Peppe de horier in Exil' - l. 1894.

Ver en l'except American Authors, 1893, p. 342.

Press and Spiller, p. 1997.

"Twentieth Century Practice, 1897, x.

Sagon bound an, 1899.

well as in those of adults, but it is manifested chiefly after the age of forty, when it is known as presbyopia. The eye may be quite comfortable under the distance correction and still suffer whenever near work is attempted. An additional correction for near work must, therefore, be ordered in every case of subnormal accommodation, whether young or old. Neglect of this simple measure will often result in failure to secure the desired relief.

3. Heterophoria, or imbalance of the extraocular muscles, has long been conceded to be a most vicious agent in the causation of these reflex neuroses. Errors in the vertical muscles (hyperphoria) are probably more active because harder to overcome, while the horizontal disturbances (esophoria and exophoria), although more amenable to treatment, are, nevertheless, most persistent in causing these perverted nerve impulses. We have at our command four different ways of remedying these defects: I. Correction of the error through correction of the refraction; 2, correction of the deviation by the adjustment of prisms for constant wear; 3, orthoptic training or prism exercise; and, 4, readjustment of the tendinous insertion by partial tenotomy. Some may escape these deleterious effects through monocular vision, while others with good vision in both eyes may not possess the power of binocular fusion. The physician who ignores the proper correction of muscular errors simply courts failure to relieve many systemic reflexes, by overlooking a most important exciting cause.

4. All observers agree that painful scars may cause annoying reflexes, and scars in the ciliary region are no exception to this rule. Traumatism of the ciliary body, pressure on the sharp spicules of a chorodial bone, or the undue shrinkage of an old phthisis bulbi have all demonstrated the necessity of enucleation in order to remove the exciting cause. Numerous cases of epileptiform seizure have been relieved in this way (Stevens²², Stoewer²³, Galezowski24), which simply goes to prove the contention of Landon Carter Gray that epilepsy is only a symptom, and may be either central or peripheral in origin

NASAL ORIGIN OF REFLEX NEUROSES.

Although but little attention has been given to the nasal origin of systemic reflexes, many well known observers have recorded their affirmative views. H. C. Wood has expressed the opinion that diseases and malformations of the nasal cavity, and aural lesions, may give origin to habit chorea and minor epilepsy. Pritchard coincides with these views, laying special stress on cases of obstructive disease of the nasal passages. Stoewer states that many reflexes are cured by the removal of painful scars, or irritation from the nose and ear; while Starr concedes that local spasmodic twitchings of the head and neck may possibly be caused by nasopharyngeal irritation.

That many ocular symptoms may be duplicated or caused by intranasal lesions must be accepted as a verity. There is a "deadly parallel" of reflex symptoms that will tax one's diagnostic ability to the utmost in properly locating their origin. Many such patients who pass from one oculist to another with but slight change in glasses and but little relief are what might be termed "nasal asthenopes." They will never find ocular comfort until the intranasal lesion is corrected. It is often necessary, however, by careful refraction, to eliminate the ocular element by the process of exclusion before proceeding to the nasal treatment. Nieden26, who was a pioneer in the study of the relation between diseases of the eye and nose, endorsed these views when he said: "I would add that from my own observation there are many cases of asthenopia with inability to use the eyes for any great length of time, with symptoms of dazzling, and inability to fix objects, and for which with entire absence of all pathological alterations in the eyes, or of other visible causes, we can find no other rational reason than a chronic nasal catarrh; whilst finally, all the asthenopic disturbances disappear when the nasal disease is relieved.'

What, then, are the nasal conditions that may originate these perverted nerve impulses? The three most active ætiological factors are: 1, Pressure contact; 2, hyperæsthesia; and 3, nasal obstruction.

I. The first and most important causative agent is a condition which we may term pressure contact. The middle turbinate bone is usually the offending member, and is so often wedged in between the two vascular cushions of an engorged inferior turbinate and a sensitive septal puff that many mystifying reflex impulses are originated, the most pronounced of which are localized muscular twitchings or choreiform movements of the face, head, and neck, while intense frontal headache and eyeache are more frequent effects. The middle turbinate, however, is not always the offending member. I have seen the pressure contact of a sharp sæptal spur digging into an inferior turbinate cause similar disturbances, which were promptly relieved by the removal of the spur. The pull of a contracting adhesion between the middle turbinate and the sæptum may also cause annoying reflexes.

2. Another important ætiological element is hyperæsthesia of certain areas in the upper air chambers of the nose. These sensitive points I have found to be most frequently located in a hyperæsthetic area covering the tubercle of the sæptum, which, when irritated, quickly becomes engorged by vascular dilatation, and thus makes pressure contact against the closely approximated middle turbinate. Irritation of this sensitive area is so provocative of distinctly localized eye symptoms that I have long since dubbed it "the eye spot of the nose." Supraorbital neuralgia, referred eyepain, lacrimation, burning or smarting of the lids, blepharitis, conjunctival congestion and other similar disturbances, may result from this reflex manifestation. The "therapeutic test" of this oversensitiveness may be verified by the simple act of making a local application to this area. This will frequently precipitate an attack which the patient will recognize as very similar to the condition from which he seeks relief. If this area is so sensitive to the mild touch of an applicator, what may we not expect as the result of

Unemst and Neurologist, January, 1880.
2Klimsches Monasthatt für Augenhaltwisch, 1896. p. 289
2Persent dephthalmologie, January, 1886.
2Pepper's American Technologi, p. 620.

prolonged pressure contact? In fact, we must accept as an infallible rule the dictum that pressure contact in the nose will always excite some reflex disturbance when any hyperæsthetic area is impinged upon. If, therefore, the middle turbinate interferes, it must either be removed, or broken and set over. On the other hand, if the sensitive sæptal puff is too large or becomes too easily engorged, it must be reduced or "pinned down" by interrupted linear cauteriza-

3. The third active agent is nasal obstruction, which, as Pritchard observes, may become an important pathogenic factor. We should never forget that normal respiration occurs only through the superior meatus of the nose. Interference with free breathing necessarily produces suboxidation, which, by increasing the sensitiveness of the whole system, renders it more liable to reflex disturbances. In order, therefore, to restore nature's supreme function of unimpeded respiration, it may be found necessary either to remove the middle turbinate, to shrink the inferior turbinate by cauterization, or even to excise the tonsils, if too large; for without free breathing health cannot exist.

While it is not my purpose to unduly emphasize the nasal phase of the subject in an address on ophthalmology, I shall, nevertheless, call attention under each individual heading to the possibility of such error, and where necessary, cite illustrative cases or draw comparative inferences.

INDIVIDUAL MANIFESTATIONS OF REFLEX NEUROSES.

Headache.—Headache has been conceded by all to be the one prominent symptom of eyestrain. Occasionally it is wholly absent. It is usually frontal in character and exaggerated by use of the eyes, growing worse as the day advances, reaching its crisis in the evening, and often superinducing insomnia. There is a great variation in the tolerance of the eye to high errors of refraction, but in neurotic subjects even low grade errors may create a veritable "nerve storm." This pain frequently shifts from the supraorbital to the temporal region, and at times may become vertical. More infrequently the eyeball itself develops a feeling of soreness. Occipital headache, on the other hand, is the salient symptom of disturbances in the balance of the extraocular muscles. It may be a deeply seated, boring pain, or only a stiffness at the back of the neck. usually accompanied by carsickness (panorama headache) and light annovance (theatre headache), and can thereby be distinguished from a similar headache caused by certain intranasal lesions.

Intense frontal headache on first awakening in the morning occasionally arises from eyestrain, but is usually nasal in origin, and can sometimes be differentiated by the mere act of bending forward. If there is intranasal pressure this suddenly increased flux of blood will cause exaggeration of the pain. If the patient is awakened during the night by a sudden, stablike, frontal pain, we may consider this of nasal origin, as mouth breathing allows vascular stagnation in the nasal chambers, and the long continued pressure contact often precipitates an attack of neuralgic pain. This attack may disappear on awakening, may continue

throughout the day, or may be quiescent during the day and reach its crisis at the twilight hour. A "Sunday morning headache" is usually nasal in origin, the result of prolonged pressure contact following overindulgence in sleep. A "Monday morning headache," on the other hand, is more liable to follow the indiscretion of excessive Sunday reading, and is, therefore, ocular in origin. Another morning headache of ocular origin may be the delayed manifestation of a "theatre headache" which had its origin the night before. This usually arises from one of three causes: 1, Light annoyance, in heterophoric patients; 2, unusual strain of both superior recti, from sitting close to the stage and directing the eyes upward; and, 3, the eyestrain of ametropia.

To demonstrate the necessity of carefully examining the nose when glasses fail to give relief, I will cite an illustrative case:

Case I.—A neurasthenic young lady consulted me eight vears ago for multiple head pains. She had been refracted by several excellent oculists without relief. My test met with just as indifferent success. I then advised her that the nose was at fault, but she did not accept this advice. For the next six years she passed from one office to another, "receiving but slight changes of five degrees or over in her astigmatic axis," but still without relief. When she returned one year ago she consented to have nasal treatment. I removed the middle turbinate on the side of greatest pain, and cauterized the other side. She has been most comfortable ever since, having gained in health, strength, and mental composure, and can now wear her glasses with comfort. Here both nose and eyes were at fault, but the head pains she sought relief from were wholly nasal in origin.

Migraine.—Migraine, or sick headache, occurs in paroxysms of greater or less severity at irregular intervals, and may reach the extreme condition of what is known as "blind headache." Scotoma scintillans is a very frequent symptom, and hemianopsia is not uncommon in these neuralgic attacks. Nausea and vomiting may be concomitant disturbances. While these cases often originate in high degrees of astigmatism with asymmetric axes, the lower grade errors have been known to excite similar disturbances in neurotic subjects. In the majority of these cases, however, some error in the muscular balance will usually be found (chiefly hyperphoria), which prisms may temporarily relieve, but sooner or later demands operative interference.

Many minor neuralgias about the head and face have been relieved by the proper correction of refractive errors. It may be somewhat difficult to explain the exact method of causation of such disturbances, but it is not difficult to demonstrate their cure, when relief is so promptly gained following the adjustment of glasses. Conservative men like Risley^{2†}, Hansell²⁰, Weeks²⁰, Zentmayer³⁰, and Zimmerman³¹ have recently placed themselves on record as favoring the ocular origin of migraine in at least a portion of the cases. The refractive error is, of course, only the exciting cause. If, therefore, these reflexes should reappear, the refraction must be carefully retested and new glasses ordered to correct any physical change.

CASE II.—Male, aged fifty-four, intelligent but neurotic, was wearing glasses to correct hyperopia with presbyopia, and a one and a half degree prism for hyperphoria, but with only intermittent relief from his migraine. Here par-tial tenotomy gave the desired relief, and led the patient to remark that "where once he suffered the torments of the damned after a half hour's reading, he could now read fourteen hours with comfort."

On the other hand, we must not forget that some of these cases, even though complicated with an ocular defect, are wholly nasal in origin. The therapeutic test will prove this.

CASE III.—A young lady—also a typical case—was carefully refracted while at school by a prominent oculist, and was still wearing the same glasses with comfort. There was no relief, however, from the "nerve storms" that were ushered in by light flashes, hemianopsia, excruciating headpains, and finally almost total obscuration of vision. It was found that nasal applications would yield temporary relief. Excision of the left middle turbinate and cauterization of the right inferior turbinate have brought about almost complete immunity, there having been but one mild attack during the past year.

CASE IV.—A physician had long suffered from typical migraine. A careful refraction was made, glasses ordered, and worn. Eyes are now comfortable but migraine persists. The attacks are ameliorated by local applications to the nose. The pressure contact present in the nose is un-doubtedly responsible for his suffering, but he still hesi-

tates to undergo the slight operation necessary. Localized muscular spasms.—Muscular spasms, such as blepharospasm, facial twitchings, jerking of the head, head tilting, spinal curvature, and other like disturbances have been noted as the result of ocular defects. Head tilting may come from two causes, I, the effort to bring into alignment eyes that are displaced by faulty muscular balance, chiefly in the vertical (hyperphoria), and 2, the attempt to gain a clearer view of objects through an oblique astigmatism. Spinal curvature, on the other hand, comes more frequently from inequality in the length of the limbs, causing tilting of the pelvis and displacement of the spinal column, with its attendant backache. The addition of a high heel to the shorter limb, under the supervision of an orthopædist, will promptly relieve this, as was first demonstrated by the late Dr. Goodman, who was both an orthopædist and an oculist. While blepharospasm frequently arises from eyestrain, it may also occur from loss of sleep, mental exhaustion, and excesses in coffee and tobacco. Intranasal lesions must also be reckoned with as ætiologic entities.

CASE V .-- A young lady suffered from asthenopia, blepharospasm, and occasionally some twitching at corner of mouth. Asthenopia was relieved by refraction, but twitching persisted. Excision of a tightly pressing right middle turbinate, and cauterization of the left inferior turbinate, brought relief from the spasm, and physical comfort

through improved breathing.

Case VI.—A mechanic had been suffering from left sided facial twitching and blepharospasm, rhythmic in character, occurring every two minutes, awake or asleep, for over five years. He had no error of refraction. The left middle turbinate was pressing hard against the inferior turbinate, and in places adherent to it. The middle turbinate was carefully removed. As healing progressed the gradual lessening of the spasm could be noted, first to an interval of ten minutes, then to one hour; later he passed a comfortable night, and finally but one or two mild spasms occurred during the day. Having convalesced thus far he told me he was again able to talk without making a wry face, and had secured an excellent position. He thus disappeared from observation.

Case VII A painter had suffered for twenty years with

marked facial spasm and jerking of head to the left, at the

same time protruding his tongue in a curious manner. He was hyperopic, astigmatic, and presbyopic. Glasses re-lieved the refractive error, but spasm persisted. Examination showed that the right middle turbinate was digging into the sæptum. I broke it in its middle third and set it over. Improvement was most marked, but was not permanent because contraction occurred, again bringing the bone into pressure contact against the sæptum. The middle turbinate was then excised, following which conva-lescence was progressive up to complete recovery.

Chorea.-It has been asserted by Ranney and Stevens that a majority of choreics can be relieved by the proper adjustment of glasses or by tenotomies where muscular errors exist, but other observers do not wholly accept these views. In the first place, it is exceedingly difficult to make an accurate study of ocular defects when the head movements are such as almost to prevent a satisfactory examination, and in the second place, there are many other contributing causes, such as the atmospheric conditions in March, which Mitchell and Lewis have shown to be prominent factors.

Cheney believes that choreics often recover without treatment, but is convinced that their rapid recovery after correction of muscular or refractive errors makes it more than probable that these defects bear a causal relation. Starr and Gray believe that refractive errors may cause chorea and local muscular twitching, but do not concede the possibility of muscular anomalies causing reflex disturbances. Wood33 is, however, more decided in his views when he says: "Especially are eyestrain and nasal difficulties apt to cause in childhood persistent chorea, and it is, therefore, essential in every case which resists treatment to thoroughly examine these organs." Weir Mitchell and Osler acknowledge the causal relation of eyestrain in habit chorea. My experience has convinced me that in some cases the eyes may be the exciting cause. I will cite an example.

CASE VIII.—A youth, aged fifteen, was of a nervous temperament, ambitious, and very studious, a musical prodigy He had suffered from habit chorea for two years. He acci dentally complained of his eyes, and was referred to me for refraction. A cycloplegic test revealed hyperopia with astignatism, for which glasses were ordered. There was prompt cessation of the choreic movements. I have retested him after an interval of eight years, and find him grown to be a healthy, bright young man, without any recurrence of these attacks.

On the other hand, where the element of oxidation is such a prominent factor, it would seem as though an obstructive nasal lesion would be a pathogenic entity to be contended with, even though pressure contact was present.

CASE IX.-A French girl, neurotic but dull, had more or less mental hebetude. She was thin and anæmic, with dusky skin. Following an attack of grippe she developed chorea, the chief symptom being a jerking of the head backward. There was also some twitching of the body. By supporting the head with the hand held on the back of the supporting the lead with the had been accessed and except a meek, she could eat or converse. In right nostril there were adhesions between the inferior and middle turbinate, and the middle turbinate was jammed tightly against the sæptum. She never stooped or bent over, as her symptoms at once became exaggerated and a severe headache was precipitated. The eyes were free from refractive error. The right middle turbinate was carefully removed, and the left inferior turbinate was cauterized. She was thereby freed

Medical and Suzzial Jamal, February 20, 1890
 Pepper's Dacrican Teethorn, 1, p. 631
 Abelies of Pachatres, Lamery, 1897.

from the nervous irritation, and increased oxidation has brought her rosy cheeks, a gain of thirty pounds in weight, and more mental nimbleness than she had ever before

Minor epilepsy.-Petit mal belongs to the same category as chorea. Its pathology is uncertain. Neurologists like Wood, Gray, Féré, and Stoewer believe that this condition may originate in eyestrain. Some cases, if not cured, have at least been benefited by treatment of the congenital ocular defects. Stevens, Ranney85, Gould30, Colburn37, Capps88, and Reber" have reported cases relieved by correction of refractive errors. On the other hand, Stevens, Stoewer, and Galezowski have each reported cases of reflex epilepsy from ciliary injury or irritation that were relieved by enucleation of the eyeball.

I have followed with great interest two patients who first consulted me about six years ago. One suffered from an error of refraction, and the other from a nasal lesion. Strangely they were both so fond of sweets that they indulged in "candy sprees." I do not recall having read that the ingestion of sweets is an exciting cause of epileptiform seizures. I presume physiological chemistry might explain this as due to the breaking up of the carbohydrates, and the liberation of an excess of carbon dioxide into the blood.

CASE X .- A young man with subnormal mentality, no occupation had a neurotic family history. He had an inordinate desire for sweets, and suffered from frequent epileptiform scizures. Being warned to desist from sweets, he moderated his indulgence. He was fitted with a correction tion for hyperopia and astigmatism, and has gone along in comfort for several years. He has lately consulted a colleague, who reports a relapse, but whether from the re-newal of his candy habit, or from a change in his refractive error, he has not since advised me.

CASE XI.—A young business man, after eating a pound of candy, usually at bedtime, almost invariably suffered from an attack of petit mal about midnight, much to the alarm of his wife. He was a mouth breather, and suffered greatly from the engorged turbinates which obstructed his nostrils. This condition was corrected, and indulgence in candy interdicted. He has since had but one or two convulsive seizures a year, where previously they occurred every two weeks. There are still two hyperæsthetic areas which should be cauterized. He had previously worn glasses, and was retested without having his neurotic condition influenced thereby.

While I do not believe that all cases of minor epilepsy can be traced to a nasal or ocular origin, the intelligent physician will undoubtedly consider it his duty to examine both these organs for possible ætiological factors.

Gastric neuroses.—These are concomitant symptoms with many ocular defects. Any ciliary irritation may cause anorexia, nausea, and vomiting. One of the most characteristic symptoms of ciliary inflammation following operation or injury is the severe vomiting which often occurs. A contracting scar in the ciliary region, or the shrinking of an eyeball over a calcareous choroid may produce prolonged gastric disturbance. On the other hand, disturbances of the extraocular muscles, persistent diplopia, or even the usual tests for heterophoria, may excite nausea and vomiting. The wearing of

prisms, muscular gymnastics, and the use of too strong lenses may set up a similar condition. It is easy to demonstrate this to one's own satisfaction by wearing such lenses for a short time. Per contra, when some high refractive error has been properly corrected, the accidental removal of the correcting glasses will often precipitate a recurrence of the gastric disturbance.

CASE XII.-A neurotic female had worn high correcting prisms for a double muscular error (hyperexophoria) for many years. If glasses were broken she had to go to bed, and in a short time suffered from profound sick headache accompanied by nausea and vomiting. Instead of submitting to a proper tenotomy for restoration of the muscle balance, she now carries several pairs of glasses with her as reinforcements in case of accident.

Dizziness, or gastric vertigo, is probably the only symptom that would naturally suggest the necessity for an ocular examination to the ordinary practitioner; and yet, as Musser says, there are many other symptoms, such as bilious attacks, periodical vomiting, anorexia, and indigestion, that may be relieved by a careful test of the eyes. Alger[™] has recently reported a case of severe abdominal pain in which low grade plus cylindrical glasses gave prompt and lasting relief. Two surgeons had made a diagnosis of either gallstones or appendicular inflammation, but fortunately for the patient the condition was correctly diagnosed by Morris as a reflex neurosis due to eyestrain. Refraction under complete cycloplegia and the wearing of the proper glasses quickly relieved the gastric suffering. The number of such cases now being placed on record should make us pause, reflect, and give the oculist the benefit of the doubt, before inflicting lavage or exploratory incision upon suffering humanity.

It goes without saying that there is a close parallelism between these ocular reflexes and those arising from nasal disturbances. In fact, I may truthfully assert that a very large proportion of gastric neuroses are of nasal origin. The hyperæsthetic areas in the upper air chambers, the lowered oxidation through lack of free breathing, and the swallowing of acrid secretions all tend to upset the digestive organs. In addition to this, nocturnal mouth breathing permits chilling of the abdominal viscera, while insidious bedroom drafts often add to the disturbance, and the ultimate matutinal condition of the sufferer is only comparable to the utter wretchedness of the poet Cowper, when he exclaimed: "I awake like a toad out of Acheron, covered with the ooze and slime of mclancholy." The morning head-ache previously referred to, the nausea, vomiting, and intermittent diarrhoea or constipation, show a marked disturbance of metabolism which only the absolute exclusion of ocular errors can differentiate as a gastric neurosis, wholly nasal in origin.

Neurasthenia.—Neurasthenia may likewise be the sequela of uncorrected eyestrain. The ocular error, however, may simply be coexistent and bear no causal relation to the neurotic condition. If this condition persists after the refraction has been properly corrected we should then turn to the nose in our search for the exciting cause. Pressure contact and obstruction to free breathing may cause lowered oxidation and faulty metabolism, and a

There is the first of Laurent, January 2 to 9, 1895, and Exections III to 10, 14 for even 1897.

Laurence to the laurence Wellend Association, July 5, 1902.

Mchicago Medical Recorder, July, 1884.

Mary Large We of Count November, 1902

Acre York Medical Journal, June 8, 1907.

normal systemic balance can only be reestablished by correction of these physical defects.

CASE XIII.—A young lady, a college student, suffered from neurasthenia, intense eyepain, headache, backache, and fainting spells. There was a low grade refractive error. Muscular imbalance varied daily, from one to three degrees of hyperphoria. There was intense pressure of the left middle turbinate against a hyperæsthetic sæptum. Glasses gave no relief and were abandoned. Removal of the middle turbinate relieved all of her neurasthenic symptoms. The hyperphoria completely disappeared, and she now reads and studies with perfect comfort.

The frequency with which muscular errors disappear after the removal of pressure contact in the nose leads me to believe that this lesion may bear a causal relation to heterophoria, a question that I will reserve for future discussion. Muscular imbalance may, nevertheless, exert an irritating influence on neurasthenia.

Case XIV.—A merchant had neurasthenia following business worries. Insomnia was persistent. A long vacation had brought no relief. He came for change of glasses. He was wearing a correction for myopia, astigmatism, and presbyopia. Examination revealed hyperphoria of two degrees. The addition of a vertical prism to his glasses relieved the eye symptoms and caused immediate disappearance of the insomnia. His mental depression also improved.

Neurasthenics, however, are more liable to suffer from insomnia and sudden wakefulness when there is nasal obstruction present. This arises from lowered oxidation in the same way that we are awakened by the sudden closeness of the atmosphere in a bedroom.

Case XV.—A publisher had suffered from neurasthenia, headache, insomnia, reflex cough, indigestion, and attacks of diarrhea. He had just returned from an ocean voyage. There were obstructive lesions of both nostrils. Refraction gave no relief. Cauterization of the inferior turbinates and of the sensitive sæptal puffs brought complete relief from these neurasthenic symptoms. The insomnia and reflex cough disappeared immediately following the first cauterization, but the gastric neuroses were not relieved until after free breathing was reestablished. There has been no recurrence during the past five years.

CONCLUSIONS

The following salient points should always be borne in mind when searching for the exciting cause of reflex neuroses:

1. The eye and the nose are undoubtedly most important factors in the ætiology of reflex neuroses and should, therefore, be carefully examined and positively excluded before beginning a search for other causes.

2. Ocular and nasal reflexes possess many manifestations in common, which should be carefully differentiated at the earliest possible moment.

3. Eyestrain, whether from ametropia, subnormal accommodation, or muscular imbalance, should be carefully corrected in order to eliminate the eye as a causative factor.

4. An atrophied eyeball, with contracting ciliary scar, should be enucleated.

5. Pressure contact in the nose will always excite some reflex disturbance when any hyperæsthetic area is impinged upon, and should, therefore, be eliminated.

6. Every obstruction to free breathing should be

 Recurrence of any reflex neurosis demands reexamination and renewed search for the original exciting cause.

1625 WALNUT STREET.

Original Communications.

THE MECHANICOBIOLOGICAL STANDPOINT IN MEDICAL PROBLEMS.

By Jonathan Wright, M. D., New York.

II .- The Physical Processes in Cell Division.

If it has proved easy to find additional facts brought to light in the domain of physics and general biology, to support an electrodynamic theory of the physical processes of immunity, it will cost but little effort to throw light upon the processes of cell division and cell metabolism from the same source. I have insisted that manifestly any part of the activities going on within the colloid of cells must be of the same order as other parts and they must bear intimate relations to one another. intracellular processes of immunity are so interlaced with the intracellular processes of growth and reproduction that they in reality form one process. The segmentation of cells, resting upon the laws applicable to all spherical bodies, is necessary if they are to secure the requisite amount of surface tension to carry on their activities, by virtue of which they are said to live. Herbert Spencer, unskilled as he was in biological detail, confidently pointed this out forty years ago, and it is applicable not only to the germ cells, but to the somatic cells.1 This energy is at play in the activities of food metabolism and the preparation for future segmentation within, and in the surface activities exerted against danger from without. Therefore the consideration of the one subject is the study of the other also. When we trace the phenomena back to their underlying mechanical laws we find they merge into one another. An ever progressive differentiation of result rests fundamentally on variation due to the impingement of a varying environment, and we thus find the connection which all cell processes have with the mystery of heredity. With this I hope to be able to deal in a future communication. vision of cells has a direct bearing upon the amount of surface energy gained by the comminution of particles. To this I have referred, as demonstrated by Professor Thomson, in the previous paper of this series.2 In referring to it here, again, I but return to that common basis on which rest the differentiations to which I have just drawn attention.

How enormously the area of surface gains proportionately upon the mass of a sphere when continuously subdivided, can only be appreciated by mathematical calculation. The size of the ultramicroscopic particles in a colloid solution having been ascertained, the enormous rate at which they are darting about betrays the presence of a tremendous energy. How this comes about may be appreciated when we consider the electric charge which can be called to the surface of certain substances by attrition or other means of inducing a charge of static electricity. It has been pointed out by Biltz' that "if one divides a dice shaped cubic

[&]quot;A hold gist who has not year My Spence"s values on brobey as a foundation for future studies has been until muste, but it who has read them and has not been able to appreciate their value is describing of much greater commissions.

Now Y r. M. So. at Journal, INNNIN, p. 673.

"Ueber Colloide und ihre Adsorption's Gebilde: Medicinische naturatussens, latticites, from A. J., part 2, p. 25.

2.7.

centimetre of gold into one thousand smaller dice shaped pieces of 0.1 cm. lineal angular measurement the total superficies of these dice cubes will be

 $6.x (0.1) \times 1,000 \text{ cm.} = 60 \text{ cm.}^2$ i. e., sixty times the surface presented by the primary cube, but when it is divided into cubic pieces so that the lineal measurement along the angle of each piece is 10 micra, the size of some of these gold particles, which may be seen in the ultramicroscope, we get the total enormous surface 6,000,000 cm.² = 600 m.²

It is plain that if we are to suppose the surface energy is increased in the same ratio we have an energy, entirely commensurate with the enormous rate at which the particles are seen to move. From this calculation also we may understand that the adsorption, i. e., th esurface attraction of the particles for the solvent in which they lie; on the other hand, in a colloid solution, the attraction and repulsion forces—the surface tension forces—are so great that the power of gravitation is overcome and the particles do not fall to the bottom of the vessel⁵ as soon happens in emulsions, that is divisions, in a fluid, of matter whose particles are not electrically charged with surface energy. Thus we see how the cell gains in energy by division. It is the method of selection from physical phenomena whereby evolution has found a way to preserve the amount of surface energy requisite for the function of each unit of "living matter." The cell, the chromosome, and why not the molecule (?) must be to some extent subjected to this condition of extent of surface, and probably still further governed by the method of their internal structure, for instance, by the amount of chromatin in the nucleus. Doubtless the structure of the chromatin itself, and demonstrably, if we appeal to organic chemistry, the internal stereoscopic arrangement of the molecule governs through the same forces the surface tension of its unit. This is no fancy sketch, but is based on sufficient direct evidence, some of it familiar enough, to make it a working hypothesis whereby to gain an insight into many vital prob-

The chromosome of the germ cell after fertilization possesses another index of surface energy than it did before the entry of the spermatozoon, and the manifestation of its increase is seen in the vigor of the early stages of segmentation.

In this light we are to view the recent observations of Hertwig.6 "In my experiments with protozoa I remarked that those cultivated in the cold were considerably larger than those individuals of the same race which had been kept in room temperature or in thermostats of 25° C. to 30° C., that also the size of the nucleus was increased more than that of the cell body." He points out that these relations are influenced in other ways, by age, for instance, as exhaustively discussed by

Minot, but the effects of temperature are more noticeable and more easily gauged experimentally. Both Hertwig and Calkins have observed that the functional depression of the nucleus, aside from any (noticeable) change in external conditions, coincides with relative increase in size. It would be interesting to know if any difference could be observed in the nuclei of the hibernating animals, but so far as I know there has been no observation made on this point.9 It would seem that a low temperature in slowing down chemical action tends to prevent the segmentation of the nucleus, whereby it may gain in energy. We cannot forbear seeing in the advent of spring time the influence of a higher temperature upon this process, when all things burst into life.

In segmenting cells as the process goes on, Hertwig and his coworkers show that as the relative size of the chromosomes in the nucleus decreases, as compared to the amount of cytoplasm of the cell body, the time of division increases. This decrease in the relative size of the nuclear chromatin is coincident with the stage of development. Hence he supposes that the advent of the nuclear material of the spermatozoon,10 by increasing the size of the nucleus relative to that of the cell body, is directly responsible for cell division. A certain material part of the nucleus, with its attendant energy, is given off into the protoplasm of the cell body, which starts the activity of spindle formation-increases the tension of the colloid, loads its particles with a surface energy they did not before possess. This perhaps is a fair enough generalization, but, in Hertwig's contribution, alone it seems to lack the requisite amount of support in direct observation. If we are to gain this, further correlation must be attempted.

Some of it may be obtained from pathological phenomena. If division of the nucleus in physiological processes seems to be the initial stage in the effort to gain in surface energy for the organ or the individual, the formation of giant cells might seem an abortive attempt in the same direction, but we must rule out teleology. The cells make no effort, in the sense of our use of the term; they respond to a stimulus from without, a spermatozoon, or a foreign body or a bacillus or its toxine, according as the heredity of the cell, its past experience, dictates. A giant cell is not formed in that way, as a rule, if at all, and parthenogenesis would tend to disprove this method of looking at the matter were it not probable that other forces, as yet unknown, intervene to alter and check this general tendency derived from the coalescence of cells. That is not the essence of the matter. As to the giant cell the presence of a number of nuclei in the cell body is due to the confluence of the cells, and never, it is said, to segmentation. The fragmenta-

The property of the rounds that while the mass of the units in division decreases with the cube of the radius the surface decreases only with the square of the radius. Cles attract and repulse one another and never reach a condition of equilibrium, cannot be here developed, but may be found in the condition of the condition of

Popular Science Monthly.

[&]quot;It is a matter of common observation that in the north and south ranges of many species of animals, those in the warmer temperatures, for instance, quail, are considerably smaller than those individuals of the same species whose habitat is in the cooler regions. This has been worked out in a very interesting way by Vernon: Variation in Animals and Plants.

¹⁰Its greater energy is due probably to the relatively large amount of nuclear material and its small size.

tion of nuclei in the leucocytes of the specific granulomata would seem better adapted to furnish support from a pathological standpoint. Yet while giant multinuclear cells are not formed by segmentation of the nuclei they may be looked upon as the result of a sort of copulation of cells. The separate cells which have coalesced have answered perhaps to the same demand for increased energy as does the germ cell which attracts the spermatozoon that happens to swim within its zone of attraction. It is difficult to pursue such a suggestion further, because we are still ignorant of the exact way in which a change in the physical constitution of the egg cell or of the large connective tissue cell brings about the copulation.

We seem to advance a step further when we find Loeb declaring that segmentation of the cell both by parthenogenesis and by sexual division is a process of the synthesis of nuclein.12 By the influence of the spermatozoon or by that of the environment through the instrumentality of some of the monobasic fats a membrane is formed around the cell, and this is a necessary prerequisite for the mitotic process. It seems probable that lecithin is one of the fatty substances saponified or hydrolized in forming this membrane. Heidenhain remarks13 that the inability of nonnucleated pieces of cell protoplasm to form a membrane has doubtless some relation with the phenomena of artificial membrane

formation by the monobasic fats.

We again note the intervention of the lipoid substances, of lecithin especially, in vital processes. Here it may be the determining factor in fecundation and reproduction, and we have seen in my former paper the notation of the lipoids by Albrecht in fixing the basic aniline colors in the lymph spaces, close to the nuclei. I have drawn attention to fat droplets clinging around the nuclei of tonsillar cells after butter had been rubbed into tonsillar surfaces. We have seen it acting as a complement, as a fixative, for the cobra poison in the experiments of Kyes and Sachs. I have shown how quickly the oil globules sink beneath the surface of the tonsils. and recently Loeb again¹⁴ has shown that the sea urchin egg seizes upon the fat ingredient of the serum, squeezed from the bodies of worms in salt water, to start the process of parthenogenesis. There can not be an accidental coincidence in these phenomena. They are evidently all dependent upon the surface tension identical with or comparable to that which exists between globules or bubbles of fatty substances and a watery medium. If the monobasic fats enter into the chemical combinations of protoplasm they probably carry with them this means of exerting an electrodynamic influence upon contiguous matter. Long ago Bütschli and Künstler compared cytoplasm to an emulsion and more recently Dastre's repeats the simile and attempts to give it piquancy by comparing protoplasm to mayonnaise sauce. It is scarcely necessary after what I have said to insist upon the efficient mechanism thus provided for the interplay of electromagnetic forces whether they exhibit the phenomena of cell division or cell growth or cell

Nevertheless, however acceptable this idea of the physical structure of protoplasm may be it must be remembered that it lacks satisfying demonstration by direct observation. We are compelled, owing to the limitations of our power of observing vital processes when they are undisturbed, to draw inferences from the traces these processes have left behind them, these traces themselves being disturbed by our methods of making them visible.

Plainly as are granules to be seen in the resting stage of the cell under the microscope and strikingly regular as are the figures of mitosis, as we know them in the hardened and stained sections, it seems pretty certain that these bodies in life are not solid bodies at all. They are local states of a perfectly fluid medium distinguished one from another by differences in the local dynamic index. Such areas of distinctive potential as exist seem to have a spherical shape (centrosomes) and when the cell is hardened and stained the lines of force between them are revealed by a coagulation of the fluid. This I have stated before, but I find it compactly expressed by a more competent authority. Heidenhain's concludes that "such structures as chromatin granules, centrioles, and chlorophyl kernels have never been demonstrated intra vitam. So far as the genuine protoplasm microsomes are concerned their noncoloring properties depend upon the fact that they are not sharply limited and defined individual bodies, but only thickened places of the living plasma, with which they are in complete somatic continuity." Even by intra vitam staining we throw upon the delicate mechanism of the cell an unaccustomed burden in the adsorption of the color granules which allow us to see something of the internal workings. How much these dead flies in the cobweb, this junk in the cogs of the vital mechanism, how much these foreign bodies each with its own index of surface tension have marred the picture, we do not know.

If we are compelled to admit the probability that the means we adopt to obtain an intra vitam demonstration disarranges the processes, how misleading must be the results of the cataclysm which wrecks the whole labile structure by the coagulation of fixing, hardening and staining. When the action halts. at once there is brought into play the forces of nature which by disintegration prepare the dead matter for removal,-for the sweeping away the dust into which the gossamer machine has been resolved. The action of various enzymes in dissolving proteids has been shown to persist even after the tissue has" been hardened in Zenker fluid and alcohol.

My space being nearly exhausted, I cannot quote. as I should like, from some experiments of Lillie"

[&]quot;Jacques Loch: Science, Ostober 4, 1907.

"It will be interesting to those interested in the chemical side of intracellular changes, inextricably woven as they are with the physical, to refer to an interesting article on biological chemistry by Professor Chittenden: Science, February 14, 1908.

¹³Plasma und Zelle, p. 62.

Marchie für die gesammte Physiologie 1907, reference, Rette scientifique, ix, 3, 1908 ³³La Ute et la mort, 1, 157

¹⁸Loc citet. "
1The Visibility of Proteolytic Enzymes in Tissues, by Channing Frothumbian, Ir., The learned of Medical Research, July, 1988. "
18. R. Lillie: A Contribution toward an Experimental Analysis of the Karyokinetic Figure, Science, June 12, 1908, p. 907.

which go far to demonstrate that the belief that the karyokinetic figure is caused by the radiation of lines of force from the centrosome, chains of force according to Hartog, is the correct view to take of it. The displacement of the centrosome by centrifuging the egg of a certain annelid (Chætopterus), leads to a corresponding deformity of the mitotic figure, the disturbance taking place during the activity of an unfertilized segmentation.

What we see under the microscope, then, we must regard as nothing but the footprints left behind in the march of events, the streaks and grooves left

behind by the electric current of life.

Postulating the fluidity of protoplasm, we are enabled to come within view of an era in which the advancing strides of mathematical progress will enable future workers to apply a precision to the exposition of the workings of vital processes, of which until lately biologists have scarcely dreamed. Lamb10 suggests that the figures of mitosis so strikingly suggestive of electrodynamic action in so many particulars, owe their apparent departure from what we know of the laws of magnetism, to the influence of polar attractions and repulsions, alternately exhibited by polar bodies pulsating in a liquid medium in accordance with the recent work of the V. Bjerknes.20 In their work the mathematical results arrived at in finding an equation for the action of one pulsating or whirling or advancing body in a homogeneous liquid upon another body of the same nature, is of a kind which can be critically examined only by one familiar with the modern state of mathematical science. So far, however, as can be gathered by the aid of a limited familiarity with the field of physics, it appears that the interaction of one body upon another at a distance through the medium of currents in the fluid bears a striking analogy to those interactions of one electrified body upon another at a distance through the medium of electrical currents in the ether. The difference in the terms of the equations and in the results of their functions seem due solely to the difference in the physical properties of water or other real fluids and those of the ether as theoretically formulated by physical science. Thus for instance, when we read "Spherules pulsating alike attract one another (in the fluid): those pulsating nonsynchronously repulse one another" we are reminded at once, it is true, of the principles upon which wireless telegraphy has been founded, but we are still more reminded of our problems in mitosis. The "pulsating molecule of life," a struggle with syntax to subordinate complex phenomena to our finite comprehension, the radiation of lines of force from the centrosome and the phenomena just referred to, by these attempts at correlation, begin to assume a suggestive significance which we cannot ignore. It seems apparent then that to the changes constantly wrought in fluid protoplasm we must apply not only the laws of electrodynamics but the laws of hydrodynamics.

44 WEST FORTY VINTH STREET.

THE PURPOSES AND OBJECTS OF MORBIDITY STATISTICS AND THE METHODS OF COLLECTING THEM.*

BY ASSISTANT SURGEON GENERAL J. M. EAGER, United States Public Health and Marine Hospital Service,

Sickness statistics are, from a sanitary and economic point of view, of greater importance than death statistics. As a gauge to the severity of a disease, as a measure of its damage to society, and as a guide to sanitary action, death statistics are fallacious. They can be considered only as a part of the bookkeeping by which sanitarians determine how well their work pays. Death returns tell nothing of the great mass of common diseases, because many common diseases are not fatal. It has been said that "persons rarely die of the disease from which they suffer." Diseases of the heart and bloodvessels, cirrhosis of the liver, and Bright's disease often terminate in tuberculosis; many diabetic patients die of acute pneumonia. On these subjects the mortality tables are silent.

The prosperity of a community is greatly influenced by the number of persons sick and the character of their illness. These variations of public health are not necessarily indicated in the mortality returns. In an address on sanitary reform delivered many years ago, Lord Lyon Playfair pointed out that the registration of deaths represented the wrecks which strewed the shore, but gave no account of the vessels which were tossed by the billows of sickness. Sickness statistics would, however, tell of coming storms and enable us to trim our vessels to meet the

tempest. Death statistics furnish no information whatever in the case of many diseases which, though fearfully capable of making many lives miserable and greatly diminishing the effectiveness of their victims' work, seldom prove fatal. Trachoma, with its train of ills, is a type of such disease. Sickness may be spread throughout a community, the schools may be closed, business almost suspended, and an exodus of panicstricken persons take place with no appreciable impress on the death returns. In 1873, there was an epidemic of dengue at New Orleans, and it is estimated that 40,000 persons contracted the disease. At Galveston, in 1897, within two months, 20,000 people were attacked by the same disease. Such prevalences would not be indicated by the death returns, because, in dengue, death rarely occurs except in patients already weakened by other disease.

Mortality returns give us the relative death rate for sex, age, color, etc., but are mute as to the relative incidence of disease among the different classes of the population. Scarlet fever, for instance, is much more fatal in cold climates than in subtropical places. Measles may be very prevalent among children in the north with no extraordinary showing on the death records, whereas in armies and in the well known epidemics in the Faroe Islands in 1846 and in the Fiji Islands in 1875, the mortality from measles was appalling.

The fatality of different diseases varies under

[&]quot;A low Far witten of the Laures of Mitosts, by Arthur B. Laush The sured of Experimental Zoolog, vor. November, 1907. P off to a no he Krafte, 2 vols, 1912

^{*}Read before the Section on Vital Statistics at the meeting of the American Public Health Association, Winnipeg, Manitoba, August.

different circumstances. A disease with a low mortality rate at the time of its greatest diffusion may be a peril because of the possibility of its becoming more deadly later in its course. On the other hand, death returns in the case of a highly mortal but slightly diffused disease may give rise to false inferences as to the extent of the prevalence.

"Those who see scarlet fever by the thousand," says a recent writer, "are well aware that any reduction in case mortality that can be hoped for by improved methods of treatment will be too slight to be shown conclusively by working with death rates."

It may be confidently stated that, as long as the amount of sickness remains a matter of guesswork founded on statistics of disease in hospitals, or among special classes of the population, or on such indirect information as death returns, no satisfactory knowledge of the economic relations of disease can be had, and no battle with calculable results can be made against it.

PURPOSES AND OBJECTS OF MORBIDITY STATISTICS.

Aside from the more evident uses of notification so that prompt action may be taken against the spread of communicable disease, a complete system of sickness registration would serve many useful ends. With the aid of such information it would be possible to institute accurate comparison between the health of urban, suburban, and rural districts; the relation of diseases to climate, the seasons, altitude, and latitude; the effect on health of dwelling on soils of different character, and in the vicinity of various natural bodies of land and water. Undoubtedly much light would thus be thrown on many common but not highly fatal diseases such as rheumatic diseases, a class of illness which causes incalculable public loss and private suffering.

Observation on the sensitiveness of public health to weather conditions depends largely on our knowledge of the prevalence of sickness. The same may be said of the disease producing effects of local conditions, such as overcrowding, occupation, proximity to hospitals and unhealthful industrial plants. Some of the remediable drawbacks of farm life would

be brought more prominently to light.

The relation of the predominant diet to disease in given districts is a subject depending on morbidity statistics. For example, statistics are needed in the case of pellagra, a disease of immense economic importance in Italy, which recently has been reported in different localities in the south of the United States.

Information is needed of the relation of trades to lead, phosphorus, arsenic, and other poisoning, as well as to such other diseases as anthrax, glanders,

and actinomycosis.

It is within the scope of such statistics to procure precise knowledge of the fatality, and hence of the prognosis, of different diseases, and to determine what has been called the "expectation of sickness," including the average liability to sickness and the average time lost per annum on that account. This information is of importance in establishing the premium rates of sickness insurance. It would also include an exact knowledge of the duration of attack of different forms of disease. Such statistics, especially as regards injuries, are of great interest in

relation to employers' liability, a subject attracting much public attention at the present time. By registration, our knowledge of the economic aspect of sickness would be improved and the extent determined of the loss of work from different forms of disease—in other words, the public cost of given diseases. A means would be furnished of keeping tally on the efficacy of preventive measures and of reckoning the value of the different classes of therapeutic institutions and of health resorts.

METHODS OF COLLECTING SICKNESS STATISTICS.

Three methods of collecting sickness statistics have been proposed: 1, Enumeration; 2, estimation; and 2 registration.

tion; and, 3, registration. Enumeration .- An attempt was made in the United States Censuses of 1880 and 1890 to learn the number of those who were on a given day so sick or disabled as to be unable to pursue their ordinary occupations. Similar attempts had been previously made in Ireland, Tasmania, and Australia. The result of these experiments was not very productive of valuable statistical information, and the attempt was abandoned in the United States, no such interrogatories being required in the taking of the last census, 1900. It was at least learnedthough the figures were no doubt too small-what a great proportion of the population was constantly disabled from disease from which no satisfactory statistics were available. Thus, in 1890, the figures obtained showed that, in the northeastern States, out of each 100,000 of population on June 1st, 1,684 were affected with sickness or recent accidents, the greatest proportion being found in the State of Vermont (3,292), and the least in Maine (1,291). In the three southern States for which figures were given, the greatest proportion of sickness was found in Virginia (1,991), and the least in Alabama (1,754). The aggregate of nine great cities in the United States gave a ratio of 1,002.

Estimation.—The pioneer in England in the actual practice of obtaining sickness statistics was Dr. B. W. Richardson, who, for several years toward the middle of the last century, maintained without official support a system whereby such information was obtained through the agency of forty-four observers in all parts of Great Britain. The system of collecting sickness statistics by estimation, of which Dr. Richardson's method was an example, depends upon gathering data supposed to be representative and deducing therefrom conclusions as to the prevalence of disease. A similar system, covering a considerable number of diseases, was instituted in Massachusetts in 1875, and has since been tried elsewhere in the United States without statistical results of much importance. In Massachusetts, the State was divided into seven sections having distinctive topographical character, such as the "hill country," the "valley section," the "island section," etc. Physicians were selected in each section to perform the part of observers, and special reports were gathered from medical institutions.

A system of representative averages of the nature of those mentioned has been specifically investigated by a sanitary board of the Public Health and Marine Hospital Service, with the conclusion that the board was unable to recommend the plan, believing that

the element of judgment enters so largely into it as to render the results in too great a degree a matter of conjecture.

Registration.—At the beginning of the eighteenth century, a member of the British Parliament suggested to that body that the registration of certain diseases be required by law, declaring that a great saving of life among rich and poor would result. Registration of disease in Great Britain, though warmly advocated by the British Medical Association and by many prominent medical men and economists, did not become a law anywhere until 1877, when the first local act for enforcing the compulsory notification of the principal contagious diseases went into operation in Bolton, Lancashire. The adoptive enactment of the Notification Act in 1889 was followed by the adoption of notification of the chief infectious diseases throughout England. England was in this respect behind Belgium and many parts of Germany, where the compulsory notification of infectious diseases has been in force for nearly a century. Germany has also, for the last thirty years, maintained a fine system of hospital statistics of general diseases as well as infectious diseases, including alcoholism, rheumatism, injuries, idiocy, lunacy, old age, and diseases of the eye. In the United States, registration of communicable diseases has become compulsory by law in many States and cities, but, while in some places the returns of certain of these diseases are apparently quite complete and have been most useful for directing preventive measures, it cannot be said that the mass of morbidity returns is of great statistical value.

There is no doubt that the only feasible plan for the collection of morbidity statistics is by registra-Their collection in the United States should be undertaken by the different States. The following is an extract from a report made by the writer on the method of collecting morbidity statistics in the State of Pennsylvania, where the plan was adopted after the most careful study of the subject:

"Under the provisions of an act of Assembly, April 27, 1905, regulations have been promulgated requiring all physicians practising within the limits of the State to make immediate report of certain diseases occurring in their practice. In the case of cities and boroughs, the report is made to the secretary of the board of health of such cities and boroughs; when occurring within the limits of a township, the report is made to the county medical inspector, and also to the Department of Health at

"Notification is required in the case of twentynine diseases, namely: Actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis, chicken pox, cholera, diphtheria, epidemic dysentery, erysipelas, German measles, glanders, hydrophobia, leprosy, malarial fever, measles, mumps, pneumonia (true), puerperal fever, relapsing fever, scarlet fever, smallpox, tetanus, trachoma, trichiniasis, tuberculosis (form required to be specified), typhoid fever, typhus fever, whooping cough, and yellow fever.

The reports are made on a standard postal card, giving the date of the report, the full name of the patient, occupation, nativity, age, sex, color, and address of the patient, including, if in a city or borough, the name of the street and the house number, and the name of the city or borough and county; if in a township, the post office address of the patient, the name of the township and county, the name of the disease, the date of the onset of the disease, the name and occupation of the householder in whose family the disease has occurred, the number of children in the household attending school, the name of the school or schools, and the name and address of the physician making the report. In addition to the regular reports, special immediate reports by telephone or telegraph of all cases of smallpox are required. The city and borough boards of health are required to report weekly to the State Department of Health on prescribed forms. A report is also made for any fraction of a week occurring at the end of the month, so that the first weekly report in any month begins with the first day of the month.

"Hospitals and all other institutions for the care of the sick are required to make special monthly reports of the twenty-nine communicable diseases enumerated. These reports of institutions are carefully checked in the State Department of Health to prevent duplicating with local reports.

"There is also a special form for the weekly report of the city of Philadelphia for the reason that in that city the street name and house number as well as the name of the patient are reported.

"Daily reports of communicable diseases in townships are made to the State Department of Health, confirmatory of the reports of cases forwarded directly on postal cards by medical practitioners.

"Weekly summaries of communicable diseases in cities, boroughs, and townships are also forwarded

to Harrisburg.

"The reports of the twenty-nine communicable diseases covered by regulation are recorded in registers at the State Department of Health, and the data are arranged by the aid of punching machines for tabulation in the annual report of the department. Defective cards are returned for completion. In every case of death from any of the twenty-nine diseases in question an inquiry is made to ascertain whether the requirements regarding notification of the disease have been complied with.

Morbidity returns in order to reach the greatest perfection as statistics should be gathered from the largest possible territory. In the United States the data collected in the different States should be brought together, classified, and published at Washington, so that the returns of one State may be conveniently available for the information of other States, and with an ultimate view to a uniform sys-

tem of international morbidity statistics.

At the present time morbidity tables as well as untabulated morbidity reports covering the principal communicable diseases are printed weekly in the Public Health Reports, a publication issued by the Public Health and Marine Hospital Service. The reports of yellow fever and plague, when these diseases occur within the United States, are believed to be as complete as it is possible to make them. The smallpox returns are constantly improving. data used in these morbidity tables are derived from reports of officers of the service, from information received weekly on blanks sent to all cities of over 10,000 population in the United States, and from official reports of diseases recorded in towns and States where registration of certain diseases is required by local or State statutes.

The movement for the systematic collection of morbidity statistics, having for its ultimate object the registration of every disease of importance from a sanitary or economic point of view, should be begun by effective laws in every State for the prompt reporting of all virulently epidemic and actively communicable diseases. To these should be added from time to time, as the public becomes educated to the importance of their registration, the more remotely communicable diseases and diseases depending on remediable local conditions. So it might be hoped that finally the advisability would become evident of adding to the list all diseases and injuries of economic interest. The prompt and uniform reporting of sickness depends much for its success on the enlightened public spirit of medical practitioners. Even more than in the case of death statistics, the element of accuracy in diagnosis becomes a factor that cannot be disregarded in drawing conclusions from the returns. The most important element in bringing about such a desirable result as a universal system of sickness statistics is an active educational campaign carried on not only by the public authorities, but by every person interested in the public welfare.

THE SCHOOL CHILD. By J. W. Van Derslice, M. D., Oak Park, Ill.,

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At a meeting of the American Medical Association, held at Atlantic City in 1907, there was appointed a committee to investigate the "present status of the school child," upon which committee the author was appointed for the Middle West. The work of this committee entailed an enormous amount of correspondence with the teachers, principals, and superintendents of this territory, the results of which are the basis of this paper.

The subject of stress and strain in the school child embraces a wide variation in the viewpoints of those interested in the product of our public schools. As the State has taken upon itself the education of all children between the ages of six and fourteen years, society has an interest in seeing that the child is educated along lines which be of economic value to the State in the development of a citizenship of a worthy type.

The attention of the State and educators is concentrated upon the small part of child education, the development of the intellectual capacity. viewpoint of the parent is as diversified in almost as many channels as there are parents. The custom of judging the school by comparing the work of the pupils by the alleged work of the parent at a corresponding age is as unfair to the child as it is to the school. The attitude of the physician should be that of adviser rather than critic; to try to amalgamate the cross purposes of the interested parties to the better development of the child. If there is forgetfulness of character formation, or an absence of interest in the physical welfare of the child, then the medical profession should demand that proper safeguards of these qualifications be thrown about the child, as education is the equipment of the individual for service, and if the mere possession of

useful facts is gained at the expense of illhealth, mental inervation, or moral blight, the price is too

great to pay.

Some of the contributing factors of stress and strain of the school child lie in the child, as, hereditary dyscrasia, physical, mental, and moral condition of the child, the home environment, the condition of the child as a result of the artificial life in large cities, the many chronic disorders of nutrition and digestion, the quantity and quality of food ingested, the frequent lack of intelligent parental oversight, the want of sympathy between parent and teacher, the need of sufficient sleep, employment for economic purposes or for the care of younger children outside of school hours, absences from trivial causes, social distractions, these all combine as factors in the burdens of the school child.

In the school are found the conditions of the school building and the school room, the sanitation of the school, improper desks and seats, lighting facilities, the ventilation, the character of type in textbooks, and the glazed paper of the school books, the use of free textbooks, the number and frequency of infectious diseases, hours of confinement within the school room, lack of proper recreation periods, the school curriculum and the lesson schedule; these with many others have a place in the causes of stress and strain on the school child.

The constantly recurring cases of physical and mental lassitude occurring in the school child should not be dogmatically set down as caused by the amount of work required by the school, but rather a careful investigation of the foregoing causes should be made and the recommendations for correction along the lines affecting the individual.

The hygiene of the home is largely beyond the influence of the physician except in individual cases. but by education of the masses to a proper appreciation of the benefits of the simpler rules of hygiene much good may be accomplished. In the homes where better things may be expected there is great need of education along lines of sufficient sleep for the child, a regulation of the duties and hours that there be no need for the hasty breakfast of a cup of coffe and a piece of bread gulped down with one eye on the clock in fear of being tardy. For the amount of sleep required during the developing period the following should be considered the minimum: Five years, thirteen and one half hours; six years, thirteen hours; seven years, twelve and one half hours; eight years, twelve hours; nine years, eleven and one half hours; ten and eleven years, eleven hours; twelve and thirteen years, ten and one half hours; fourteen and fifteen years, ten hours; sixteen and seventeen years, nine and one half hours; eighteen and nineteen years, nine hours. The importance of easily digestible food, with an interval of rest to follow each meal, are points needing special emphasis. The greatest abomination of the school system is the school store with its cheap candies and sweetmeats.

The life of the city child, with its freedom from the chores of the country bred child, is a factor in development that must be taken cognizance of. This lack of regular duties and responsibilities has much to do with the lessened self reliance, self determination, self control, and self direction of the present day child. The necessity for employment for economic purposes outside of school hours affects a large number of pupils in the higher grades; it was found that in the rooms above the sixth grade there was usually from ten to fifteen per cent. of the pupils who were thus regularly employed; and the kind of employment was such that would be likely to throw him into contact with vicious associates.

The lack of harmony that exists between many parents and the public school, which is fostered by much undue criticism that is now in vogue by the lay press, and the careless assigning of all cases of stress occurring in the school child to the shortcomings of the public school system, react upon the child both in regard to the school discipline and the character of work performed. This want of a proper regard for the school and what it stands for is oftentimes the cause of the many absences for trivial causes.

The social distractions during the school life have a greater demoralizing influence than is realized; this is especially true at certain seasons, as Christmas, Easter, Children's Day, etc. * The testimony of many teachers is that "the attendant excitement affects the quality of the pupil's work for weeks," both previous and subsequent to the event.

The sanitary conditions in many of the schools is "impossible." In but few of the schools is there any adequate apparatus for the proper ventilation of the school room, and in many of the rooms the only means of ventilation is to open the door or windows. The appearance of the school room is bleak and uninviting. The desks and seats are not suited to the size of the child. There are now usually supplied two sizes of seats and desks in each room. There should be supplied, in addition to this, a number of adjustable seats and desks which should be adjusted to the pupil by a competent supervisor.

The effect of poor light, with the poor print and glazed paper combined with the eyestrain of blackboard work, is but too familiar, and the constantly increasing proportion of children with refractive errors as the higher grades are reached gives evidence which is unquestionable.

The enormous number of children who suffer from one or more of the infectious diseases is so great that it is now taken as a matter of course that the school child should be thus attacked. The fact that these diseases are preventable apparently is of little moment, judged by the demeanor of the various school boards. The walls of the school are uncleaned from year to year, and the memory of man goeth not back to the time when some of them were kalsomined. The floors are not scrubbed, and the desks and seats are not washed for months. Fumigation is only done after the most flagrant infections of scarlet fever and diphtheria. The common drinking cup is furnished in place of a hygienic fountain or individual cups. In the use of free textbooks is found another of the commoner modes of infection. The average life of a book is four to live years, and each book is used by several pupils; these are neither fumigated nor destroyed unless at the home of a pupil where there is either a care of diphtheria or scarlet fever.

The schedules of the various grades call for a

recess during the morning and afternoon sessions, but as it is found that there is no provision made for the protection of the pupils during stormy or inclement weather the recess at such times is omitted and the child is confined during the entire session. It is a necessity for good health that these children have the benefit of fresh air and freedom from restraint for a short interval, and there should be provided a covered area for such times as it is needed. It is found that in many of the schools there is no other playground than the street, and, strange to say, the more congested the district, the less the playground furnished. It should be an essential of every school to have a playground of sufficient size to accommodate the entire school. The judicious use of the playground is of great value in the building of character.

The number of pupils in a room is far too great. It is not uncommon to find upward of seventy pupils in a room under one teacher. This is a crime against both the teacher and pupil, as it is a manifest impossibility for a teacher to do justice to such

The burden of the criticism of the public school is the overcrowding of the curriculum. This criticism of too many studies and too much demanded is met with, both from within and without the school system. Many educators quite severely criticise the present curriculum. The State insists upon the attendance of every child, for five or six hours a day, five days a week, in the public school. the outcome of this compulsory education the school is gathered from all races, all strata of society, all conditions and customs of living, representing all sorts and varieties of tastes, talents, and capacities; and for this heterogeneous mass the educator must formulate a system of education that is suited to the individual. That the system developed under such unfavorable conditions is measurably successful is evidenced by its product; as samples, take the American medical and scientific men of to-day who were its graduates of a few years ago.

There is now in the curricula of the various schools evidence of transition. In periods of transition there is not stability. The element of stability has not been present since the days of the three "Rs". The practical ideal of education, that the school must fit the child for something, is the main cause of the changes in the curricula. In the rapid evolution of commercial and social life there arose a demand for more than was compassed by the rudimentary branches, and the spreading out of the curriculum was a necessity. With the centering of large masses of population in the cities there arose a need of a cultural as well as an intellectual side of education, with the result that the school child of to-day is better informed upon many subjects, but has not the mastery and thoroughness of a given subject that developed the initiative, self reliance, and the ability for individual work so common under the old method. In the multiplicity of subjects there is of necessity a tendency toward superfluity. The requirements of the curriculum are such that the teacher does not have the time to teach as she should, but she must try to instill into the child a certain definite number of facts rather than take her place as a real teacher to bring out of the child the best that he has.

The overcrowding of the curriculum is due to three causes: I, Every child must take all of the work, regardless of personal or individual need; 2, whatever the last generation had must go into the curriculum of the present one; 3, domination by

the colleges.

The curriculum is fitted to the average child in regard to his ability to average work. That the child must take all the work as laid down, regardless of his condition, adaptability, or environment, is an error. It would seem advisable that the curriculum for each school should be made by the teachers, principal, and superintendent, as they should be in a position to best judge the needs of that particular school. That it is compulsory for the pupil taking private instruction in one or more of the school studies to take the same courses in the school seems a waste of effort.

The domination of the curricula of the public schools by the schools of higher learning is of questionable advantage when it is considered the very small percentage of the pupils that enter the colleges. It is obvious that to build a curriculum to meet the demands of the colleges rather than to fit the child for his life's work is not carrying out the needs of the average child, and in this lies one of the prominent reasons for the large number of pupils who drop out of school so soon as the law allows, because of this seeming impracticability of the courses. It is beyond all question that the grammar school does not give the appetite for learning that could be developed were the curricula so arranged as to equip the child for the technical work in which it was probable he would engage.

The most frequent criticism is of the special studies and the special supervisor. The question of the value of the culture studies is not properly understood. In the public schools of the large cities there are from seventy to eighty per cent. of the pupils that are foreign born or the children of foreign born parents. In quite a considerable proportion of these pupils the only real culture that they are apt to receive will be from the public schools, and as it is the psychological period, that period in the development when there is an unfolding, that these studies are given, it is the physiological period for the imbedding of real culture. Take the domestic science course, the immediate benefits of such a course in the poorer districts will be that there will be a demand for the better foodstuffs in the families coming under such influence. There can be no greater benefit accrue to the congested districts of the large cities than that the girls shall have a knowledge of foods, their values, modes of preparation, and the art of making tasty the commoner foods. The crying need of these districts is for better cooks, and if these girls of necessity must go from the school to the factory, to wifehood, where can they get a working knowledge of the duties of the housewife? So with the other culture studies as music, drawing, and literature, it would be a step backward to take away the taste of literature that these children receive. There should be a decided effort to inculcate in these children a taste for good literature; it is not that they do not read, but that their reading is ill advised, and a little painstaking effort might lead them along the better way. The criticism of the drawing and writing lessons should lie in the manner of teaching. It is self evident that it is impossible to have a certain set of lessons fitted to the sixty or seventy pupils in a room, and great harm arises from the apparent aim of the teachers in the excellence of production that these products may be exhibited for the benefit of fond parents, regardless of overstrain in the child, rather than the developing of the child. The development of the child in the lower grades is such that the movements should be confined to the coarser free hand type. The finer coordinations necessary for the detail of either drawing or writing must result in harm to the child if carried to the point of fatigue.

Manual training is of value in developing self reliance and self determination. The carrying out of a task to completeness must result in great moral benefit. To interpret this course to mean a trade school is an error; it should be used as a method for development, as during these years there is an innate desire to create, and in such a course there is the desired element of creating the finished product.

In the arrangement of the lesson schedule there is a total disregard to the attention period. length of time that a child can profitably apply himself at the various ages to a given subject has been 'amply demonstrated by Gilbert, Chadwick, and oth-The public schools have generally the same lesson periods for all the grades. The schedule of lessons is made up with only two points in view: To fit in with recesses and to have the harder studies early in the sessions. A rather constant factor which aggravates this prolonged attention period is to have the study hour for the course immediately precede or follow the recitation, thus incurring a doubling of the period of attention to a given subject. While teachers as a rule recognize the difficulty of holding the attention for a full lesson hour, the cause as a physiological factor being the deterrent is not taken cognizance of.

The schedule should be so arranged that no period shall be longer than fifteen minutes for children under nine years of age, twenty minutes for children nine and ten years of age, and twenty-five minutes for children eleven to fourteen years of age.

155 NORTH SIXTY-FOURTH AVENUE.

ANCIENT GREEK MEDICINE.*

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It is well known that science had its beginnings among the ancient Greeks, which does not necessarily mean the inhabitants of Greece proper. It was they who first displayed what we may call scientific curiosity. They traveled into other countries in quest of information. They observed and recorded phenomena and tried to explain them. Their essays were often childishly crude, but they were in the line of progress. We are frequently surprised at their shrewd inferences and at the close proximity to important discoveries which their guesses indicate. A boy may not know one tenth as much as his father, but if he has the habit of observing and reflecting and drawing conclusions

^{*}The reader is also referred to two articles in the P-pular Serence Monthly for September, 1005, and May, 1007, entitled Physicians and Philosophers, and Sight and Seeing in Ancient Times.

he will eventually surpass his parent, if the latter is content to follow tradition unquestioningly. Stephenson's Rocket and Fulton's Clermont bore little resemblance to their successors of a hundred years later, yet they embodied the essential principles on which all subsequent steam engines were constructed. Hence, although the Egyptians and the dwellers in Mesopotamia, had accumulated a large stock of practical experience, it was only in a small measure fruitful. That the Greeks derived little from them is indirectly shown by the fact that those who lived in Italy were as far advanced, in some respects farther, than those who dwelt around the shores of the Ægean Sea. The ancient historians tell us that in Egypt physicians were paid by the state and were required to give their services gratis. In their practice they were bound to follow a collection of rules formulated by a distinguished body of physicians in early times; otherwise they rendered themselves liable to the death penalty. Later, however, they were permitted to vary their treatment on the third day, but at their own risk. Herodotus reports that in Egypt each physician treats a single disease only, and that the country swarms with medical practitioners. Egyptian medicine is referred to by Jeremiah in the words: "O virgin daughter of Egypt, in vain shalt thou use many medicines."

The story of Democedes as told by Herodotus,

even though it may be somewhat colored by national prepossession, throws an interesting light upon the esteem in which Greek physicians were held in the time of the great Darius as contrasted with the Egyptian. The king, when leaping from his horse, sprained his foot so severely that the ankle bone was forced quite out of the socket. As the Egyptians were reputed to be the best skilled physicians in the world he always kept several about the court. To these he had recourse; but they twisted his foot in such a violent manner that they only made the matter worse. For seven days and seven nights the king was unable to sleep owing to the severity of the pain. He then happened to hear of one Democedes, of Crotona, who was the slave of Orœtes; this man he accordingly ordered to be brought into his presence. When he made his appearance he was still loaded with fetters and clad in rags. Upon the king's asking him whether he understood medicine he answered in the negative, fearing that if he made himself known he would never see his native land again. Darius, who had evidently heard of him before, suspecting that he was not acting in good faith, threatened to put him to the torture. Whereupon Democedes replied that he had no thorough knowledge of the art, but owing to his having lived some time with a physician he had acquired a slight smattering of it. The king, nevertheless, put himself under his care, and "by using the remedies customary among the Greeks, and exchanging the violent treatment of the Egyptians for milder means, first enabled the king to get some sleep, and then in a very little time restored him altogether." Democedes showed his hu-manity by interceding with Darius for the lives of

the Egyptians who had formerly had the care of the king, but whom he was about to impale because

they had been surpassed by a Greek.

A short time after, Atqssa, the wife of Darius, had a boil on her breast. This broke first, then began to spread and increase. As long as it was of no great size she concealed it for shame; but when it became worse she sent for Democedes. He at once promised to cure her upon condition that she would grant him one request, which he assured her would be nothing she would blush to hear.

Preceding the account of these adventures Herodotus relates that Democedes left his home in Crotona and sailed to Ægina because he could no longer endure the ill usage of his father. "There he set up in business, and succeeded the first year in surpassing all the best skilled physicians of the place, notwithstanding that he was without instruments and had with him none of the appliances needful for the practice of his art. In the second year the state of Ægina hired his services at the price of a talent; in the third the Athenians engaged him at a hundred minæ; and in the fourth Polycrates at two talents. It was in no small measure from his success that the Crotoniats came to be reckoned such good physisians; for about this period the physisians of Crotona had the name of being the best, and those of Cyrene the second best in all Greece.' It should be remembered, however, that only two of the above named cities were in Greece proper, although both were Greek cities, the one being in Italy, the other in Africa.

Egyptian medicine, like Egyptian civilization, as a whole, had very early reached the stage of stagnation. To us it is a completed product to which nothing was added in later times. In the history of the past we frequently meet this pathological condition of the human psyche. There is no ex-

planation of this curious phenomenon.

The astonishingly accurate knowledge of anatomy shown in the Homeric writings, especially in the Iliad, a "poem of glorified slaughter," has often been remarked. Here we find all sorts of wounds inflicted on almost every part of the body by many different kinds of weapons, but of this number only seven are so vaguely given that a skilled anatomist would be unable to determine their character. As this poem, in part at least, goes back more than ten centuries beyond the Christian era we are constrained to wonder how the authors obtained the information. Perhaps the wonder is not so much that the knowledge should have been obtained as that it should become a matter of record. Two surgeons, Machaon and Podaleirios, are mentioned with honor in the Iliad, the former about a dozen times, the latter twice, but only in connection with the former. Both are sons of Æsculapius; both are not only skilled in the medical art, but are also valliant spearmen. Both are princes and consequently men of mark among their fellows. There is only a single mention of the veins in Homer. Attention has more than once been called to the fact that the description given here corresponds exactly with that given by Hippocrates. "And Antilochus watched Thoon as he turned the other way, and leaped upon him, and wounded him, severing all the vein that runs up the back till it reaches the neck, this he severed clean, and Thoon fell on his back in the dust." The drastic surgery of the Homeric age is strikingly exemplified in the following passage: "Then he stretched him at length, and cut with a knife the sharp arrow from his thigh and washed from it the black blood with water. And thereon he cast a bitter root, rubbing it between his hands, a root that took away pain, and ended all his anguish, and the wound began to dry, and the blood ceased." Persons who have read accounts of the surgery of the primitive races will not be surprised at the statements found in Homer. I recall an account of the Cæsarean section witnessed in Uganda by Dr. Felkin, of Edinburgh, and published by him in a pamphlet. The patient was first partially stupefied with banana wine. During the operation the flow of blood was stopped with a red hot iron, which was, however, applied very cau-During the entire operation she uttered tiously. no cry, and an hour after its conclusion she had entirely recovered from the shock and was on the way to complete restoration. While engaged on the case the chief surgeon made free use of incanta-To a highly intellectual person chanted words are meaningless, but to people whose entire life is governed by their emotions the case is widely different. We need only to reflect how the writer of Genesis conceived the creation of light. "And God said, Let there be light, and there was light."

In those early days the pharmacopœia was largely made up of vegetable productions of various kinds. Oil, wine, and vinegar were medicaments frequently employed. The case can hardly have been otherwise at a time when chemistry was virtually unknown. It would seem from the passage quoted that plants having certain well established medical properties were kept near at hand in a dried state, as otherwise the language of the poet is hardly intelligible. Women are credited with especial cunning in this branch of medical lore. We read elsewhere that "fair haired Agamede knew all the drugs that the wide earth nourisheth." sorceress Circe is likewise reputed to have been an adept in the use of plants possessing unusual medicinal virtues. The reader need hardly be reminded that a similar belief exists in many parts of the world, including the United States. Strictly speaking, Homer makes no mention of internal disorders. The Iliad opens with a brief reference to the pestilence sent by Apollo into the Greek camp. It first attacked the dogs and the mules, but later the men

Circe turned the bodies of Ulysses's companions into swine, but she could not change their minds nor prevent them from realizing their degradation. The transformation was accomplished by means of a magic potion and the stroke of a wand. After Bellerophon had incurred the enmity of the gods he wandered alone, devouring his own soul and avoiding the paths of men.

That the influence of the mind upon the body was early recognized by the Greeks is evident from the directions given by the priests of Æsculapius to the patients who resorted to his temples for the cure of the maladies with which they were afflicted. But as they were not conversant with psychology, as it is now understood, the numerous cures reported are attributed to external agencies, not to autosuggestion and subjective mental states. In

the earliest times as described by Homer all psychic agencies are external. The Homeric heroes are impelled to action or to refrain from action by the direct interposition of the gods. In the second book of the *Iliad Zeus* sends a baleful dream to Agamemnon, inciting him to undertake an enterprise that was doomed to failure. In the first book Athene seizes Achilles by his golden hair and prevents him from drawing his sword to smite Agamemnon. On the other hand, the dreams which were sent by Apollo to Æsculapius came to enlighten, not to deceive. There is, furthermore, little doubt that the voice of the Lord so often spoken of in the *Old Testament* is to be explained in the

For the Greeks Socrates stands on the dividing line which separates ancient and modern modes of thought. To him the actual state of the case was not fully clear. He recognized an inner prompting, or, rather, an inner restraint; but he still regarded it as a divine voice. He felt strongly that there were certain things he ought not to do; he did not realize that it was a part of himself that was acting upon another part. In the Iliad, Cheiron, half man and half horse, who is designated as the teacher of many of the Homeric heroes, is mentioned as the discoverer of the medicinal virtues of plants, just as Palamedes is called the inventor of letters and Orpheus the inventor of instrumental music. Similarly Genesis makes Jubal the father of such as handle the harp and the organ, and Tubalcain an instructor of those who forge cutting instruments of brass and iron. As every art must have had a beginning, it is in accordance with the naïve manner of thought to attribute it to some person. Men had not yet learned that the handicrafts are the result of an evolutionary process, and that they reached the highest perfection by the contributions of many. As long as the specific influence of natural causes and unnatural conditions in the genesis of disease was little known or even suspected, it is no wonder that men usually attributed both personal and endemic diseases to the special visitation of the gods. The same god might be a healer at one time and the bringer of disease and calamity at another. Under the strict monotheism of the Jews Job in-quires whether we shall not receive evil at the hands of God as well as good. David likewise declares that the arrows of the Lord stick fast in him and His hand hath pressed him sore. With all our superior knowledge it is not uncommon for people to speak of a dispensation of Providence when a little reflection would convince them that the supposed dispensation is due to ignorance, to unsanitary conditions, or to unhygienic practices. Everybody who reflects knows that fully four fifths of the diseases and misfortunes that come upon men are owing to preventible causes. Although misfortunes and accidents are frequently the result of conditions over which the unfortunate inrividuals have no control owing to the exigencies of our civilization, the responsibility is human and not providential. Some person or persons could have prevented them. The other fifth is brought about by those mysterious forces which, while in a measure understood, can neither be foreseen nor controlled.

Although Hippocrates shows in numerous pas-

sages that he is very much of a rationalist he often realizes that the skill of the best physician is baffled. In one of the passages of his works that has cogent evidence for its genuineness he says: "Medicine inclines to do honor to the gods as concerning symptoms of sickness, and doctors give way before them, since medical lore has no superabundance of power." We find a similar reliance upon the gods expressed by Socrates when he advises his friends to depend upon the human intellect for everything that lies within its scope, but to call upon the gods when they have to deal with matters that lie beyond this

We have no evidence that the Greeks anterior to the time of Aristotle dissected cadavers. However, their well known aversion to the mutilation of the human body even after death would render it advisable for those who had performed dissections to say little about it. Most people still share this aversion. After the doctrine of bodily resurrection had become an article of the popular creed, dissection was absolutely forbidden. The fate of Vesalius is well known. On the other hand, we have reason to believe that not only human corpses were dissected in Alexandria under the first Ptolemies, but that malefactors were sometimes subjected to treatment that differed little from vivisection. There was, however, no lack of opportunities for the study of the human skeleton on the numerous battle fields. When Greeks fought against Greeks the dead of the defeated army were usually given up under a truce. With the barbarians such generally was not the case. There is no room for doubt that on many a battle ground skeletons might be seen long after the combat had occurred. The phrase "gave their bodies to the dogs and birds of prey" that occurs in the first lines of the Iliad and oftener can hardly have been a mere figure of speech. Herodotus reports that after one of the engagements in northern Greece between his countrymen and the Persians "on the one side, a thousand men were seen lying about the field, on the other four thousand crowded together in one spot. He also relates that at the battle of the Thermopylæ "a still greater number were trampled to death by their own soldiers; no one heeded the dying.

There is one phase of ancient surgery that strikes tts as remarkable by its omission. Not only is there virtually nothing said about the sanitary affairs of armies; the care of the wounded is perfunctorily referred to. Although the ancient states were almost constantly at war they appear to have taken no systematic care of their soldiers when in the field. While Thucydides devoted an entire volume to a war between Greek states that occupied their entire energies on land and sea for a number of years toward the close of the fifth century B. C., he ignores this matter entirely. Neither does any writer on the history of early Rome make mention of surgeons with the army. In the time of Xenophon the noncombatants among the Spartan troops, but with equal rank with the regular soldiers, are soothsayers, physicians, and flutists. The same writer, in his account of the retreat of the ten thousand, tells us that at one time "they came into villages and appointed eight physicians; for there were many wounded." It is plain from this passage that these unfortunates had no regular care when on the march, but that the "physicians" were merely a sort of caretakers selected a good deal at random. That the nobility, especially the king of Persia, had their private physicians with them when in the field, is evident not only from the story of Democedes, but also from the statement of Xenophon that after Artaxerxes had been wounded in the head at the battle of Cunaxa, his Greek physician, Ktesias, healed him. In another work the same writer informs us that after a battle Cyrus sent the wounded into the city of Gadata "in order that they might be healed." That this was a regular custom is made probable by the passage in Herodotus describing the retreat of Xerxes from Greece.

To what extent Alexandria was provided with hospitals and opportunities for clinical practice we have no means of knowing. Our ignorance is due to the destruction of its libraries. It is, however, a safe inference from the silence of ancient records that hospitals were rare. We know from the testimony of the Bible that begging was very common, and that many insane and crippled were at large. The fact that certain temples were under the special patronage of the gods of healing and that they were much patronized by the sick renders it probable that special buildings for invalids were rare all over the ancient world. The diseased and impotent repaired to the temples to be healed. On the sites of these many votive offerings have been brought to light by the pick and spade of the excavator. Usually some local conditions, most frequently a medicinal spring, gave celebrity to a shrine. We have a typical instance recorded in the fifth chapter of St. John's Gospel. "There is at Jerusalem, near the sheepgate, a bath with five colonnades round it. . . . In these colonnades numbers of invalids were lying-some blind, some lame, and others crippled. One man was there who had been an invalid for thirty-eight years." That he had been placed in that spot by his relatives, who had then gone away and left him to his fate, is evident from the man's words: "I have no one to put me into the bath, when there is a movement of the water, and while I am getting to it, some one else steps down before me.

Owing to this lack of hospitals, except so far as a temple here and there provided a partial substitute, ancient medicine was largely personal. When a man had acquired a reputation by that peculiar insight, that power of mental divination which still distinguishes one physician from another of equal intellectual attainments, he began to attract pupils. He was attended by them to the bedside of his patients, where a diagnosis was made. The historians of the Alexandrian period, especially Susemill, who is chiefly indebted to Celsus and Galen for his information, have collected a large number of names of ancient physicians who are reputed to have made important discoveries and to have been the founders of schools; but when we sum up the errors and false views to which they gave currency we become painfully aware of their shortcomings.

While the study of ancient Greek medicine is both interesting and instructive, it cannot be said to be profitable. Furthermore, although there is no

doubt that its superiority is due to the fact that most practitioners were, in a sense, philosophers, there is just as little doubt that the penchant for system eventually prevented its further advance. Too much stress was laid on preconceived theories and not enough on careful observation. On the other hand, we need to be reminded occasionally that incredulity is not necessarily wisdom. That it is sometimes the very opposite is proved by the disdain with which Harvey's theory of the circulation of the blood was first received by nearly all contemporary physicians. When the bacterial origin of disease was first broached, as also when mosquitoes were first designated as the cause of yellow fever, both suggestions were for a number of years ignored. Outside of medicine similar cases are almost numberless. Again, when we remember how much the healing art is dependent upon instruments of precision, especially the microscope, we need not wonder that the ancients without these got no further than they did. For more than a millennium and a half it did not advance beyond the stage to which they had brought it. Indeed, our astonishment at the insight and the skill, no less than our admiration for the kindliness and humaneness of Greek physicians, grows in proportion as our knowledge of the entire subject increases. When considering the problems presented by the study of ancient medicine, especially after we have learned how inferior it was in many respects to the most advanced science of the present day, we are prompted to ask, what was the condition of public health? Apparently very little was done in the way of municipal sanitation, except that some cities were well supplied with water. Soap was unknown to the classical age both in Greece and Rome. Pliny mentions a compound which he calls sapo made by the Gauls and Germans, and the ingredients that entered into it. He also informs us that it was more used by the men among the latter than by the wo-It appears, however, to have been a pomade for the hair rather than a soap. Whether the term is Celtic or Teutonic we do not positively know; probably the latter. That the word was later borrowed by the Greeks from the Romans appears certain from the name sapon still in common use among them. The name eventually was adopted by most of the people of Europe, the Turks calling this article so much in demand in our day sabun and the Finns saippio. In its stead the ancient Greeks used flesh scrapers. These were so highly esteemed that they were sometimes made of gold and given as prizes in athletic contests. Herein we see how men's ideas of the fitness of things change with the people and the age. Nowadays one would hardly commend himself to a friend or an acquaintance by the gift of a cake of soap or a comb.

This can, however, not be said of Athens. The mortality does not seem to have been much greater than it is in our own day. Five hundred years B. C. the average of human life was reckoned at about thirty-three years. We are often astonished at the enormous population assigned to some countries. There were few large cities in the modern sense of the term; as the houses were seldom more than two stories in height the population cannot have been very dense. In Athens the reputable women sel-

dom went out of doors; the men spent most of their time in the open air. What effect occasional overcrowding produced may be seen from the description of the terrible plague in Athens near the end of the fifth century B. C., as given by Thucydides, when the surrounding population was driven into the capital by the exigencies of war. As the countries of which we know most were grouped around the Mediterranean Sea, where the climate is mild, outdoor life occasioned no discomfort, to say nothing of habit. In some parts of Italy whole families still live in caves. In Spanish cities the tourist who is out late at nights is surprised to find the streets littered with persons lying asleep; to the natives it is the most natural thing in the world. The population of China is evidence that filth is not incompatible with an exceptionally large number of in-habitants to the square mile, notwithstanding the prevalence of infanticide. The writers who have made the most careful study of the economic condition of France have reached the conclusion that the population of the country at the close of the middle ages was as great as it is now. It was, however, fearfully cut down by the Hundred Years' war and the plague. Yet during all this period there was no rational practice of medicine. Until quite recently most of the villages of continental Europe were without a resident physician. Such is still the case in many parts of the world that are reckoned civil-

While nobody doubts that medical practice fills an important want in modern civilization, there is no question that it is largely due to civilization that the want exists.

OBSTETRICAL PARALYSIS.

A Preliminary Report of Two Cases Treated by Nerve Dissociation.*

By Karl Osterhaus, M. D., Norfolk, Va.

Obstetrical paralysis, brachial birth palsy, is a condition affecting the upper extremity, caused by

some injury at birth.

Although this affection has been occasionally referred to in literature under various names (usually "compression paralysis") since 1768, it was not until 1872 that it was first recognized and described by Duchenne as a true laceration paralysis due to forcible delivery, though the actual nerve lesion was not understood by him. Until the last eight years very few cases of this disease have been reported. and even at the present time the literature on the subject is very limited. A few articles have appeared on the ætiology and pathology of the lesion but the most exhaustive and interesting of any which have come under the writer's notice, and the only ones in his opinion which cover the entire field, are the papers of Clark, Taylor, and Prout in 1905, and Bullard in 1907. It is not the inteniton of the writer to try to add anything to what has already been so ably discussed in these articles concerning the ætiology, etc., of brachial birth palsy, but rather to make a preliminary report of two cases in which

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he operated by a somewhat different method from that usually employed, a method which, so far as he knows, was first advocated by Babcock, of Philadelphia.

While brachial birth palsy has been variously attributed by the earlier writers to direct compression of the cords of the brachial plexus by forceps, axillary hooks, by backward displacement of the clavicle, and to a form of anterior poliomyelitis, later experiments go to prove conclusively that it is caused by excessive traction or tension on the nerve roots of the plexus. Anything tending to force the head and shoulders away from each other puts the nerves on the stretch, though how this force is produced is not always clear, the disability in rare instances following apparently normal labor. Usually, however, there is a history of prolonged or difficult labor in which forceps or some other form of traction has been used. A. S. Taylor has very plainly demonstrated by his experiments on the cadavers of young infants that it is almost impossible to compress the cords of the plexus between the clavicle and first rib, or the transverse processes of the first cervical vertebræ, unless, perhaps, there has been a fracture of the clavicle, and in this event the paralysis would be confined to the lower nerve roots. According to Stimson, however, the cases of fracture of the clavicle in adults in which symptoms of paralysis appeared at the time of the fracture were very few, and in most of these there was paralysis of the suprascapular nerve which leaves the upper part of the junction of the fifth and sixth cervical nerves well above the clavicle, and this is certainly suggestive of laceration due to stretching. The production of obstetrical paralysis is favored by anything which tends to increase the resistance to the descent of the shoulders in vertex presentations, or of the after coming head in breech presentations, such as a small pelvis, inelasticity of the maternal soft parts, dry labor, or maternal exhaustion. Forced lowering of the shoulder girdle, which occurs when the tip of the shoulder catches at the brim of the pelvis or under the symphysis pubis, predisposes strongly to injury to the nerve roots, especially the upper ones. In the same way delivery of the resistant after coming head by making traction with the fingers hooked over the shoulders puts the cervical nerves on the stretch, and in such cases the danger of laceration is increased by direct pressure of the fingers on the already overstretched cords (A. S. Taylor). Incomplete rotation of the head, or rotation to the opposite side, together with inclination of the head away from the stretched nerves adds greatly to the strain, and traction made in this position is much more apt to cause laceration than when in line of the body. Asphyxia, by causing relaxation of the muscles protecting the plexus, may also be a predisposing factor in causing overstretching of the nerves.

The pathology of the lesion, as revealed post mortem or by operation, is the same as that of similar injuries to nerves elsewhere. The injury varies from a simple stretching of the nerve fibres to complete laceration of the plexus. As usually seen, however, it consists of a stretching of some of the fibres and a tearing or unravelling of others at different levels, the fifth and sixth cervical nerves be-

ing most often affected. The supporting connective tissue perineural sheath with its contained blocdvessels is the first to give way under excessive strain, causing hæmorrhage which infiltrates the nerve substance. Organization of the resulting blood clots, which occurs before regeneration of the nerve fibres begins, forms scattered bands of connective tissue around the nerve bundles, constricting them, and thus effectually preventing their regeneration. Naturally the greater the hæmorrhage the greater is the resulting cicatrix, and the more far reaching the extent of the paralysis. The injury to the nerves is still further complicated in many cases by laceration of the deep cervical fascia covering the plexus, and this may be found adherent to the cords of the plexus. In nerve lesions due to overstretching the peripheral fibres are always more injured than the central ones.

The three varieties of obstetrical paralysis, depending on the site and extent of the lesion, are upper arm paralysis, lower arm paralysis, and total arm paralysis. The first named is the type usually met with, though paralysis of the whole extremity is not uncommon. In upper arm paralysis, of which both the writer's cases are typical, the muscles always involved are the deltoid, biceps, brachialis anticus, and supinator longus, and usually associated with these the supraspinatus and infraspinatus, serratus magnus, supinator brevis, and teres minor. The clinical picture presented in a case of upper arm birth palsy shows the arm hanging loosely from the shoulder, the whole extremity being rotated inward. There is marked pronation of the hand, and the elbow is usually slightly flexed and cannot be fully extended on account of contractures at the joint. In more severe cases of long standing the pectoralis major is strongly contracted, and there may be flexion deformity at the wrist. Backward dislocation of the humerus sometimes occurs owing to relaxation of the muscles around the shoulder joint and to the contraction of the pectoralis major. In one of the writer's cases this subluxation takes place every night during sleep, and is reduced by the patient every morning as a preliminary step to making her toilet. The voluntary movements of the arm are very much restricted, abduction, supination, and outward rotation being practically impossible. In recent cases a severe neuritis is sometimes present, and movement or handling of the extremity causes much pain and discomfort. In cases of long standing there is marked atrophy and lack of development of the limb, the normal bulge of the shoulder is flattened, and the acromion may be prominently seen. The handgrip in the true upper arm type is usually very slightly affected, and the hand may be used in a nearly normal manner. Sensation seems to be unaffected.

A diagnosis may be made without difficulty from the characteristic position of the extremity, together with a history of a difficult or prolonged labor in which traction in some form has been used, and which is closely followed by paralytic symptoms. Electrical tests of the muscles and the atrophy and dwarfing of the extremity will confirm the diagnosis, if any doubt exists. At times, however, it is almost impossible to determine all of the nerves involved or the extent of the lesion, though electri-

cal stimulation at Erb's point (two centimetres from the outer border of the sternocleidomastoid and the same distance above the clavicle) will cause contractions of all the paralyzed muscles supplied through the fifth and sixth cervical nerves. Sometimes deep palpation over Erb's point will reveal the thickened areas in the injured nerves, and may be of service in determining approximately the extent of involvement of the nerve trunks, but this is only possible in thin patients and cases of long standing.

The prognosis in brachial birth palsy may be said to be good in the upper arm cases in which operative measures are employed. Nerve surgery at the present time holds out a promise of at least partial return of function even when the paralysis is very extensive, and in many cases complete restoration of function may be hoped for, though only after a considerable lapse of time. It is certain that the nutrition and development of the arm will be materially improved by any operation on the nerves that will relieve the constriction or pressure of the fibres. Even in cases in which the whole extremity is involved much may be accomplished, though any great amount of usefulness of the limb is not to be expected. The prognosis is also affected to a great degree by the length of time which has elapsed since the onset of the paralysis, the younger the patient the better being the chances for recovery,

In the treatment of recent cases of obstetrical paralysis, as in infantile paralysis, it should be the aim of the surgeon to assist in restoring as far as possible the functions of the muscles only temporarily affected, and to prevent contractures of the sound muscles. To this end electricity, massage, baking, passive motions, and hot and cold douches should be systematically employed. It is hardly necessary to state that these therapeutic measures are not to be attempted in cases presenting an "active" neuritis, as they would only cause unnecessary suffering and tend to aggravate the disease. In the latter cases the extremity should be immobilized in a splint or plaster of Paris cast in such a position as to prevent contractures, and this splint should not be removed until all acute symptoms have subsided.

The length of time which should elapse before an operation is attempted is a question that admits of much discussion, Kennedy and others believing that three months is sufficiently long to wait after paralysis has been established. On the other hand, Clark and Taylor think that at least eight months should be given the temporarily affected muscles to regain their power, and that even a year is not too long. In the opinion of the writer to wait at least a year or two years after the onset of the paralysis would be entirely proper, as not only would the operative field be enlarged but the danger of shock to the child would be greatly lessened.

The technique of the operation commonly employed for the relief of this condition has been fully described by Taylor in his excellent article, and the writer will only repeat his description here. An incision is made along the posterior border of the sternocleidomastoid muscle extending obliquely downward and outward from the junction of its lower and middle thirds to the clavicle at the junction of its outer and middle thirds. The platysma

and deep fascia are divided, exposing the omohyoid muscle and suprascapular vessels. These are retracted downward or divided between double ligatures, as are also the transversus colli vessels, which are found just below the middle of the wound. The incision is carried through the layer of fat covering the deep cervical fascia, under which lies the brachial plexus. This fascia which is usually thickened and sometimes adherent to the plexus, is divided and cleared away from the nerve roots exposing them freely. The injured nerves are usually more thickened than the healthy nerves, and palpation will reveal indurated areas in the substance of the nerve, in most cases at the junction of the fifth and sixth cervicals. These masses of scar tissue should then be excised with a sharp scalpel or tenotome. The use of scissors in cutting the nerve and handling it with forceps are to be condemned, as in this way the nerve fibres are bruised too extensively and their regeneration is interfered with. After excision of the cicatricial tissue the nerve ends are brought together by lateral sutures of fine silk, the sutures being passed through the nerve sheaths only, to avoid injury to the healthy fibres. The writer prefers for this work fine carbolized catgut or some other form of absorbable animal suture. While the sutures are being tied the neck and shoulder are approximated as much as possible to prevent any tension on the nerve union. Cargile membrane is then wrapped about the anastomosis to prevent ingrowth of connective tissue. The omohyoid is sutured with catgut, and the platysma and skin with silk or a subcuticular silver wire stitch. A light sterile dressing is applied, then a plaster splint to keep the head and shoulder appromixated. This splint must be continued for three weeks or a month to avoid any strain on the anastomosis until firm union has taken place.

If necessary in the more extensive lesions the skin incision may be carried down between the pectoralic major and the deltoid, which are then separated. The clavicle is divided with a Gigli saw, and the subclavius muscle also. These structures are then retracted exposing the entire brachial plexus. After the anastomosis has been completed the clavicle and muscles are reunited with chromic gut.

The method adopted by the writer in his cases was first suggested to him by the results following its application to a case of infantile paralysis, in which he had previously made an anastomosis between the internal and external popliteal nerves. The improvement in this case, while marked, was rather slower than in other cases in which the same operation had been performed, and led him to suspect an overgrowth of connective tissue at the site of the wound, which on investigation proved to be the case. Not wishing to run any further risks of cutting off the nerve supply by dissecting out the scar tissue, which evidently involved only part of the diameter of the nerve trunks, it occurred to the writer that possibly an application of the principle of bridging nerve gaps with a foreign material might be of service in this case, by allowing the scar tissue to take the place of the catgut strands commonly employed. To this end the nerve junction was carefully lifted on two fingers, the nerve sheaths having been previously split up for a considerable distance above and below, and with a fine sharp tenotome the nerve fibres constricted by the cicatricial bands were thoroughly dissociated. Cargile membrane was then applied loosely and the wound closed. The return of function which followed was almost startling in its rapidity, and the question was raised in the mind of the writer whether such a procedure would not be good routine practice after all nerve anastomoses, in which restoration of function is much delayed by connective tissue formation.

The report of a series of cases by W. Wayne Babcock, of Philadelphia, in which nerve dissociation had been performed, and in which he advocated the latter procedure in the treatment of brachial birth palsy led the writer in November, 1907, to attempt it in two cases of upper arm paralysis which he had under observation at that time, the preliminary reports of which are given herewith. As only a little over eight months have passed since these operations were performed the final results are still in doubt, but so far the improvement has been most encouraging.

CASE I.—S. H., aged sixteen years; female; white; strong, healthy girl, with typical left upper arm paralysis of moderate degree. History of vertex presentation, eighteen hours' labor, forceps used. Disability not noticed un, ill nearly two months after birth. No history of a neuritis. Function seemed to improve for about a year, but since then there had been no improvement. There were contractures at the elbow joint, resulting in a mild degree of flexion, and the pectoralis major was markedly contracted. The arm could not be voluntarily abducted except to a very slight extent, and outward rotation and supination were almost entirely absent. Examination showed involvement of the firth and sixth cervicals, but no induration or thickening could be made out on palpation, owing to fat. Marked atrophy of arm and shoulder, left arm being two inches shorter than right.

Operation on November 8, 1907. Under ether anæsthesia the plexus was exposed by the usual incision above the clavicle. The deep cervical fascia was found to be thickened and somewhat adherent to the plexus. Palpation showed several small indurated masses at the junction of the fifth and sixth cervical nerves, one mass extending a little distance into the fitth nerve above the junction. The deep cervical fascia was cleared away freely so as to expose the nerves, and the nerve sheaths were incised longitudinally from well above the junction to below it. The nerve junction and roots were then lifted clear of the sheaths on small padded grooved directors, and the fibres were freely dissociated, the dissociation being carried into the nerves well above and below. The suprascapular nerve was treated in the same manner. The nerves were then loosely wrapped in Cargile membrane, the wound closed in layers, and a plaster cast applied to approximate the head and shoulder. There was very little loss of blood, and the patient reacted well. Time of operation, one and a quarter hours.

The skin wound healed by first intention, and one month after operation the cast was removed and a strict course of electricity, massage, baking, and passive movements was instituted. The patient was instructed to use her arm as much as possible and attempt to exercise the paralyzed museles. Some slight improvement in function was noted about four months after operation and this steadily progressed. At the present time the patient can abduct the arm nearly to a right angle to the body, and flexion, outward rotation, and supination are markedly better.

The atrophy and dwarfing of the extremity, which were considerable, appear about the same. It is worthy of note that the patient can now feed herself with her left hand, which before was impossible.

that the patient can now feed nerself with her left hand, which before was impossible.

CASE II.—C. D., female, white; aged four years; large, well developed child, in perfect physical condition, except for mild degree of obstetrical paralysis of left upper arm. History of dry, difficult labor of about ten hours' duration, in which forceps was used. Vertex presentation. Paralysis

age palliative treatment was begun and persisted in for about six months, during which time there was some improvement. The child presented a typical clinical picture of the upper arm type of brachial birth palsy, the arm hanging close to the body with the elbow slightly flexed, the hand pronated, and the entire extremity rotated inward. Voluntary movements were much restricted. On account of fat, palpation over Erb's point failed to disclose any thickening or induration. Atrophy of the arm and shoulder was noticeable, and the left arm was somewhat shorter than the right. The hand could be raised a little above the waist line with an effort, but could not be supinated. No outward rotation.

Operation on November 14, 1907. Under ether anæsthesia the usual incision was made above the clavicle and the plexus exposed. Deep cervical fascia was not markedly thickened. A small indurated area could be palpated at the upper outer part of the junction of the fifth and sixth cervical nerves, extending into the fifth nerve. The nerve sheaths were incised and the nerves raised on grooved directors, as in Case I, and freely dissociated, the process being carried up into the fifth and suprascapular nerves. Cargile membrane was applied, and the wound closed in layers, silver wire being used for the skin. A sterile dressing and plaster cast were then applied. Reaction was rapid and loss of blood slight. Time of operation, one hour.

ing and plaster cast were then applied. Reaction was rapid and loss of blood slight. Time of operation, one hour. The skin wound healed uneventfully, and the cast was removed at the end of a month. Six weeks after the operation the child had a severe attack of scarlet fever, from which convalescence was rather slow and tedious. Electricity and the other therapeutic measures had to be omitted for nearly three months following operation, except for perhaps ten days. In spite of this handicap some return of power was noted during convalescence, and this steadily improved. The electrical reactions of the paralyzed muscles were marked, and the child can now raise the hand to her mouth, and the arm to a level with her shoulder. The hand can be turned nearly half way over, and there is some power of outward rotation. All the movements, however, are weak and accompanied by decided effort, but this is to be expected.

In conclusion the writer wishes to express his conviction that this method will be found of distinct advantage in many cases of brachial birth palsy in which extensive resection of the nerves would be of doubtful benefit. In both of his cases the benefit derived has been decided and rapid, in spite of the fact that one case was of sixteen years standing, and the chances of their ultimate recovery seem good. Undoubtedly much less harm is apt to be done by separating the fibres than by excision of the cicatricial masses. Dissociation by relieving the pressure and constriction of the nerve fibres open up new pathways for their regeneration, and as far as may be judged from the two cases cited here the restoration of function seems to be brought about much more rapidly than in cases in which resection has been performed. The theory that the regenerating axis cylinders will use the strands of degenerated nerve fibres and scar tissue as bridges on which to extend themselves, similarly to vines on wire, certainly seems sound, and it only remains to prove or disprove this theory in actual practice. The writer would heartily urge a thorough trial of this method in all cases of nerve injury, but particularly in the distressing condition which is the subject of this paper, as being a procedure in which the chances of doing much good are so great, and of doing harm so small. It is a source of much regret to the writer that he is unable to accompany this article with photographs of his cases, but owing to the modesty of the older girl, and his inability to reach the younger child, he was forced to do without, though recognizing that the value of this report is greatly lessened without them

The later status of these two cases will form the basis of a subsequent report.

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CAUSE OF PREMATURE SEPARATION OF THE PLACENTA.

BY SAMUEL ROBBINOVITZ, M. D., Brooklyn, N. Y.

Owing to the failure of Dr. Lionel Rosenberg, of Brooklyn, to clearly understand my article contributed to the New York Medical Journal on the subject of Cause of Premature Separation of the Placenta, I find it essential for the purpose of defending myself against an unjust and false accusation by him to make the following statements and

recapitulation respecting this subject: The doctor entered a very bold statement in the columns of the New York Medical Journal, June 20, 1908, whereby he endeavors to imply that premature separation of the placenta cannot take place unless there is some predisposing cause, and that gonorrhaal metritis is, in his estimation and experience, usually the predisposing cause, and, hence, he does not agree with my idea as put forth in my contribution to the New York Medical Journal of March 14, 1908, where I asserted that the most frequent cause out of all causes enumerated in the standard works on obstetrics, in my opinion, is traumatism, in the form of either direct or indirect violence, as I found by my own personal experience and careful investigation. Dr. Rosenberg, furthermore, accuses me of publishing Professor Jewett's ideas and alleging that the same were my

In my opinion, it is only after a close study and thorough comprehension of any article on any subject that one could venture upon criticism, and, inasmuch as Dr. Rosenberg's view upon the same offered neither forethought nor even slight consideration of the subject in question, I have no hesitation in saying that he ought rather to hesitate to contradict anything which may not have been obvious to him.

If the medical readers of the New York Medical Journal will be kind enough to turn to page 501 of the Journal, March 14, 1908, issue, they will readily see that by discussing there the subject as I did I usurp no originality about the cause of premature separation of the placenta, but what really is my original idea is the fact that the most frequent of all causes mentioned in textbooks is traumatism. I assert that the latter idea is my original one, for the reason that I never heard of this idea being mentioned nor have I seen it published anywhere, but it simply is based upon personal examination and practice in these matters. I wish to defend myself thoroughly against this unjust accusation and at the same time also express my contradictions to the ideas of Dr. Rosenberg, represented in the article he recently contributed: I, I have in my possession Professor Jewett's second edition, Essentials of Obstetrics, on page 300, of which he enumerates a certain number of causes, and among them he mentions "external violence, as blows or falls," but he never states definitely that any particular one of them is the most frequent of all he mentions. 2, Wherefrom and by what authority did the doctor determine that no separation of the placenta could take place prematurely unless there was some predisposing caurse? I never saw, on referring to standard works on obstetrics, it mentioned by any author, including Dr. Jewett, that it is absolutely necessary that a predisposing cause be at the bottom of such an accident. Then, again, on the other hand, if there is any author that maintains such an idea, it is, after all, not the doctor's original view. To support my contradiction I may state that the majority of my patients who had accidental hæmorrhage, i. e. premature placental separation, were perfectly well women, having had no leucorrhoeal discharge or any other cardinal symptoms of metritis, had no physical defects of any kind, neither anæmia nor ill health, and certainly no gonorrhæal metritis, which the doctor stated they must have in order that such a condition might occur. In the majority of such cases I found that the untimely separation of the afterbirth was purely due to the act of traumatism, either by direct or indirect violence, as I illustrated in my article. 3, According to the doctor's arguments, which I beg to quote: "Upon repeated examination of Mrs. M. M. I found that she had gonorrhœal inflammation in its severest form, and so I came to the conclusion that premature separation of the placenta was due to metritis set up by the gonorrheal infection, which acted as a predisposing cause, and the manipulation of the midwife acted as an exciting cause." Consequently every woman having premature placental separation must necessarily have had a gonorrheal infection, as will be shown by and as can be elicited from his statement I quoted. He certainly takes great liberty when he makes such a bold statement, and if this article should ever be destined to be read among the average lay people, I think the doctor would have a hard task in defending himself. It can readily be observed how absurd and ridiculous such an argument on his part is, especially when (as can be learned from his quotation) he bases his conclusion on one single case of the kind which he had where premature separation took place on account of the infection with the gonococcus. It would be an extremely unfortunate state of affairs if all authorities on obstetrics were to give such an idea as their conclusion, since, no matter how decent or virtuous a woman might be, she would be considered the opposite if her placenta were to separate itself too early, and we should be constantly suspicious and troubled even about our own mothers, sisters, and wives as to their morality if they should happen to meet with any accident of traumatism during the last month or two of pregnancy and this accident happen to occur to them.

71A SUMNER AVENUE.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows. LXXIX.-How do you treat sick headache? (Closed

October 15, 1908.) LXXX.—How do you treat asphyxia neonatorum? (Answers due not later than November 16, 1908.)

LXXXI.—How do you treat chronic eczema? (Answers

due not later than December 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXVIII has been awarded to Dr. Charles
Floyd Burrows, of Syracuse, N. Y., whose article appeared

on page 842.

PRIZE QUESTION LXXVIII.

THE TREATMENT OF ACUTE CORYZA.

(Continued from page 844.)

Dr. Arthur H. Paine, of Geneva, N. Y., remarks:

The treatment of acute coryza should aim to assist the natural forces of the human economy in combatting an acute general infection with localized symptoms. The important points to be considered are: I, Rest; 2, (a) opening of all channels of elimination and (b) equalizing circulation; and 3, fortifying the system to form antitoxine and overcome in-

I. Rest is secured by absolute quiet in bed and the administration of a suitable dose of Dover's powder at bedtime.

2. (a) Channels of elimination are opened and stimulated by the administration of castor oil, which will clean out the alimentary canal; Dover's powder and warm covering will produce diaphoresis, and sweet spirit of nitre, together with plenty of water ingested, will increase renal activity.

(b) Relief of the congestion of nasal mucosa can be afforded by a hot mustard footbath and maintained by administration of a mixture of aconite, belladonna, and sweet spirit of nitre, which will inci-

dentally reduce fever.

3. The fortification of the system if accomplished by the enforced rest and judicious feeding with highly nutritious but readily assimilable food, at fre-

Therefore, the treatment of an attack of acute corvza seen at or near the onset would resolve itself

into the following:

One half ounce of castor oil as first measure, followed by a hot mustard footbath and immediate retirement to bed with warm covering. Give a mix-

ture of aconite, belladonna, and sweet spirit of nitre, grading the dosage to fit the individual every hour or two while awake. At bedtime, give Dover's powder, 5 to 10 grains. Encourage cold water to be taken freely, but withhold food until the laxative has operated and the bowels are quiet, then give raw eggs and milk every two hours.

If these measures are carried out faithfully, the attack will terminate in a very short time and the stage of purulent nasal discharge will be aborted. Local treatment will avail no permanent good nor tend to cure condition, though sometimes it seems advisable to use some alkaline spray, as Dobell's solution, followed by a spray of

B Camphor,gr. v; Menthol,gr. viii;

When a case is encountered comparatively late in its course and the nasal mucosa is boggy and secretion well established, this local treatment will be most useful. The general treatment will then consist in forced feeding and tonics, such as quinine, gr. i to ij three times daily.

Dr. Meyer A. Rabinowitz, of Brooklyn, N. Y., observes:

The successful treatment of acute corvza must be based on the ætiological, pathological, and clinical indications present. The predisposing cause in almost all cases is a condition of the system below par; the exciting causes are numerous and vary with each individual case, as undue exposure to damp weather, sudden chill, irritating vapor, or overheated and overcrowded atmosphere. The onset is marked with congestion, dryness, and swelling of the Schneiderian membrane, interfering with proper drainage of the nasal sinuses, and producing headache and feeling of nasal stuffiness. This later gives place to vascular relaxation attended with nasal discharge-first mucus, then mucopus. Once the disease is well established it pursues a subacute course tending to recovery, but very liable to recurrences unless the ætiological factors be removed. It therefore follows: During the attack, limit the disease at onset, and failing in this, relieve distressing symptoms; after the attack, remove local and general predisposing causes, and warn against exciting

Treatment at onset, i. e., in first twenty-four hours, should be abortive. Nasal congestion must be overcome by cutaneous dilatation, catharsis, and rest. A hot mustard foot or sitzbath taken at home, followed by a hot drink of lemonade in bed, with plenty of blankets about to keep up perspiration, is of unquestionable value, assisted by one powder containing 10 to 15 grains of Dover's powder and 5 grains of quinine sulphate. A serial dose of calomel, 1/10 grain every 10 minutes for ten doses, should be given before bedtime, and a brisk saline ordered the next morning. Locally, a four per cent. aqueous solution of cocaine applied by the physician only, where there is danger of habit; or applications of a I in 10,000 adrenalin chloride solution in normal saline every four hours by means of swab or nasal dropper will constrict the arterioles, shrink up the mucous membrane, and assist drainage. Should

headache and discomfort still be severe after following out the above, 5 grains of acetphenetidin repeated once or twice, as needed, will be sufficient in most cases.

When the disease is well established and there is profuse nasal discharge, abortive treatment will be useless. Local cleansing and soothing applications, nutritious full diet, moderate catharsis, and internal tonics are now indicated. Avoid too vigorous spraying for fear of carrying infection up the Eustachian tube or nasal sinuses. Gentle douching every three hours with tepid Dobell's solution or normal saline, followed by spraying with following solution:

Menthol,

This will prove efficacious. The patient should not go out into the open air for at least one half hour after, to avoid aggravating the local conditions.

Watch for and treat complicating otitis media or sinusitis. Avoid recurrences by raising economy above par and by removing all local predisposing causes in nose and pharynx—as hypertrophied turbinates, polyps, spurs, and adenoids.

Dr. W. Warner Watkins, of Phanix, Arizona, states:

The treatment of an acute coryza, or a "head cold," is a refinement of therapeutics which it behooves the physician to keep uppermost in his mind. First, from the standpoint of the physician himself, because it can be and should be aborted in order to prevent a catarrhal rhinitis, rhinopharyngitis, or graver sequelæ in the deeper respiratory tract resulting; and, second, because appearing to the patient, as it does, to be an affair of small consequence aside from the discomfort and inconvenience it causes, he wishes and expects to have the coryza promptly relieved. So the treatment of this ubiquitous ailment which is viewed with too little apprehension by the majority of our patients is very important, not so much on account of the rhinitis per se, but because of the segulæ which may result from a neglected inflammation of the nasal mucous membrane. And here, as with the treatment of any pathological condition, we must understand the structure of the tissues involved and the changes which occur in an infection of them in order to apply intelligently our curative agencies.

The nidus of infection in an acute coryza is the mucous membrane of the respiratory portion of the nasal fossa which includes all of the cavity except the upper and central portion of the sæptum and the superior turbinate, over which areas the olfactory nerve is distributed. The membrane is adherent to the perichondrium and is continuous with the conjunctiva through the nasal duct, with the tympanum through the Eustachian tube, and with all the sinuses communicating with the nasal fossa; over the turbinates and sæptum the membrane is very thick and vascular, but elsewhere it is pale and thin; the epithelium is of the columnar ciliated variety interspersed with mucin cells; in the basement membrane there are both serous and mucous glands opening by their ducts on the surface. The vascular supply is exceedingly rich, the veins forming cavernous tissue beneath the membrane over the

turbinates.

The essential pathology of an acute coryza is an intense congestion and turgescence of the mucous membrane of the respiratory portion of the nasal fossa, to which change its structure makes it easily susceptible.

The symptoms of occlusion are quickly produced by swelling within so small a space, and anosmia, conjunctival congestion, headache, impaired respiration, are the first symptoms; these are soon followed by a profuse secretion which is first serous and later mucus. The constitutional symptoms of any infection are present to a more or less degree—fever, loss of appetite, malaise, etc.

Treatment.—With these conditions to combat the indications for treatment are:

First-To relieve the congestion and to prevent or abort the stage of profuse secretion. This is done by a free catharsis, by counterirritation to the feet and legs, and by dilatation of the cutaneous capillaries, and the induction of a free diaphoresis. The patient should be confined to the house for two. three, or more days, if possible. If this is not feasible-and in many cases it is not-then let the patient take during the day atropine, 1/300 gr., every half hour until the throat and nose are dry. This will usually effectively check the nasal secretions. At night for catharsis. give calomel, gr. iii, with a brisk saline the following morning. For counterirritation and hyperæmia of the feet and legs and consequent vascular depletion of the head, have the patient take a hot mustard foot bath at bedtime, and at the same time take a full dose of spirit of nitre in a glass of hot water, sleeping under sufficient cover during the night to induce a free perspiration; the nitre is not only indicated for itself but is needed to offset the effect of the atropine on diaphoresis.

Second—To reduce the temperature, cleanse the affected area and restore the tone of the tissues and bloodvessels. Give aconite for its physiological effect on the bloodvessels; this reduces the temperature, dilates the cutaneous vessels, and relieves the local congestion in the nose. It may be given during the day with the atropine, but preferably in the evening.

Keep the affected area clean by a spray of warm normal saline solution or a weak alkaline wash applied two or three times daily. If the tissues do not return promptly to their normal tone and condition, aid the removal of the inflammatory products by some tissue alterative, such as arsenic and iodides.

Prophylaxis.—This is placed in the conclusion because it is where it naturally falls in our treatment, inasmuch as it covers the instructions to the patient as to how he may avoid contracting further colds—a matter about which many of them anxiously inquire. The writer was once given three rules for avoiding "catching cold," as follows:

- (1) Bathe the neck and the upper portion of the breast with cold water the first thing on arising in the morning.
- (2) Keep the upper part of the chest and the "shins" protected from chilling, as the chilling of these two particular regions of the body seems to induce a stagnation of blood in other tissues and organs, the nasal mucous membrane among them.

(3) Sleep always with a free circulation of air through the room, using sufficient cover for warmth. "Observe these rules and you will not contract colds," you may tell your patient.

Dr. William F. Barclay, of Pittsburgh, says:

For more than twenty years I have treated the disease in practically a routine method and it has been successful; I have no good reason to change the treatment. I direct fifteen drops of tincture of nux vomica every three hours in water. I order the tincture to be taken in one half a glassful of cold water, as it is more efficacious when well diluted. The dose recommended seems quite large, but experience has convinced me that the larger the quantity of the medicine taken the better the result from its use. The dose for children should be according to the age of the child. I have not observed any unpleasant effects from the use of nux vomica. In addition a small dose of calomel compounded with milk sugar, two to ten in proportion of the compound, acts well and never fails to benefit the patient. The cathartic should be taken before retiring to bed. This treatment is safe and satisfactory during the time of the acute attack and acts as a tonic during convalescence. When the acute stage is past the medicine should be taken three times daily. nostrils should be sprayed with a solution of adrenalin chloride in a saturated solution of boracic acid. with great advantage and with much comfort to the patient. Patients that I care for and treat when they are ill with acute coryza do not consult me, but resort to the treatment of their own accord. I would remark that the tincture of nux vomica should be prepared fresh from a reliable solid extract, as that made from the fluid extract is practically inert.

Dr. William Lynn Wilson, of St. Joseph, Michigan, writes:

Acute coryza is an inflammation of the nasal mucous membrane, and may be caused by I, exposure to cold or draughts, especially when overheated; 2, inhalation of mechanical or chemical irritants; 3, the toxic products of certain infectious diseases, as measles, scarlet fever, and influenza; 4, nervous conditions, as vasomotor coryza. A predisposition to this affection is also furnished by a number of local conditions, as the presence of adenoids, polypi, and deviated septum; and a certain number of people who possess an unstable vasomotor nervous system are especially prone to take cold on the slightest exposure.

The symptoms are both general and local, the general symptoms being lassitude, chilliness, aching of the muscles, and feverishness. Locally, there is at first a feeling of stuffiness and irritation, accompanied by snezing, and more or less occlusion of one or both nostrils, and followed by a profuse secretion, at first serous, afterwards mucous or muco-

purulent.

The treatment may be divided into prophylactic, abortice, and symptomatic. The prophylactic measures are avoidance of colds or draughts when heated or per paring, keeping out of the presence of dust and unitating gases or vapors, and the wearing of clothing suited to the atmospheric conditions. As a general rule, light wool, or silk and wool under-

clothing is to be preferred. The feet especially should be kept dry and warm. The house should be well ventilated and aired, and the temperature kept as nearly even as possible, and moderate in degree, as overheated, badly ventilated houses are responsible for a large number of cases of coryza. Sæptal deformities should be corrected, spurs, adenoids, and polypi removed, enlarged turbinates cauterized or removed; and the patient's vasomotor reaction should be educated by cold baths, exercise, and massage. Deep breathing exercises, followed by a cold plunge, or sponge bath, are excellent measures if carried out every morning.

Abortive treatment, to be effective, should be begun early, that is, within a few hours from the onset of the disease. A hot mustard foot bath, a prompt acting cathartic, as the effervescent solution of magnesium citrate, followed by a hot drink, to which may be added a half to one teaspoonful of sweet spirit of nitre, will in a certain number of cases be effective in breaking up an attack of coryza. In a larger number of cases, while it does not actually abort, it relieves the severity of the symptoms and shortens the course of the malady. In some cases the time honored Dover's powder may be given at the same time as the hot drink. In rheumatic subjects a dose of sodium salicylate, 15 grains, or aspirin, 15 grains, is effective. Occasionally a full dose of quinine, 10 to 15 grains, will prove abortive, and is always worthy of a trial.

After the first day these measures are of little or no avail, and the treatment must be mainly symptomatic. The general symptoms are best relieved by salol and acetpheneticlin, each 2½ grains, in a capsule, every two hours; or by the following:

 Fig. Tincture of aconite,
 .5ss;

 Potassium nitratte,
 .5ii;

 Sweet spirit of nitre,
 .5iii;

 Water,
 .9 s. ad. 5ii.

 M. S. A teaspoonful in water every 2 hours.

After the feverishness and aching have subsided a capsule of quinine gr. i, extract of belladonna gr. 1/12, and monobromated camphor 4 grains, given every two hours, will serve to further relieve the symptoms.

Locally a mild alkaline spray, containing sodium biborate and sodium bicarbonate, as Dobell's or Sciler's solution, should be used as a cleansing procedure. These solutions should be warmed to the body temperature before being used. Afterwards, a spray of a three per cent. solution of camphor menthol in liquid petrolatum should be employed; and in the milder cases nothing more is required. In cases where the tunnefaction is great and the nose almost completely occluded, a solution of cocaine, four per cent., and adrenalin chloride, 1 to 5,000, should be dropped into each nostril, or applied on absorbent cotton, and allowed to remain until the swelling is reduced, after which the three per cent. camphor menthol solution may be used.

This treatment can be used twice a day in the office, but I seldom give patients preparations containing cocaine to be used at home. For home use the warm alkaline spray, followed by an oily solution of adrenalin, or adrenalin ointment, is the most appropriate procedure. The menthol pocket inhalers that are on the market are also helpful. When the

swelling is not so great but there is a very profuse serous secretion, a powder composed of stearate of zinc and boric acid, equal parts, to which in some cases may be added a one half per cent. solution of cocaine, should be insufflated every three hours. usually dispense this powder myself, so that the patient need not know if it contains cocaine.

A powder composed of equal parts of pulverized acacia, bismuth subnitrate, and sodium bicarbonate, may also be used with advantage; and in some cases I use one made up of bismuth subnitrate, alum powder, and talc. Glycerin applied freely to the nose externally helps to relieve the stuffy feeling, and in children especially gives great relief. The ointment of rose water or the benzoinated oxide of zinc ointment should be applied to the nostrils externally to prevent irritation and excoriation of the skin. The patient should be told to resist as much as possible the desire to blow the nose, as frequent unproductive attempts increase the irritation and swelling.

The use of alcohol and tobacco should be pro-

hibited during an attack. (To be continued.)

Correspondence.

LETTER FROM LONDON

Women Admitted to the Royal Colleges.—The Harveian Oration.—The New Hospitals of Manchester.—The Children's Bill.

London, October 20, 1908.

The admission of women to the examinations for the diplomas of the Royal Colleges of Physicians and Surgeons is now an accomplished fact. At the quarterly meeting of the Council, on October 16th, under the chairmanship of Mr. Henry Morris, this subject came up for consideration on the motion of Mr. Clinton Dent. After considerable discussion the following resolutions were adopted:

a. That steps be forthwith taken to admit women to the examinations of the Conjoint Examining Board in England and to the examination for the diploma in public health.

b. That women be admitted to the examinations for the fellowship of the Royal College of Surgeons and to the examinations for the license in

dental surgery.

A committee was then appointed to prepare a formula for the necessary alterations in the bylaws. It will be remembered that recently a poll was taken by the Council of the fellows and members on this subject, and the result was a majority against the admission of women. The Council, however, is in no way bound to accept the decision of the members and fellows, and consequently Mr. Clinton Dent's motion was adopted. The diplomas now open to women are the M.R.C.S., L.R.C.P., and D.P.H. (granted in conjunction with the Royal College of Physicians), and the F.R.C.S. and L.D.S. The other diplomas of the Royal College of Physicians, the M.R.C.P. and the F.R.C.P., will probably also be open to women in a very short time. Thus ends a struggle which has lasted many years, several attempts having been previously made to secure the admission of women to the Royal Colleges without success. It is improbable that this will lead to any large influx of women into the medical profession. Most of the medical women are engaged in public health or school appointments; others are missionary medical officers. In general practice there has been very little demand for medical women, so that medical men in England are not very apprehensive of competition from that source. There are at present about 800 women on the British Medical Register.

The Harveian Oration was delivered yesterday by Dr. J. A. Ormerod at the Royal College of Physicians. The subject was Heredity and Disease. Dr. Ormerod first paid a tribute to Harvey. Ever since 1656, he said, these orations had, with few intervals, been delivered by a long line of distinguished physicians, and there could be little left to say of Harvey or his work. Harvey pondered on heredity, and the subject was therefore not outside the scope of the oration. First came the old question, Were acquired characters transmissible? Till recently the answer would have been in the affirmative, but it was now seen to be incompatible with Weissmann's theory. That theory was based on the continuity of the germ plasm, which was not manufactured afresh within the individuals of each generation, but was handed on from generation to generation. Men were not links in a chain of life, but rather flowers and leaves, which sprang from a common stem, the germ plasm. The reason for the resemblance of successive generations was that they were all formed out of the same stuff to the design of the same Architect. If a body suffered from any deep seated disorder of nutrition, the germ plasm probably suffered, too. It was said that there could be no inheritance of microbic disease, but might not susceptibility or power of resistance to such disease be first acquired and then inherited? Another problem was that of whether the laws enunciated by Mendel with regard to the transmission of dominant characters were applicable to man in health and disease. The only way to deal with it was by the collection of pedigrees, which must be complete both for normal and for diseased members.

After the delivery of the oration the president, Sir Douglas Powell, presented the Bisset-Hawkins medal, awarded triennially to a British medical man who had distinguished himself in sanitary science and the promotion of public health, to Sir Shirley Murphy, medical officer of health to the London County Council, in recognition of his services to the

public and to preventive medicine.

The handsome new Manchester Royal Infirmary is now completed and will be open to inspection by the public this week. Its erection in an open and healthy part of the city, about half a mile from the medical school, has occupied about 650 men for three years. The infirmary consists of forty-eight separate blocks of buildings, all connected by covered ways. Of the 592 beds provided, 240 are for medical and 300 for surgical cases. Twenty are reserved for gynæcological cases and thirty-two for ophthalmic cases. The surgical beds are distributed over five units, each of which has its own operating theatre, with anæsthetizing, recovery, sterilizing, testing, and apparatus rooms, and its own classroom attached. The medical side also com-

prises five units, each with a clinical laboratory and a classroom attached. The medical board of the infirmary assisted in the preparation of the specifications, and the result is that the hospital is one of the finest in the world for the treatment and study of disease and for the instruction of students. Expenditure upon the building has amounted to £500,-000. Of this amount, £400,000 was received from the Manchester City Council for the site of the old infirmary in the centre of the city. A public appeal was made for the remaining £100,000, in order that the new building should be opened free from debt, with its endowments intact. In response, nearly £75,000 has already been received. An appeal has also been issued for increased annual subscriptions, as it is estimated that the cost of maintaining the new establishment will be £12,000 a year more than that of the old one. Another hospital in Manchester, the Jewish, has been enlarged recently, and Mr. Winston Churchill, the president of the Board of Trade, opened a new wing last week. This institution is the only Jewish hospital in the kingdom, and has been in existence about five years. It has now forty beds and a large outpatient department, and, in consequence of the removal of the infirmary from the centre of the city, will probably have to be further enlarged in the near future.

The Children's Bill has been occupying the attention of the House of Commons since its reassembly for the autumn session, on October 12th. Mr. Herbert Samuel, under secretary for the Home Office, is in charge of the bill, and considerable progress has been made with it. An important provision of the bill deals with the overlying of infants. Mr. Samuel, in moving the clause, stated that about 1.600 infants lost their lives yearly from overlying in England and Wales, and said that there could be no doubt that drunkenness had much to do with the evil, for official statistics proved that cases occurred twice as often on Saturday nights as on the other nights of the week, and twice as often in weeks containing bank holidays as in other weeks. The existing law was inadequate, because the only charge under which the offender could be punished was that of manslaughter, and coroners' juries were naturally reluctant to bring in a verdict which would expose the mother to so serious an accusation. The bill provides that, if an infant meets its death by overlying, the offending person being over sixteen years of age, and having been at the time of going to bed under the influence of drink, shall be "deemed to have neglected the child in a manner likely to cause injury to its health,' and so to become liable to punishment under the act. The clause was passed by a majority of 125.

Therapeutical Motes.

The Treatment of Lead Poisoning.—The following prescriptions are quoted by Pron (Formulance synthetique, 1968):

| 11 | Pota num rodide, | | 11 |
|----|----------------------------|--------------------|----|
| | Di tilled water, | | 30 |
| M. | et Sig.: One tablespoonful | to be taken daily. | |

Two sulphur baths should be taken during the week.

The following powder should be given in one to two teaspoonful doses in half a glassful of water the first thing in the morning before any food is taken:

| Ŗ. | Sublime Cream | | | | | | | | | | | | | | .3v |
|----|------------------|--|--|--|---|--|--|------|--|--|--|------|--|----|---------|
| M | Sugar o | | | | ٠ | | | | | | | | | āā | 3iiss. |

A quarter of an hour before the two principal meals of the day give a teaspoonful of the following mixture:

| P, | Extract of cinchona, Fluidextract of kola, | c |
|-----|--|---|
| | Alcohol, | |
| 3.6 | Glycerin,q. s. ad. 3i | |

To overcome the paralysis apply the continuous current.

Treatment of Acute Laryngitis.—Mendel advises repose in bed in a room guarded from noise, with the inhalation three times a day, morning, noon, and night, for three to five minutes at a time, of the following solution contained in a suitable atomizer:

| $\mathbf{P}_{\!\scriptscriptstyle{k}}$ | Balsam of Peru,gr. viiss; |
|--|--|
| | Tincture of benzoin, Tincture of eucalyptus, |
| | Tincture of soap bark, |
| | Cherry laurel water, |
| | Distilled water, |
| M | |

The patient should be cautioned not to use the solution too freely at first, as it may prove irritating. If the parts are very sensitive and the solution causes irritation its use should be stopped.

Application for Toothache.—The following solution is recommended to be applied on a pledget of cotton to the cavity of the tooth:

| \mathbf{B} | Crystals of carbolic acid, | iss |
|--------------|--|-------|
| | Gum camphor, | |
| | Menthol, | |
| | turate in a mortar until liquefaction takes place, | and |
| then a | add the following mixture: | |
| | Chloroform, | . 3ii |

For Tenia in Adults.—Peschier is cited in La Clinique for September II, 1908, as the author of the following formula for the removal of intestinal worms:

M.

| \mathbf{R} | Calomel,gr. ix; |
|--------------|--|
| | Pulverized tin, |
| | Gum acacia,ää gr. xx; |
| | Oleoresin of male fern,gr. xl; |
| | Pulverized male fern root,q. s. |
| | fac pil. No. xx, and coat with silver. |
| Sig | . Ten pills to be taken in the evening at 10 o'clock |

Lotion for Cracked Nipples—A Correction.— The quantities ordered in the prescription for cracked nipples, by Marfan, printed in the *New York Medical Journal* for October 24th, page 796. should be read as grammes, and not grains, as the abbreviation "gr." would seem to indicate. In its corrected form, the formula reads:

and the remainder of the pills thirty minutes afterwards.

| 3x |
|------|
| 3v |
| 3ii |
| 3iii |
| |

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A NATIONAL "DEPARTMENT" OF PUBLIC HEALTH.

In the Presidential campaign which has now come to a close the platforms of the two most prominent parties made certain professions which were interpreted as signifying the willingness of both those parties to enact Congressional legislation having for its object the establishment of a national public health body charged with all the duties and powers that are now distributed among several bureaus in different departments of the general government. We doubt, however, if either of those parties really meant to do such a thing, and we doubt if its advocacy in a Presidential message would result in the establishment of such a national body. The platform sections alluded to may have been sops to Cerberus, and in this instance Cerberus does not appear to us to be a very formidable

For years past there have been frequent demands on the part of various medical organizations for the creation of a "department" of public health. Until recently the more prominent advocates of the policy have demanded that the head of the "department" should be a member of the President's Cabinet, but this aspiration seems latterly to have been given up, perhaps because it has come to be recognized that the Cabinet is already unwieldy and that no President would look favorably upon its further increase. At the most, a bureau would answer, and that, as we understand it, is all that is now asked for. But we have at present an admirable bureau, the Pub-

lic Health and Marine Hospital Service, charged with the main duties that would properly belong to any bureau of public health, if we except that of the registration of vital statistics, a work which the Bureau of the Census is well equipped to perform.

It seems to us that national health functions must of necessity be to some extent distributed among several bureaus, and we cannot conceive that the Bureau of Animal Industry, for example, will ever feel itself warranted in discontinuing its present activities, no matter what form of centralized sanitary service may be established. It has done good work and is doing it continually, and we are unable to see what would be gained by merging it in some new bureau or by taking it away from the Department of Agriculture or by withdrawing the Public Health and Marine Hospital Service from the Treasury Department and handing it over to the Department of the Interior, for example. It makes no difference to the country what Cabinet officer is set over a bureau, provided the bureau itself is efficiently organized and furnished with adequate powers and resources.

We have great reason to be proud of our Public Health and Marine Hospital Service. Like all other human institutions, it can of course be improved and strengthened, and we should all labor to bring about the full efficiency of which it may be made capable. Such a result is not at all likely to be attained, it seems to us, by merging its functions in those of a new bureau which must be more or less experimental and subject to disturbing political machinations. The American Public Health Association, certainly a most intelligent body of men, expressed itself, at the recent Winnipeg meeting. in favor of the utmost support of the bureau, and it will generally be conceded, we think, that the members of that association understand quite as well as any other body of men what is best for the sanitary interests of the country.

MORBIDITY STATISTICS.

It was a notable paper, entitled The Purposes and Objects of Morbidity Statistics and the Methods of Collecting Them, which was read by Assistant Surgeon General Eager, of the United States. Public Health and Marine Hospital Service, before the Section in Vital Statistics of the American Public Health Association at the recent meeting in Winnipeg. We present the entire paper in this issue and we desire to call our readers' particular attention to it. It is not alone on account of General Eager's exceptionally direct and sententious diction that the paper seems to us admirable; the facts and deductions which he presents are in the highest degree important, for it is quite as much from the

prevalence of certain diseases as from their fatality—more, indeed, we should say—that data that will prove useful may be obtained.

While General Eager's whole communication should be read carefully, there are certain points that seem to be of special interest. In the first paragraph he remarks upon the silence of the present mortality statistics as to the frequent termination of diseases of the heart and bloodvessels, cirrhosis of the liver, and Bright's disease in fatal tuberculous trouble, and of diabetes in acute pneumonia. We are confident that this defect of our mortality returns will be in great measure remedied by changes in the reporting methods that may be looked for as the result of the earnest and intelligent efforts now being made by such men as Dr. Cressy L. Wilbur, of the Bureau of the Census, and Dr. Wilmer R. Batt, of the Pennsylvania State Board of Health. However, it will take time for their labors to bring about the end desired.

General Eager mentions the extraordinary mortality from measles in the Faroe Islands in 1846 and in the Fiji Islands in 1875. We may recall, also, that measles was the cause of a great amount of incapacity for military duty, and no low source of mortality, among the Federal volunteers in the early stage of our civil war. In regard to another point General Eager says: "On the other hand, death returns in the case of a highly mortal but slightly diffused disease may give rise to false inferences as to the extent of the prevalence." We may suppose that cerebrospinal fever furnishes a conspicuous example of such false impressions. relation of diseases to climate, seasons, altitude, latitude, and soil, mentioned by General Eager, was anticipated to a great extent by the late Dr. Bowditch, of Boston, in his investigations as to the ætiology of tuberculous disease. The question of the relation of injuries and occupational diseases to the matter of employers' liability, likely soon to claim the attention of legislators on a large scale, is sketchily but effectively touched upon by General Eager. It is interesting to be reminded that, according to the census of 1890, sickness of all sorts, together with disability consequent on recent accidents, happened to be less prevalent on a certain day in the great cities of the country than in suburban and rural communities.

Compulsory registration of certain diseases, to be extended ultimately to all diseases, is regarded by General Eager as the only feasible plan for the collection of morbidity statistics. As regards the morbidity returns tabulated in the *Public Health Reports* of the United States Public Health and Marine Hospital Service, General Eager records his belief that the returns of yellow fever and the Ori-

ental plague are as complete as it is possible to make them, and that those of smallpox are constantly improving.

ECTOPIA OF THE TESTICLE.

It is impossible to give any hard and fast rules of treatment for cases of imperfectly descended testicle, because they vary so much in their features. There are two points of great importance to be borne in mind-the imperfect descent and the imperfect development of the organ. To improve the imperfect descent by operation does very little good. Indeed, although much can be done by operation to cure the imperfect descent, it is unfortunate that little can be done to improve the imperfect development. We cannot make the testicle grow to full size and maturity if it is not so designed. In consequence, operations intended merely to cure the imperfect descent of an imperfectly descended testicle must fall into disrepute for the reason that they do not improve the development of the gland, which is by far the more important element. Thus, by neglecting the question of the future development of the gland, the results of orchidopexy are unsatis-

But not only does this operation not improve the development of the imperfectly descended testicle, but often it is actually productive of harm by causing venous congestion and inflammation of the gland. Tersely, it may be stated that orchidopexy is an operation which fails very often both anatomically and physiologically-anatomically, because the gland, if fixed in the scrotum, seldom remains there; physiologically, because the testicle is largely converted into useless connective tissue instead of useful epithelium. Except in very carefully selected cases it is not infrequently a dangerous operation. But, as it has hitherto been the most popular intervention for ectopia of the testicle, it is necessary, having condemned it, to examine very carefully into the other lines of treatment left to us. These are three. The first of them is to leave the case alone. This line of treatment can be pursued safely until one or any of the following occur: 1, Attacks of pain in the testicle. 2, Attacks of inflammation of the gland. 3, Hardening of the testicle. 4, Dilatation of the inguinal canal with or without the development of a hernia. The second is orchidectomy. This is justifiable only when there is a torsion of the spermatic cord, the testicle being much sclerosed and the patient at least twenty-two years of age. Thirdly, we have orchidocælioplasty. This is the most useful operation from the standpoint of the patient, because it neglects the comparatively unimportant imperfect descent of the testicle

and it tends to remedy the all important imperfect development of the gland. An imperfectly descended testicle can rarely if ever elaborate spermatozoids, so that its whole value may be taken to lie in its internal secretion, which is fostered by the abdominal reposition of the gland, and not in its external secretion. The reposition can be done in two ways—an extraperitoneal and an intraperitoneal orchidocolioplasty. The latter is preferable, the gland being placed under conditions similar to those of the ovary. Increased liability of the onset of malignant disease is not incurred after this operation, because it is not the abdominal position of the organ, but the concurrent imperfect development, which gives it its proclivity to become malignant.

From what has been said, particularly as to the four occurrences which should terminate the period of treatment by waiting—pain, inflammation, sclerosis, and dilatation of the inguinal canal—it will be seen that very few cases of ectopia of the testicle will escape operation, more particularly when it is recalled that about eighty per cent. are associated with a hernial sac. The operation is particularly indicated in cases of movable testicle, with slight imperfections of descent, and in patients from seven to ten years of age.

THE PERIOD OF MENTAL ACTIVITY.

Dr. W. A. Newman Dorland, of Philadelphia, has written a little book' in refutation of Dr. William Osler's reputed dictum that most men were intellectually useless after the age of sixty. Dr. Dorland has examined the histories of 400 of the great men of modern times from the point of view of the period of life in which their opera maxima were produced. He divides the men into "thinkers" and "workers." This division may seem crude, for the two classes must to a great extent overlap; but it is convenient for the author's purpose.

The gist of Dr. Dorland's data may be extracted from a tabular statement which he gives at the close of the book. It appears from the table that the following great "thinkers" did not cease work until they were sixty years old or more: Astronomers and mathematicians.—Arago, Biot, Copernicus, D'Alembert, Euler, Galileo, Herschel, Lagrange, Laplace, Leverrier, Napier, and Newton. Clergymen.—Alford, Beecher, Chalmers, Farrar, Mather, Moody, Newman, Sydney Smith, Stanley, and Wesley. Dramatists.—Boucicault, Corneille, Ibsen, and Jonson. Essayists.—Arnold, Burton, Carlyle, Curtis, De Quincey, Isaac Disraeli, Emerson, Gree-

ley, Baron von Grimm, Holland, Holmes, Leigh Hunt, Johnson, La Rochefoucauld, Littré, Lowell, Max Müller, Paulding, Rousseau, Ruskin, Sainte-Beuve, and Voltaire. Historians.—Bancroft. Boeckh. Freeman, Froude, Grote, Hallam, Irving, Lamartine, Michelet, Milman, Mommsen, Montesquieu, Motley, Parkman, Pepys, Ranke, and Renan. Jurist.—Savigny. Naturalists.—Agassiz, Audubon, von Baer, Buffon, Cuvier, Darwin, Geoffroy St .-Hilaire, Humboldt, Huxley, Lacépède, Lamarck, Leidy, Linnæus, Lyell, Pasteur, and Tyndall. Novelists. - Andersen, Balzac, Blackmore, Bulwer, Chateaubriand, Collins, Cooper, Defoe, Du Maurier, Ebers, Gautier, Jacob Grimm, Wilhelm Grimm, Hugo, Le Sage, Lever, Lover, Reade, Richardson, Scott, Trollope, Verne, Wallace, Warren, and Zola. Philosophers.—Bacon, Berkeley, Condillac, Diderot, Hegel, Hobbes, Kant, Leibnitz, Locke, Lotze, Mill, Saint-Simon, Schelling, Schopenhauer, Adam Smith, and Spencer. Poets.—Arnold, Béranger, Browning, Bryant, Chaucer, Coleridge, Cowper, Dryden, Goethe, Keble, La Fontaine, Landor, Longfellow, Lytton, Milton, Petrarch, Southey, Tennyson, Watts, Whitman, Whittier, Wordsworth, and Young. Reformers.—Cranmer, Erasmus, Fénélon, Fox, Knox, Laud, Loyola, Luther, Melanchthon, Swedenborg, and Wycliffe. Satirists and humorists.—Butler, Cervantes, Rabelais, and Swift. Statesmen.-John Adams, Bismarck, Blaine. Bolingbroke, Bright, Baron von Bunsen, Burke, Calhoun, Clay, Crispi, Disraeli, Franklin, Gallatin. Garibaldi, Garrison, Gladstone, Guizot, Hastings, Hay, Patrick Henry, Jefferson, Richard Henry Lee, Monroe, Robert Morris, Lord Palmerston, Sir Robert Peel, Penn, Talleyrand, Thiers, Walpole, Washington, and Webster.

Among the "workers" who continued their activity until they were sixty years old or older are enumerated: Actors.-Forrest, Garrick, Irving, Jefferson, and Kemble. Artists.—Blake, Botticelli, Bouguereau, Constable, Corot, Cruikshank, Gainsborough, Hogarth, Landseer, Leonardo da Vinci, Meissonier, Michael Angelo, Miller, Murillo, Perugino, Rembrandt, Reynolds, Romney, Rubens, Tintoretto, Titian, Turner, Velasquez, Veronese, West, and Wren. Chemists and physicists.—Boyle, Dalton, Faraday, Gay-Lussac, Liebig, and Priestley. Explorers. - Burton, Champlain, Columbus, Du Chaillu, Franklin, Livingstone, Raleigh, Rennell, Ritter, Schliemann, and Stanley. Inventors.-Bessemer, Morse, Stephenson, and Watt. Musical composers.—Bach, Brahms, Gluck, Gounod, Händel, Haydn, Liszt, Meyerbeer, Rossini, Spohr, Verdi, and Wagner. Physicians and surgeons.-Boerhaave, Sir Astley Cooper, Harvey, John

The Age of Mental Virility. An Inquiry into the Record of Achievement of the World's Chief Workers and Thinkers. By W. A. Newman Dorland. New York: The Century Company, 1908

Hunter, Jenner, Rush, and Virchow. Warriors .-Grant, Robert E. Lee, Marlborough, von Moltke, Napier, Sherman, and Wellington.

The lives of not a few of the great men of the world have come to an untimely end, and some of them are included in the 400 studied by Dr. Dorland; otherwise he might have been able to make a still stronger showing for men sixty years of age or older. So far as his facts go in this direction, they are a notable addition to those that have been adduced by others toward the refutation of Dr. Osler's reputed dictum. But the book deals with other matters also, such as precocious intellectual development and the relations of genius to degeneracy and insanity. It is a very entertaining essay.

THE NEW VOLUME OF THE INDEX CATALOGUE.

The thirteenth volume of the second series of the Index Catalogue of the Library of the Surgeon General's Office, United States Army, has just been received. It carries the vocabulary from Periodicity to Prussia. In his letter of presentation to the surgeon general Major Walter D. McCaw, of the Medical Corps, states that the library now contains 165,342 bound volumes and 291,346 pamphletstruly a priceless collection. The volume includes the fourth addition to the alphabetical list of abbreviations of titles of medical periodicals published in the ninth volume of the second series. The 929 pages, of large size and close print, bear testimony to the fidelity with which this great work is prose-

Rems Stems.

Changes of Address.—Dr. Stillwell C. Burns, to 247 South Thirteenth Street, Philadelphia.

South Thirteenth Street, Philadelphia.

The Second Harvey Lecture will be delivered by Dr. W. G. MacCallum, of Johns Hopkins University, on Saturday, November 7th, at 8:30 p. m., at the New York Academy of Medicine. The subject will be Fever.

The Atlantic City Municipal Hospital was dedicated on Wednesday, October 21st. Addresses were made by Dr. Henry Beates, of Philadelphia; Dr. A. Bruce S. Kester, of the New Jersev State Board of Health, and Dr. A. C. Abbott, of Philadelphia.

The Buffalo Academy of Medicine.—A meeting of the Section in Medicine will be held on Tuesday evening, Newsmitz 10tl. Five principal feature of the programme

the Section in Medicine will be held on Tuesday evening, New inher toil. Five principal feature of the programme will be a paper by Dr. Solomon Solis-Cohen, of Philadelphia, on the Place of Drugs in Medicine.

The Rochester, N. Y., Academy of Medicine—A meeting of Section I, which embraces general medicine, neurology, psychiatry, materia medica, and therapeutics, was held on Wednesday evening, November 4th, at the Rochester State Hospital. Dr. E. L. Hanes, of Flushing, L. I., read a paper on Manic Depressive Insanity.

Chicago Medical Society—A regular meeting of this

1. I., read a paper on Manic Depressive Insanity. Chicago Medical Society.—A regular meeting of this society was held on Wednesday evening, October 28th. Dr. Leon Feingold reported a case of ischæmia of the lower extremities necessitating amputation. Dr. M. R. Barker read a paper on the Motility of the Stomach as a Valuable Factor in the Diagnosis of Gallstone Diseases. Dr. D'Orsay Hecht read a paper entitled Deep Infiltrating Injections in the Treatment of Sciatica, and Dr. D. N. Eisendrath read the Treatment of Sciatica, and Dr. D. N. Eisendrath read a paper on 12 or 1 or 1 The Montgomery County, Pa., Medical Society held a stated meeting on Wednesday, October 21st, at Pottstown. Dr. H. H. Whitcomb, of Norristown, read a paper on Tuberculosis of Bones, and Dr. William H. McKenzie, of Norristown, read a paper on Rhachitis. Dr. J. Lawrence Isenberg, of Norristown, president of the society, was in

The Medical Society of Saratoga County, N. Y., held its annual meeting recently in Mechanicsville, N. Y., and elected the following officers to serve for the ensuing year: President, Dr. W. C. Crombie, of Mechanicsville; vice president, Dr. J. R. McElroy, of Jonesville; secretary, Dr. J. T. Sweetman, of Ballston Spa; treasurer, Dr. T. E. Bulard, of Schuylerville.

lard, of Schuylerville.

Officers of the Philadelphia Pathological Society.—At a meeting of the society, held on October 22d, the following officers were elected: President, Dr. Joseph McFarland; vice presidents, Dr. A. J. Smith, Dr. David Riesman, Dr. David L. Edsall, and Dr. A. O. J. Kelly; secretary, Dr. R. S. Lavenson; treasurer, Dr. C. Y. White; recorder, Dr. F. H. Klaer; curator, Dr. E. H. Goodman.

The Superintendency of Bellevue Hospital.—Dr. Samuel T. Armstrong, who has been medical superintendent of Bellevue and Alliad Hospitals since July 12, 1005-182 for

Bellevue and Allied Hospitals since July 13, 1905, has resigned his position. The vacancy will be filled by the selection of some one whose name will appear on a new Civil Service list which the corporation counsel has been instructed to prepare. The selection rests with the board of trustees of the hospitals.

instructed to prepare. The selection rests with the board of trustees of the hospitals.

The Bristol South District Medical Society.—The semiannual meeting of this society will be held in New Bedford, Mass., on Thursday, November 12, at 5 p. m. The subject selected for discussion is the Bier Treatment, and the following papers will be read: Description and General Indications, by Dr. M. B. Swift; Application to Cases, by Dr. H. D. Prescott; Application to Chronic Cases, by Dr. H. C. Kirby.

The Elmira, N. Y., Academy of Medicine.—A meet ing of this academy was held on Wednesday evening, November 4th, in the new room of the society in the Federation Building. The programme included the following papers: Distrust of Drugs, by Dr. G. V. R. Merrill, of Elmira; Hygienic Errors in Rural Schools, by Dr. A. M. Loope, of Wellsburg, N. Y.; The Relation of Pleurisy to Tuberculosis, by Dr. F. C. Annabel, of Elmira.

Contagious Diseases in Chicago.—There were reported to the Department of Health of the City of Chicago 556 cases of contagious diseases during the week ending

556 cases of contagious diseases during the week ending October 24, 1908, this being an increase of 142 over the preceding week and of 277 over the corresponding week of last year. Of the total number of cases 171 were of diphlast year. Of the total number of cases 1/1 were of diputeria, 158 of scarlet fever, 89 of typhoid fever, 57 of tuber-culosis, 34 of measles, 20 of pneumonia, 15 of chickenpox, 6 of whooping cough, 1 of smallpox, 1 of puerperal fever, and 6 of diseases of minor importance.

The Health of Pittsburgh.—During the week ending October 10, 1908, the following cases of transmissible dis eases were reported to the Bureau of Health: Chickenpox. cases were reported to the butcau of freath. Children Scases, o deaths; scarlet fever, 27 cases, 3 deaths; diphtheria, 22 cases, 1 death; measles, 8 cases, 0 deaths; whooping cough, 7 cases, 1 death; pulmonary tuberculosis, 19 cases, 14 deaths. The total deaths for the week numbered 162, in an estimated

population of 565,000, corresponding to an annual death rate of 14.92 in 1,000 population.

Keokuk Medical College Closed.—On October 23, 1908, the Keokuk, Iowa, Medical College, the oldest medical college west of the Mississippi River, closed its doors. This institution was founded over sixty years ago, and was the first medical college anywhere in the world to admit women on the same terms with men. It is reported that the college equipment has been sold to Drake University, in Des Moines, and arrangements have been made by that college to receive the students who had registered at the Keokuk College. Much regret is expressed by the residents of Keokuk at the passing of one of the landmarks of

The Mortality of Chicago. - During the week ending October 24, 1908, there were reported to the Department of Health of the City of Chicago 510 deaths from all causes, as compared with 550 for the previous week and 509 for the corresponding period in 1507. The annual death rate in 1,000 population was 12.28, in an estimated population of 2,166.055. The principal causes of death were: Apoplexy, 15 deaths; Bright's disease, 37 deaths; bronchitis, 18 deaths; consumption, 42 deaths; cancer, 30 deaths; diptheria, 20 deaths; heart diseases, 46 deaths; intenza, 1 death; intestinal diseases, acute, 60 deaths; nervous disdeaths; nectains discases, acute, or deaths; nervous dis-eases, 10 deaths; pneumonia, 53 deaths; scarlet fever, 11 deaths; suicide, 8 deaths; typhoid fever, 11 deaths; violence (other than suicide), 29 deaths; all other causes, 119

Charitable Bequests.—By the will of John F. Murphy the Little Sisters of the Poor, of Philadelphia, the Catholic Home for Destitute Children, Philadelphia, and St. Vincent's Home, Philadelphia, receive \$200 each.

By the will of Andrew W. Evans, St. Christopher's Hoscittle Scarce Sea

pital receives \$200.

By the will of Horace Everett the Hayes Mechanics' Home and the Home for Incurables, Philadelphia, become

two of three reversionary legatees.

By the will of John J. Emery, the Children's Hospital of the Protestant Episcopal Church, Cincinnati, Ohio, receives an endowment fund of of \$20,000.

The Northwestern Medical Society, Philadelphia, held a stated meeting on Monday evening November 2d. The programme consisted of a "symposium" on pleurisy. Dr. Joseph MacFarland read a paper on the bacteriology and pathology of pleurisy. Dr. James M. Anders read a paper dealing with the general ætiology and points in the paper deating with the general actioney and points in the diagnosis. Dr. William Egbert Robertson read a paper entitled The Discrimination of Certain Conditions Likely to be Confused with Pleurisy. The medical treatment of the disease was the subject of a paper by Dr. Judson Daland, and the operative treatment was discussed by Dr. William S. Rodman.

Scientific Society Meetings in Philadelphia for the Week ending November 14, 1908:

Monday, November oth.—Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic So-

Tuesday, November 10th—Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences.
Wednesday, November 11th—Philadelphia County Medical Society.

ical Society.

THURSDAY, November 12th.—Pathological Society; Section Meeting, Franklin Institute.

FRIDAY, November 12th.—Northern Medical Association; West Branch, Philadelphia County Medical Society.

Hartford County (Conn.) Medical Association.—A regular meeting of the surgical section of this association was held on Monday evening, October 26th. After the presentation of a number of patients and specimens, Dr. presentation of a number of patients and specimens, Dr. E. R. Lampton reported two cases of transfusion of blood, and Dr. Oliver C. Smith reported some recent cases of surgery of the neck. The remainder of the programme consisted of a "symposium" on blood transfusion. A paper on the history of the transfusion of blood was read by Dr. Arthur J. Wolff. Dr. E. J. McKnight read a paper dealing with the indications and contraindications for blood transfusion. Dr. George N. Bell read a paper describing the operative technique. The general discussion which followed was opened by Dr. M. M. Johnson and Dr. T. N. Hepburn.

Infectious Diseases in New York:
We are indebted to the Bureau of Records of the Department of Health for the following statistics of new cases and deaths reported for the two weeks ending Octo-

| | Oc | t. 24- | 0 | ct. 31 |
|--------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | De ath- |
| Tuberculosis pulmonalis | 500 | 156 | 431 | 1.3.4 |
| Diphtheria | 3.2.2 | 17 | 321 | 21 |
| Measles | 1.3.3 | 6 | 145 | 3 |
| Scarlet fever | 120 | 2 | 162 | 6 |
| Smallpox | | | | |
| Varicella | 82 | | 81 | |
| Typhoid fever | 8.1 | 16 | 85 | 1.0 |
| Whooping cough | 20 | 1 | 26 | 1.7 |
| Cerebrospinal meningitis | 0 | 6 | 0 | |
| | - | | | |
| Totals | 1,294 | 20.4 | 1.260 | 102 |

Ninth District of the Ohio Medical Society. sixth annual meeting of this society will be held in Ports mouth, Ohio, on Thursday, November 12th. An excellent programme has been prepared, consisting of a long list of programme has been prepared, consisting of a long list of papers on subjects of interest to the general practitioner by well known physicians. The annual banquet will be held in the evening. The officers of the society are: Councilor, Dr. John E. Sylvester, of Wellston; president, Dr. L. F. Roush, of Pomeroy; secretary and treasurer, Dr. J. S. Rardin, of Portsmouth; vice-presidents, Dr. W. M. Miller, of Gallia County; Dr. J. J. McClung, of Jackson County;

of Gallia County; Dr. J. J. McClung, of Jackson County; Dr. Lester Keller, of Lawrence County; Dr. C. M. Mooney, of Pike County; Dr. A. L. Test, of Scioto County, and Dr. W. T. Cherry, of Vinton County.

College of Physicians of Philadelphia.—A stated meeting of the college was held on Wednesday evening, November 4th, at 8 o'clock. Dr. G. G. Davis exhibited a patient showing the results of an operation for irreducible congenital luxation of the hip in an adult. Dr. Edward J. Wood, of Wilmington, N. C., read, by invitation, a paper entitled Studies of the Ætiology, Pathology, and Symptom-atology of Pellagra, with Reference to its Endemic Ocentitled Studies of the Athology, Pathology, and Symptom-atology of Pellagra, with Reference to its Endemic Oc-currence. A paper on the Operative Treatment of Papil-locdema (Choked Disc), with Special Reference to Decom-pressing Trephining, was presented by Dr. George E. de Schweinitz and Dr. T. B. Holloway. The honorary librarian reported the addition of sixty-eight volumes to the library. The chairman of the Mütter Museum an-nounced the gift of a set of dental instruments used by ship surgeons about the year 1818 during their long voy

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the Alvarenga Prize for has been awarded to Dr. William T. Shoemaker, of Philadelphia, for his essay entitled Retinitis Pigmentosa, with Analyses of Seventeen Cases Occurring in Deaf Mutes, Including Laboratory Examinations of the Blood and Urine in Eleven Cases. The next award of this prize, which con sists of the income for one year of the bequest of the late Señor Alvarenga, amounting to about \$180, will be made on July 14, 1900, provided that an essay deemed by the Committee of Award to be worthy of the award is received. Essays intended for competition may be upon any subject in medicine, must be based upon original work, must be typewritten, must be sent without signature in a sealed envelope, having on its outside the motto of the paper and within the name and address of the author, and Thomas R. Neilson, on or before May 1, 1909.

The Philadelphia Academy of Surgery.—The follow-

ing papers were read at a stated meeting of this academy, held on Monday evening, November 2d: Some Experiences in Removing the Vermiform Appendix in Cases that had been Operated on, by Dr. George G. Ross; (1) Shoulder Joint Amputation for Emphysematous (Traumatic) Gargane, (2) Temporary, Persivic of the Left Vocal Cord (2) Temporary Paralysis of the Left Vocal Cord grene, (2) Temporary Paralysis of the Left Vocal Cord after Excision of Tuberculous Cervical Lymph Nodes, by Dr. A. P. C. Ashhurst; (1) Report of a Case of Acute Pancreatitis, (2) Remarks upon the Relative Merits of Suprapubic and Perineal Prostatectomy, with exhibition of specimens of the prostate gland, by Dr. John B. Deaver; The Value of the Cammidge Reaction in the Diagnosis of Pancreatic Disease, by Dr. Edward H. Goodman; (1) The Result after Seven Years of an Open Operation for Congenital Dislocation of the Kinege (2) Report of 2 Case

Pancreatic Disease, by Dr. Edward H. Goodman; (1) The Result after Seven Years of an Open Operation for Congenital Dislocation of the Knee, (2) Report of a Case Illustrating the Value of Delay in the Reduction of Herniæ, Apparently Gangrenous, by Dr. John B. Roberts.

Society Meetings for the Coming Week:

Monday, November 9th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Waterbury, Conn., Medical Association; Cuesnay, November 10th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Rennsselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay, N. Y., Medical Society; New York Obstetrical Society.

Wednesday, November 11th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of The Bronx; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

Thusbay, November 12th.—New York Academy of Medical Society of the County of Richmond, N. Y.

Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.
THURSDAY, November 12th.—New York Academy of Medicine (Section in Pædiatrics); Brooklyn Pathological Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.
FRIDAY, November 12th.—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.
Syturnay, Vorcember 11th.—Therapeutic Club, New York.

SATURDAY, Voi curber 14th. Therapeutic Club, New York.

Special Lectures by Dr. Dock at Tulane.—Dr. George Dock, professor of the theory and practice of medicine at the Tulane University of Louisiana, and formerly of the University of Michigan, will deliver a course of ten special lectures, which are open to members of the medical pro-fession, as well as to medical students. The first lecture was given on the evening of October 28th, and the second was given on the evening of October 28th, and the second on November 4th, the subject of both lectures being Addison's Disease. The third lecture will be given on Wednesday evening, November 18th, on the subject of the Thyreoid Gland—Anatomy, Physiology, Chemistry, Functions. Diseases of the Thyreoid Gland will be the subject of the fourth lecture of the series, which will be delivered on Tuesday evening, November 24th. The fifth, sixth, and seventh lectures will be on Goître, and will be held on December 2d, 9th, and 16th, respectively. The subject of beceining 13th, and will be delivered on January 6th, will be Sporadic Cretinism, and the ninth lecture will be on January 13th, and will deal with the Pituitary Body. The last lecture in the course will occur on January 20th, the subject being Osteomalacia.

Meetings of Sections of the New York Academy of Medicine.—The Section in Neurology and Psychiatry will meet on Monday, November 9th, at 8:15 p. m. After the presentation of patients and the reports of cases, Dr. August Hoch will read a paper entitled A Study of Neutral Makeup in Different Functional Psychoses.

The Section in Dermatology will hold a meeting on Tuesday evening, November 10th, at 8:15 o'clock. The programme will consist of the presentation of cases and a

general discussion.

On Thursday, November 12th, at 8:15 p. m., a meeting of the Section in Pædiatrics will be held. Dr. W. P. Northrup will report a case of obstinate vomiting cured by what is possibly a new method. Dr. Kaufman Schlivek will report a case of ulcerative endocarditis with necropsy and blood findings. The paper of the evening will be read by Dr. E. W. Scripture on Tics in Children and their Treatment. The Section in Otology will meet on Friday evening, November 13th, at 8:15 o'clock. Dr. M. D. Lederman will be read by the property of th

November 13th, at 8:15 o'clock. Dr. M. D. Lederman will present a patient, fifteen years of age, with chronic suppurative oftis during pregnancy, with pulmonary abscess and other complications. Dr. W. S. Bryant will present a patient with chronic mastoiditis. Specimens of large mastoid sequestrum will be presented by Dr. W. C. McFarland and Dr. J. B. Rae, and modifications of Gelle's experiment and device for their production will be demonstrated by Dr. Edmund Prince Fowler. Dr. Robert Lewis, Ir. will report a case of cavernous sinus thrombosis oc-Jr., will report a case of cavernous sinus thrombosis oc-curring in acute staphylococcic tonsilitis followed by death. The Section in Public Health will hold no meeting during the month of November.

Army Medical Corps Examinations.—The Surgeon General of the United States Army announces that the first of the preliminary examinations for the appointment of first licutenants in the Army Medical Corps for the year 1909 will be held on January 11, 1909, at points to be hereafter designated. Full information concerning the examination can be procured upon application to the Surgeon General, United States Army, Washington, D. C. The essential requirements to securing an invitation are that the appli-cant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received in order to lessen the travelling expenses of appliceived, in order to lessen the traveling expenses of appli-cants as much as possible. The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, and of graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School. In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before December 10, 1908. Early attention is therefore enjoined upon all intending applicants. There are at present fifty-seven vacancies in the Medical Corps of the United States Army.

Bith of Current Titerature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

October 29, 1908.

Fractures of the Os Calcis, By Frederic J. Cotton and Louis T. Wilson.

The Ethmoid Cells at Birth and their Development during Fœtal Life, By E. J. CURRAN.

A Case of Coincident Tubal and Intrauterine Pregnancy,

By CHARLES M. GREEN and ARTHUR B. EMMONS, 2D. 4. The Serum Treatment of Epidemic Cerebrospinal Meningitis, with a Report of Twenty-two Cases,

By FRANK TAYLOR FULTON. 5. Bursitis Subacromialis, or Periarthritis of the Shoulder Joint. (Subdeltoid Bursitis),

By ERNEST AMORY CODMAN.

1. Fracture of the Os Calcis.-Cotton and Wilson remind us that comminuted fracture of the os calcis is relatively common. Nearly all cases are of substantially the same type. The results are rather frequently so imperfect as to interfere seriously with work or to disable the sufferer entirely. The cause of disability is not the fracture as such, but certain displacements, which should be remediable or rather preventable. In studying the disabled cases the authors have found the following conditions of importance: Raising of the heel, shortening of the heel, outward deviation of the heel, flattening of the arch, projection of fragments into the sole of the foot, loss of motion between the astragalus and the os calcis, mechanical interference between os calcis and external malleolus. The treatment ordinarily advocated and carried out is no treatment at We have all of us been guilty of what is very nearly criminal negligence in regard to these cases. Certain measures are practicable in the treatment of fresh cases that will minimize, or often prevent, the special displacements which are the cause of disa-Provided certain measures have not been carried out, and provided disability is present, palliation is possible by apparatus in some cases, while in others operations of no great gravity or technical difficulty will insure decided improvement of function. Given a case of fracture of the os calcis with any displacement, with loss of motion, with marked bony thickening below the outer malleolus, or with spurs, or the prospect of spur formation, toward the sole, it is our duty to interfere. And our interference should occur before any considerable repair has gone on, usually at three to seven days by choice. The routine should be: Ether. Breaking up impaction (with hands alone or with a spindle inserted beneath the heel cord). Correction of any upward or lateral displacement. Securing of adequate motion between calcis and astragalus by forced pronation and supination. Reimpaction with sand bag and mallet or by manual pressure. The authors then speak of the after treatment, for which usually an apparatus will suffice. Of the causes of disability not remediable by apparatus we have: Loss of motion in the joints, excessive bony thickening below the external malleolus, bony spurs in the sole, outward displacement of the heel, extreme upward displacement of the heel. These conditions are all essentially operative.

3. A Case of Coincident Tubal and Intrauterine Pregnancy.—Green describes such a case, in which neither the history nor the physical examination seemed to warrant a diagnosis of pregnancy, either tubal or uterine; and the probable diagnosis made was ovarian cyst with twisted pedicle, with a supervening inflammatory process. On opening the abdomen the cystlike mass was found to be the uterus, four months pregnant; and the supposed thickened and twisted pedicle was seen to be a gravid tube surrounded with from four to six ounces of blood clot, forming a mass in which the vermiform appendix was involved. Taking especial care to disturb the uterus as little as possible, the appendix and the tubal mass were removed, and the incision closed. On the same evening the fœtal membranes ruptured; four days later a slightly macerated, four months' fœtus was cast off spontaneously, and the uterus was curetted. The subsequent convalescence was uneventful. The intrauterine fœtus had apparently been dead two or three days, and if so, was alive at the time of the removal of the partly aborted tubal pregnancy.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

October 31. 1908.

Sufficiency of the Official Drugs and Preparations in the Medical Treatment of Disease,

By OLIVER T. OSBORNE. Arsenic in Diseases of the Skin; with Observations on Sodium Cacodylate and Atoxyl, By M. B. HARTZELL. Work Cure,

The Serum Treatment of Carcinoma, By S. Strauss.

By S. Strauss. 3.

Some Therapeutic Observations,

By Onslow Reagan. Milk and Its Relations to Infectious Disease

By JOHN W. TRASK. The Responsibilities of Municipalities in the Ohio Valley for Epidemics of Typhoid Fever,

Choleriform Diarrhoa of Cold Weather—"Winter Cholera," By OSCAR C. Breitenback.
Fresh Air Treatment in the Home as Applied to Pædiatrics,
The Menopause, "By DANIEL H. CRAIG.

By W. FOREST DUTTON.
Of Cold Weather—"Winter By OSCAR C. Breitenback.
By ALEXANDER MCALISTER.

By DANIEL H. CRAIG.

10. The Menopause, By DANIEL H. CRAIG.

2. Arsenic in Diseases of the Skin.—Hartzell speaks of the use of arsenic in eczema, psoriasis, lichen planus, pemphigus, dermatitis herpetiformis, sarcoma of the skin, and mycosis fungoides. He then reports his results with sodium cacodylate, and atoxyl in psoriasis. He comes to the conclusion that atoxyl, like sodium cacodylate, does not possess any therapeutic properties not to be found in arsenious acid, Fowler's solution, or sodium arsenate. Owing to its great solubility in water and freedom from irritant properties, it is, however, especially adapted to hypodermic use, a method of using arsenic often preferable to administration by the mouth and one which usually gives superior therapeutic results. About the untoward effect of arsenic which deserves the serious consideration of every one who essays to use this potent drug in chronic diseases, he thinks that it is now well established that the long continued use of arsenic, especially in considerable doses, may be followed by circumscribed keratoses on various parts of the body and more particularly on the palms and soles. He reminds us that Jonathan Hutchinson some years ago called attention to the fact that epithelioma may develop at the site of these keratoses, an observation which has since been confirmed by a number of

other observers, so that there are now at least twenty cases of such arsenical epithelioma to be found in

4. Serum Treatment of Carcinoma.—S. Strauss, of New York, has developed the following theory of cancer: The cancer elements are found in utero; that is, there is an abnormal development of the embryonal cells, which group is the starting point of a carcinomatous growth. Intermingled with the healthy epithelial cells are these cancer units, and whenever the conditions for hemming them in or retarding their growth is overcome by exciting causes, such as improper living and eating, mental worry or grief, senility, etc., they multiply very rapidly, destroying and penetrating into the surrounding tissue, giving off a toxine which in time affects the entire system. Therefore, our endeavor should be to demonstrate a cancer specific reaction in the human body by means of a serum precipitant establishing its identity, irrespective of a microscopical examination. In pursuance of this theory, in the spring of 1904 he decided that possibly the inoculation of a serum taken from the lower animals suffering from a similar malignant condition, which treatment, he says, had not then been tried, might be successfully used in the human subject with the idea of arresting the disease and eventually effecting a permanent cure. He believed that the serum contained enough antibodies to neutralize the toxine circulating in the system. He found great difficulty in the course of his studies because he stood practically alone in a new field, and, therefore, received no benefit from the work of others. The serum which he uses at present is obtained directly from the lower animals suffering from malignant growths, principally the horse; the diagnosis being substantiated microscopically. Shortly after injecting the serum the face of the patient becomes flushed; there is an increase of the blood pressure, as the serum seems to have a marked effect on the spinal centres, producing pain in the back, which radiates down the legs. In some cases a chill occurs within the first few hours. After four to six hours there is an elevation of the temperature, but not exceeding three degrees in any case observed. At times there is great restlessness for the first twentyfour hours. Strauss concludes that visceral carcinoma is incurable and fatal in nearly all cases, while superficial or surface carcinoma is curable and amenable to treatment if attended to early. Carcinoma is hereditary, the tendency to its formation being transmitted to successive generations, and it becomes evident whenever the natural restraining influences are removed. The disease is on the increase, the death rate being over seven thousand in New York State in 1907. The serum treatment should be used after every operative case to immunize the system and prevent recurrence. It raises the opsonic index and causes a leucocytosis, and it should be used in inoperable cases, because it relieves the pain and ameliorates the symptoms without interfering with the natural functions of the body.

8. "Winter Cholera."-Breitenbach says that winter cholera has no specific bacteriological pathology and is a synonym for the more common forms of bowel disturbances, choleiform in nature, oc-

curring in cold weather. The use of this term, interchangeably with the nomenclature of other gastrointestinal diseases, shows the great need of more exact phraseology, based on correct diagnosis. Meteorological conditions do not prove to be the exciting cause in these epidemics of winter cholera, but only as the factors instrumental in polluting water or milk are present, do these epidemics occur. Winter cholera, as typified by these choleiform manifestations of diarrhœa in cold weather, has no exciting cause in the activity of Pfeiffer's bacillus and does not, therefore, exemplify gastrointestinal influenza. Influenza, with a symptomatology centering itself in the gastrointestinal tract, was present during epidemics of winter cholera, but these isolated cases occurred during epidemic influenza. Diagnosis in these cases is established by proving the presence of the associated microorganism. To the end of stimulating a greater enthusiasm in demanding intelligent and adequate sanitary reform, instruction in sanitary science should demand a major consideration in the medical curriculum. Legislation controlling the watersheds and preventing contamination of public waters is imperative.

10. The Menopause.—Craig observes that there are three normal types of the menopause, sometimes seen more or less in combination with another; departures from these normal types are easily recognized; the symptomatology alone will very often point to the organ or region at fault, but such deduction should always be given physical confirmation; lesions at this time are as deserving of and amenable to treatment as at any other time; neglect of such treatment engenders inestimable, unnecessary suffering and is one of the greatest factors in causing so many malignant uterine growths to attain an inoperable state of advancement; failure to properly diagnosticate and treat such cases will inevitably bring opprobrium on our profession as a

whole.

MEDICAL RECORD. October 31, 1908.

Intestinal Infection and Immunity in Tuberculosis,

By Professor A. Calmette. The Myth and the Mystery of "Ménière's Disease," By George M. Gould.

The Epileptic Voice Sign,

By L. Pierce Clark, and E. W. Scripture.
What Factors Are Necessary in Addition to Asepsis
to Secure Healing by Primary Union?
By Richard Ward Westbrook.
Preliminary Notes upon a Case of Leprosy Apparently
Cured with the X Rays, By Victor G. Heiser.

I. Immunity in Tuberculosis.—Calmette says that upon the whole, the resistance conferred by tuberculin and that which is observed in animals or in man already attacked by benign forms of tuberculosis (tuberculosis of the lymph nodes or scrofula, tuberculosis of the bone, or of the skin, lupus) appear to be of the same nature as that which is artificially effected, whether by intravenous inoculation of human or bovine bacilli, following the methods of Behring or of Koch and Schültz, or by subcutaneous inoculation of the same bacilli (Lignières, Arloing), or by the insertion under the skin of collodion sacs containing cultures of human or bovine tuberculosis (Heymans). In each of these cases it is not a question of true immunity, since the animals thus prepared, although not giving the tuberculin reaction, remain indefinitely carriers of living and virulent bacilli, and these are capable when the resistance begins to diminish of giving rise in the bodies of these same animals to serious lesions.

3. The Epileptic Voice Sign .- Clark and Scripture observe that various characteristics follow different nervous affections, thus we have tabetic gaits, the posture of paralysis agitans, the mental stigma of epilepsy and hysteria, and the like. It seems probable that there are characteristic functional stigmata in the voices of persons suffering from nervous and mental diseases. The characteristic speech of paresis and the thin, high pitched voice of paralysis agitans are well known and readily recognized by all. Many of us have observed that there is something very peculiar and distinctive in the epileptic voice. The defect is shown in the expressionless quality of the voice; it renders the epileptic incapable of singing beautifully or speaking well. To one who has lived in a large colony for epileptics for several years the alteration of the epileptic voice is both striking and obvious. The authors have studied these changes. The method, used by them, is as follows: The patient speaks into a mouthpiece that covers his mouth rather tightly; this is connected to a small metal cup, the tambour. The top of the tambour is covered with thin rubber that yields to puffs of air and vibrations. A lever connected to the rubber receives the vibrations on a rapidly revolving smoked drum or kymograph. The arrangement can be conveniently called the "tambour method." In a list of 100 cases Clark was able to detect the disease in seventy-five per cent. of the cases by the voice sign alone. There is no precisely similar defect in any other nervous or mental disease. All types of epilepsy have been under study. One case had had but four epileptic fits and had never taken medicines for his disease. The voice sign seems to develop with the disease. The more severe the epilepsy and the longer duration it has, the more marked one finds the voice sign. The sign appears to depend upon the underlying brain degeneration, of which the epileptic fits are also an expression. The voice sign persists at least several years, even in the absence of fits, showing perhaps that even a prolonged absence of fits in epilepsy does not really indicate that a cure has been accomplished. The diagnostic and prognostic value of the epileptic voice sign is obvious.

5. A Case of Leprosy Apparently Cured with the X Rays.—Heiser reports a case of leprosy in a Filipino, twenty years of age. Treatment was begun November 5, 1906, from which date his lesions were exposed every third day to x rays for ten minutes at a distance of 25 centimetres from the tube. The intensity of the light employed was just sufficient to give a distinct outline of the bones of the hand. The regular Gundlach tube and a 45 cm. spark induction coil and a mercury turbine interrupter were used. From November 21, 1906, to January 21, 1907, the treatment was the same with the exception that his head was placed within 18 cm. of the tube. During this period he commenced to show considerable improvement, in that the lesions, most noticeable in the right ear, were rapidly growing smaller. From January 21st to February

8th he was exposed at a distance of 12 cm. from the tube. From February 8th to February 26th he was exposed every two days at a distance of 12 cm., from February 26, 1907, to July 1, 1908, every two days at a distance of 25 cm. for ten minutes. During June, 1907, the affected parts presented almost a normal appearance. The lepra bacillus was difficult to demonstrate, and many specimens were often necessary in order to find it. During January, 1908, the patient was apparently cured from a general clinical standpoint, the infiltrations had entirely disappeared, there were no anæsthetic areas, the ears were normal in size, and the cosmetic effect was practically perfect, so far as the leprosy was concerned. No lepra bacilli could be demonstrated at the site of the leprous lesions at which they had heretofore been found, but they could be found in scrapings made from the nasal sæptum. Shortly before this period, vaws made its appearance among the inmates of the Leper Hospital, and he also contracted this disease soon afterwards. Between January and June, 1908, repeated microscopical examinations were made, and lepra bacilli could be found only in specimens taken from the sæptum of the nose, and during the latter part of this period, it became more and more difficult to find them even there. From June 15, 1908, to August 1, 1908, the date of the last observation, it has been impossible to find lepra bacilli in specimens taken from any portion of his body.

BRITISH MEDICAL JOURNAL

October 17, 1908.

The Antituberculosis Programme: Coordination of Preventive Measures, By R. W. Philip. Remarks on the Use and Misuse of Iron Remedies,

By E. SMITH. On the Analogy between Spontaneous Recoveries from Cancer and the Specific Immunity Induced by X Ray Irradiations of the Lymphatic Glands Involved, By H. D. McCulloch.

The Future of the Ailing Poor Law Child,

By A. D. EDWARDS.
On the Administration and Dose of Staphylococcus Vaccine, By B. C. KELLY.

"Flies" as Carriers of the Bacillus Typhosus. By E. KLEIN. (Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Medicine.

Discussion on Splenic Enlargements Other than Leu-Introduced by W. OSLER. Section of Diseases of Children.

Discussion on Fatty Acid Intoxication,

Introduced by L. GUTHRIE. The Prognosis of Infantile Convulsions, By R. O. MOON.

Section of Pathology.

 Discussion on Compensatory and Degenerative Changes in the Liver, Introduced by F. C. MOORE.
 The Typhoid Carrier Problem, with Some Experiments on Immunity in Carriers,

By J. C. G. LEDINGHAM. t2. The Production of Immunity against Dysentery Toxine,
By M. A. Ruffer and J. G. WILLMORE.

Section of Dermatology.

13. On Calmette's Ophthalmotuberculin Reaction, with Special Reference to the Diagnosis of Cutaneous
Tuberculosis,
By J. H. Sequetra.

14. The Treatment of Skin Diseases by Electrolytic Medication (tonic methods),
By H. L. Jones.

Enlargement of the Spleen.—Osler groups splenic enlargements as follows: 1. In children

disturbances of metabolism and in chronic intestinal affections rickets, amyloid disease, and in a large but ill defined group of intestinal disorders, particularly in the tropics; the pseudoleuchæmia infantum. 2. In the infections, syphilis, malaria, kala azar, and other forms of tropical splenomegaly, Hodgkin's disease and tuberculosis. 3. In primary disorders of the blood forming organs, leuchæmia, pernicious anæmia, chlorosis (hæmochromatosis; polycythæmic splenomegaly. 4. In cirrhosis of the liver, syphilitic, alcoholic, hypertrophic of Hanot. 5. Hereditary and family forms of splenomegaly: (a) with the congenital acholuric icterus; (b) with constitutional disturbances, dwarfing, etc. 6. New growths and parasites: Sarcoma, primitive endothelioma of Gancher, echinococcus, and the schistosoma of Japan. 7. Splenomegaly not correlated with any of the above or with any known cause, Banti's disease with its three stages of (a) simple enlargement, (b) splenomegaly with anæmia, (c) splenomegaly with anæmia, jaundice, and ascites. It is in this last group that the writer is especially interested. Among its chief characteristics are the following: I. An extraordinary chronicity. The spleen may be enlarged for fifteen or twenty-five years, with but little disturbance of health at first. 2. The large size of the spleen; only in leuchæmia does the organ reach a larger volume. There is no correspondence between the size of the spleen and the symptoms. 3. The blood picture, which is that of a secondary anæmia. 4. Jaundice and ascites. occur as a result of cirrhosis of the liver. Hæmorrhages; these are common. 6. Pathology. The three important changes met with in the spleen are chronic fibrous hyperplasia, an enormous proliferation of the endothelial cells of the spleen sinuses, and lastly alterations (sclerosis, thrombosis, and stenosis) in the splenic veins and in the portal system. There is no clue to the nature of the disease; it is probably a chronic infective process with its chief seat in the spleen.

8. Fatty Acid Intoxication.—Guthrie's conclusions are as follows: Acidosis or fatty acid intoxication may occur in all cases in which the liver is excessively fatty. Acetone bodies being chiefly formed from fat, it is reasonable to suppose that their origin in these cases is in the fat in the liver and in the tissues. Although a normal liver is able to deal with enormous quantities of fat in its cells, a liver whose functions are deranged may not be able to do so. A liver may become superfatted as the result of: (a) Excessive supply of fats and carbohydrates in the diet. (b) Inability to metabolise fat supplied, or to make use of carbohydrates -glycogenic disorder (as in cyclical vomiting?). (c) Deprivation of carbohydrates (starvation). (d) As the result of sepsis, acute or chronic, or the action of specific organisms; for example, in gastrointestinal affections, or diphtheria, or pneumonia. (e) As the result of poisoning by phloridzin, hydrazin, phosphorus, chloroform. (f) The existence of a superfatted liver in itself is probably not dangerous. But it implies defective metabolism and oxidation as a rule. Should metabolism and oxidation be further perverted by the action of a general anæsthetic, fatal toxæmia, not attributable to fattv acid intoxication alone, but to a general breakdown

of all the hepatic functions-proteolytic, antitoxic, and glycogenic-may occur, and in extreme cases necrobiosis of the hepatic cells (acute atrophy) may result. (g) These results are not due to the specific action of chloroform alone, but may be the consequence of administering any general anæsthetic in the presence of a fatty and disordered liver. At the same time chloroform in these conditions is the most dangerous anæsthetic of all. (h) In cases of preceding hepatic inadequacy, the administration of any general anæsthetic may prove the "last straw." (i) Treatment by alkalies or carbohydrates affords but slender hope of cure in postanæsthetic intoxication. (j) Prophylaxis. Subjects of cyclical vomiting, perhaps those especially who live chiefly on fat and carbohydrates, are potential victims to postanæsthetic intoxication. The danger is probably least toward the end, and greatest on the eve of an attack of periodical vomiting. Anæsthetics may be dangerous in cases of acute and chronic sepsis, whether due to specific organisms or intestinal saprophytes. All these conditions are likely to be associated with fatty liver and consequent acidosis with possible inadequacy of hepatic function in general. It is extremely doubtful if fatty acid intoxication is ever the sole cause of death. Whenever there is reason to suspect the existence of fatty liver and possible hepatic inadequacy to deal with fat and carbohydrates, ether with oxygen would perhaps be the least dangerous form of anæsthetic to use.

LANCET. October 17, 1908.

A Just Perspective in Mechanic,
By Sir R. D. Powell. Blood Pressure in Man, its Measurement and Regula-By SIR L. BRUNTON.

tion,
Two Cases of Multiple Rodent Ulcer, with a Note on
the Possible Relationship between Multiple Rodent
Ulcer and Epithelioma Adenoides Cysticum of
Brooke,
By H. G. ADAMSON.
The Treatment of Acute Appendicitis as it Comes

On Some Modern Methods for the Clinical Examination of Urine and Gastric Juice by the General Practitioner, By C. F. R. Weiss. A New Operating Table,
By E. W. H. Groves and E. H. E. STACK.

An Account of the Post Office Sanatorium Movement,
By C. H. GARLAND.
Motoring Notes,
By C. T. W. Hirsch. Motoring Notes,

2. Blood Pressure.—Brunton, after describing the various instruments used to determine blood pressure in man, discusses the significance and regulation of high and low pressures. In man the average normal difference between the systolic and diastolic pressure is from twenty-five to forty millimetres of mercury. Both maximum or systolic blood pressure and its relationship to the diastolic pressure may undergo considerable variations in the same person. The maximum pressure in children from eight to fourteen years of age is about ninety millimetres; from fifteen to twenty-one years it is about 100 to 120; from twenty-one to sixty-five years of age from 120 to 135 or 150; and above sixty-five years of age it may still remain at 135 if the arteries are still elastic, or it may go up to 180, 200, or even higher. In women the pressure is, as a rule, about ten or fifteen centimetres lower

than the corresponding pressure in men. Attention is directed to an abnormally low blood pressure as a possible premonitory symptom of pulmonary tuberculosis. The blood pressure is apt to fall much below the normal in cases of general debility from overwork, underfeeding, and especially from acute disease. After influenza the fall is sometimes very notable. In cases of low pressure we use abundant food, especially animal food, meat extracts, strong soups, gentle exercise, with plenty of open air and sunshine. General tonics, such as iron, arsenic, malt, etc., are useful; also such cardiac tonics as digitalis, strychnine, and caffeine. In lowered tension the symptoms usually distinctly call for tonic treatment; but in cases of raised tension the high pressure within the bloodvessels frequently gives rise to a sense of power and a desire for action. High tension is not only a direct cause of cardiac failure or ruptured vessels in itself; it also produces atheroma of the arteries, and by thus weakening them renders them more liable to break. Rupture of elastic fibres is probably the primary cause of arteriosclerosis or arteriocapillary fibrosis and of atheroma. In arteriosclerosis the fractures are single, separate, and general; in atheroma they are multiple and aggregate. This would explain the patchy nature of the disease, those parts of the arterial wall being the first to suffer where the stress is greatest or where they are least protected. The substances which tend to raise the arterial tension during advanced life are unknown, but it is probable that some products of internal secretion and tissue metabolism tend to cause contraction of the vessels with rise of blood pressure. In addition it is quite possible that the products formed from an albuminous diet during digestion in the intestine may have a similar effect. The first indication in treating rise of tension is therefore to diminish the supply of proteid food, especially meat, and to substitute a diet of bread, vegetables, and fruit, with milk, butter, and fat bacon. Eggs, fish, and fowl may be allowed if the tension is not excessively high. Alcohol, tea, and coffee should be used sparingly, if at all. The same is true of tobacco, which produces atheroma per se in animals. Moderate exercise is beneficial, but sudden exertion should be avoided. The same is true of mental work. Constipation must be carefully avoided, as it tends to raise the blood pressume. Mercurials seem to have a specially beneficial action. Cases of high tension with failing cardiac action call for cardiac tonics combined with vascular dilators. In angina morphine has sometimes to be given.

5. Examination of Urine.-Weiss describes some of the modern methods for the examination of urine and the gastric juice, which are suitable for the use of the general practitioner. Among them may be mentioned the albuminometer of Harrower, which consists of a graduated tube, and the following reagent: Phosphotungstic acid, grammes; concentrated hydrochloric acid, grammes; and 95 per cent. alcohol, 100 cubic centimetres. One cubic centimetre of urine is diluted with nine cubic centimetres of distilled water, and this is added drop by drop to the reagent, shaking after each addition until the appearance of a faint

This denotes the completion of the white cloud. reaction and the level of the fluid in the tube is read off, it corresponding to the amount of diluted urine which contains one tenth of a milligramme of albu-The latest and best saccharometer is a graduated U tube in which evolution of carbon dioxide by fermentation causes displacement of a column of mercury. The amount of uric acid may be conveniently determined by means of Ruhemann's The principle involved is the fixation of free iodine by uric acid. The apparatus consists of a graduated tube and two reagents; a iodoiodide solution, similar to Gram's solution; and carbon bisulphide. The latter is poured into the tube up to a certain mark. The iodine solution is added to a further mark. Diluted urine is then slowly added until the carbon bisulphide, which from a deep violet hue acquired on the first addition of urine, passes through various depths of pink, and finally becomes snow white. This indicates the completion of the reaction, and the level of the mixture in the tube, read off on a graduated scale, gives the amount of uric acid present. Another simple instrument is the phosphatometer, with which the amount of phosphates is determined. The reagent precipitates the phosphates, which are read off on the scale. The reagent consists of magnesium chloride, five grammes; ammonium chloride, seven grammes; strong solution of ammonia, thirty-five grammes; and distilled water, sixty-five grammes.

LA PRESSE MEDICALE September 12, 1908.

Torticollis from Inflammatory Contraction of the Sternocleidomastoid,
Paralytic Accidents in the Course of Antirabic Treat-

By P. REMLINGER. Hypertrophy of the Thymus and Thyreoidectomy in Exophthalmic Goître, By R. ROMME.

2. Paralytic Accidents in the Course of Antirabic Treatment.—Remlinger reports two cases. in one of which the treatment for rabies was followed by paralysis and anæthesia of the lower limbs, in the other by paresis of the lower limbs. In both the paralysis was transient. The author discusses the cause, but as autopsies in such conditions must necessarily be infrequent owing to the transient nature of the accidents, not much can be determined as yet in regard to it.

September 16, 1908.

Amylolytic Power of the Gastric Contents and Intestinal Digestion, By LEON MEUNIER. Muscular Physiology. Gymnastics of the Hip, By P. Desposses.

1. Amylolytic Power of the Gastric Contents. -Meunier has studied this subject in forty-five patients, testing with Ewald's breakfast, and finds that the gastric digestion of starch varies from 0 to 200. This variation he ascribes to two causes, insufficiency of the secretion of saliva and the acidity of the gastric juice.

2. Gymnastics of the Hip.—Desfosses gives in detail, with numerous illustrations, the movements of the femur in the hip joint, which, in spite of their multiplicity, are classed in three groups, 1, flexion and extension; 2, rotation inward and outward; 3, abduction and adduction.

BERLINER KLINISCHE WOCHENSCHRIFT

September 7, 1908.

Total Rupture of the Left Lobe of the Liver Going on By Chiari. By P. Mühlens. to Spontaneous Healing, Some Febrile Tropical Diseases, Some Febrile Tropical Diseases,

The Neutrophile Blood Picture in the Early Stage of

Acute Appendicitis.

By R. Kothe.

By R. Kothe.

Acute Appendicitis, By R. KOTHE.
Contribution to the Chemical and Histological Studies

of the Blood in Acromegaly,
By GIUSEPPE FRANCHINI.

Laterie with Spleno-Concerning Chronic Acholuric Icterus with Splenomegaly,

By S. Möller and H. Strauss.

megaly,
Concerning Bechterew's Flexor Reflex of the Toes,
By M. P. Nikitin.
Kernig's Symptom in Tetanus,
The Treatment of Gout,
By FALKENSTEIN.

1. Rupture of the Liver.—Chiari reports the case of a man who was under treatment for about three weeks with the clinical diagnosis of contusion of the right kidney, hæmothorax on the left side, and possible injury to the pancreas. Autopsy showed that there had been a total rupture of the left lobe of the liver, which was in the process of spontaneous healing.

4. Chemical and Histological Studies of the Blood in Acromegaly.—Franchini says that in acromegaly changes in the blood, especially in the leucocytes, are to be found frequently, even if not in all cases, and that there are also chemical changes in the composition of the blood, particularly a certain degree of lipæmia, and in general an increase of the mineral constituents, but he is unwilling to say that this fact is constant.

Acholuric Icterus with Splenomegaly. -Möller ascribes the ætiology of the clinical picture to a chronically acting noxious substance seated in the digestive tract and acting at the same time upon the blood and the liver.

6. Bechterew's Flexor Reflex .- Nikitin found in an examination of thirty-five cases of spastic paralysis both Babinski's and Bechterew's reflexes present in 57.1 per cent., Babinski's alone in 25.7 per cent., Bechterew's alone in 11.4 per cent., and both reflexes absent in 5.7 per cent. In seventeen cases in which both reflexes were present Bechterew's was present on one side only in six, a result that contradicts K. Mendel's statement that in parapareses this reflex always occurs on both sides. The cases in which Bechterew's reflex was positive, in spite of the absence of Babinski's, are of special

7. Kernig's Symptom in Tetanus.—Rostowzew reports five cases of tetanus, in four of which Kernig's symptom, flexion contracture of the knee joint, was present and well marked. He says that the literature on the subject of Kernig's symptom is too scanty to justify any conclusions, but that his observations leave no doubt that it is a constant and early symptom in tetanus. He does not consider that it can be used as a basis for a distinctive diagnosis between cerebrospinal meningitis and tetanus.

September 14, 1908.

- I. Traumatic Inflammation of the Joints and its Signification for the Opinion of the Accident Physician,
- By KÖNIG. The Clinical Signification of the Determination of Antitrypsin in the Blood, By von Bergmann and Kurt Meyer.

- The Clinical Applicability of the Method of Complement Deviation in Typhoid Diseases
- By OSCAR POSNER.
 Concerning Special Structures in Old Pus Tubes, By L. PICK

Veronal Poisoning and Glycosuria

By HERMANN NEUMANN.

Kernig's Symptom in Tetanus (Concluded),

By M. J. Rostowzew.

Propositions for the Improvement of the Plans of
Study of Physicians,

By R. Beneke. By R. BENEKE.

- Traumatic Inflammation of the Joints.-König says that it has been shown both by experiments on animals and clinically that in the great majority of cases traumatic tuberculosis develops immediately after the receipt of the traumatism. The clinical course of these cases teaches us that as a rule it has begun within the first fourteen days after the injury. But we may extend the limit of the time during which it may appear with probability of a connection between the two to two months, and even three when it is taken into account that many forms develop very slowly before the presence of the disease is noticed. But it must be shown in all these late appearing cases that pathological symptoms, such as pain, swelling, or disturbance of function, were present from the time of injury to that of the detection of the disease in order to establish the probability of the dependence of the disease on the injury. If such symptoms are not present he does not believe the disease to be due to the accident.
- 2. Clinical Signification of the Determination of Antitrypsin in the Blood.-Von Bergmann and Meyer consider the estimation of the antitrypsin in the blood to be valuable clinically as a control to the clinical diagnosis of carcinoma.

6. Kernig's Symptom in Tetanus.-Rostowzew concludes that Kernig's symptom is one of the early and also one of the late symptoms in tetanus.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT September 8, 1908.

A New Method for Testing the Function of the Stom-By Schläpfer. Concerning Bad Accidents in the Use of Apomorphine

and Concerning the Relations between the Act of Vomiting and Muscular Paralysis, By HARNACK. By HARNACK. Studies Concerning the Ophthalmoreaction of Tuberculosis,

By Wiens and Günther.

The Question of Tuberculous Changes Produced without the Concurrent Action of Tubercle Bacilli,

The Problems of Modern Orthopædics

A Screw Apparatus for Fractures of the Patella,

By BETTMANN. Mastopexia for Pendulous Breasts, By DEHNER. 7. Acute Nonpurulent Thyreoiditis, By DUNGER.

Exophthalmic Goître, By OHLEMANN. Isolated Cross Laceration of the Mesentery in Con-

Concerning Measurement and Dosage of X Rays in Absolute Units, Prostitution and Its Regulation, By Kopp.

1. A New Method for Testing the Function of the Stomach.—Schläpfer, after a description of Sahli's test, says that by the introduction of a broth containing a neutral red as a staining material into the stomach it is possible first to determine from the staining of the urine the first emptying of the pylorus and the entire motility of the stomach, and, second to ascertain in a simple manner the propor-

tionate quantity of broth and gastric juice in the fluid siphoned from the stomach, and thereby the motor and secretory function of the latter. By its union with albumin, carbohydrates, and fat the broth forms an adequate physiological stimulant. By the staining of the filtered gastric juice its peptic power may be approximately ascertained, and from the change in color in the siphoned fluid from red to yellow or the reverse, the quantity of acid and the presence and intensity of fermentation can be de-

- 2. Bad Effects of Apomorphine.—Harnack reports the effects produced on himself by a dose of apomorphine administered subcutaneously. It induced severe vomiting, associated during the final act with intense muscular relaxation, such that he had to lie for about half an hour unable to lift a finger or summon aid. He questions whether this muscular paralysis was not the result of the act of vomiting.
- 3. The Ophthalmoreaction of Tuberculosis .--Wiens and Günther, after a detailed account of their experiments, declare that they consider the use of the ophthalmoreaction in practice to be injudicious because on the one hand it gives no positive results and on the other the possibility of a serious reaction can never be excluded.
- 7. Mastopexia for Pendulous Breasts.-Dehner excised a large ellipse of skin and subcutaneous cellular tissue at the upper periphery of the mamma down to the fascia of the pectoralis major. Then he split the fibres of the pectoralis major and minor, elevated the periosteum of the third rib, passed three strong sutures of catgut deep through the gland, and fastened them to the periosteal flap. Finally he closed the first wound with sutures. The result in his case was very good.
- 8. Acute Nonpurulent Thyreoiditis.—Dunger reports seven cases. Two were preceded by influenza with a slight bronchial catarrh, one by a dry pleuritis, one by a circumscribed pneumonia, both of the latter probably originating in influenza, two by catarrh at the apex of the lungs. In the remaining case the only associated disease was an ulcer of the stomach, which could not be shown to be the cause, so in this case he thinks the thyreoiditis was
- 10. Isolated Cross Laceration of the Mesentery in Contusion of the Abdomen.-Reinecke reports a case in which laparotomy, after a severe contusion of the abdomen, revealed an extensive tear of the mesentery as the only resultant injury. Gangrene of the ileum had commenced as a result of the laceration of the nutrient vessels.

September 15, 1908.

- I. The Prevention of Puerperal Fever, By HOFMEIER.
- A Method for the Demonstration of Pigments and Their Colorless Stages, with Especial Reference to the Pigments of the Eye and of the Skin,

 By SCHREIBER and SCHNEIBER and SCHNEIBER.

 Concerning the Influence of Fulguration upon the Victoria of Cells.
- tality of Cells,
- By von Washiewski and Hirschfeid Concerning a Frequent Disease of the Bones of Children Hitherto Apparently Unrecognized,

Contribution to the Knowledge of Substances Which Cause Increase of Tension, By Comessatti. Concerning Pel's Ocular Crises and Some Rare Dis-

turbances of Sensation in Tabes Dorsalis, By KNAUER.

Two Cases of Luxation of the Metatarsophalangeal Joint. Bilateral Avulsion of the Extensor Aponeurosis of the Middle Finger, By WETTE. Treatment of Hay Fever, By Friedländer.

10. Contributions to the Surgical Armamentarium, By Ach. Contribution to the Methods of Investigation of Forms of Erythrocytes, By YAMADA. 12. The Reaction of Dry Gelatine to Moisture and its Signification in the Preservation of the Extract of

Meat, By RICHTER. 13. Technique of the Extraction of Needles, By HÄBERLIN. 14 Concerning the Health Condition in German East

By Krauss. Africa. Palliative Trephining in Choked Disc .-Von Hippel says that the palliative trephining of the skull in intracranial diseases that do not permit of a radical operation is an operation of interest, because belonging to the borderland of their specialties, to the neurologist, the surgeon, the ophthal-

mologist, and the otologist. In this paper he deals with the subject from the standpoint of the ophthalmologist alone as a preventive of blindness as the result of the venous stasis in the nerve. It has long been known to neurologists and surgeons that a choked disc will retrograde not only after the removal of an intracranial focus of disease, but after a simple opening of the skull. The statistics he gives are that of 221 patients fifty-three died after the operation, of the remaining 168 the choked disc retrograded in 100, did not retrograde in eighteen, and no statements were made in regard to this matter in the reports of the others. He concludes that the prognosis for the vision is favorable when the

favorable, if not absolutely bad, when at the time of the operation the vision has fallen so low as to be practically useless or is lost. It should not be concealed that the operation is not without danger

patient is operated upon in a relatively early stage,

that is while useful vision still exists, but is un-

although it is one we are justified in recommending because without it blindness is almost always unavoidable, while with it performed at the proper

time the prognosis is good.

Method for the Demonstration of Pigments and Their Colorless Stages. - Schreiber and Schneider describe the staining method employed, and thus sum up the results they have obtained in this manner: I, The chromatophore stroma cells of the iris possess besides the pigment holding processes of protoplasm other colorless processes the demonstration of which escapes the usual examination. 2. The silver impregnation procedure enables one to follow embryologically the distinction of the colorless young forms of the chromatophore stroma cells from the mesenchyme cells of the uvea. 3, The albinotic eye shows neither in the stroma cells of the uvea nor in the so called pigment epithelial layer of the retina a tendency toward the formation of pigment. 4, The Ribbert-Schieck theory that the weakly pigmented sarcoma is a young form of the melanosarcoma finds no positive confirmation through this method. 5, Langerhans's cells of the skin are probably nonpigmented melanoblasts. The cells of the nævus nests show no tendency to the formation of pigment.

5. An Apparently Unrecognized Disease of the Bones of Children.-Köhler describes three cases in which the os naviculare was found by the x rays to be very materially changed in size, form, structure, and proportion of lime salts. The ætiology is uncertain.

9. Treatment of Hay Fever .- Friedländer reports a case of hay fever in which quiet and deep respiration were secured by means of hypnosis.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

October, 1908.

r. A Clinical Study of Some Arrhythmias of the Heart,

By W. B. JAMES.
Subtemporal Decompression in a Case of Chronic
Nephritis with Uramia, with Especial Consideration of the Neuroretinal Lesion,

By H. CUSHING and J. BORDLEY, JR. Physical Therapeutics, By R. T. McKenzie. The Present Status of Serum and Vaccine Therapy, By M. W. Richardson.

The Paravertebral Triangle of Dulness ulness (Grocco's By F. Smithies. Sign) in Pregnancy.

Sign) in Pregnancy.
The Effect of Overcivilization on Maternity,
By F. S. Newell.

The Relative Severity of the Different Forms of the Toxæmia of Pregnancy and its Bearing upon the Treatment,

By C. FOULKROD. Treatment,

The Occurrence and Significance of Negative Results in Blood Culture Studies, By E. LIBMAN. Suggestions of the Pupil in General Disease,

By E. JACKSON.

10. Reynaud's Disease, Erythromelalgia, and the Allied Conditions in their Relation to Vascular Disease of the By B. SACHS.

 Thromboangiitis Obliterans. A Study of the Vascular Lesions Leading to Presenile Spontaneous Gangrene, By L. BUERGER.
12. The Prolonged Use and Toxic Action of Sulphonal,

By J. E. FALLEY. 1. A Clinical Study of some Arrhythmias of

the Heart.—James notes the great importance which is attached to the anatomy and physiology of the atrioventricular bundle of His. Much attention has also been paid to the study of the extra systole. The author narrates in detail the histories of two cases which show three distinct abnormalities of the atrioventricular bundle: (1) A destructive lesion of the bundle at the node; (2) an abnormal irritability or rhythmicity at the node; (3) a similar abnormal rhythmicity at the sinoauricular junction. The conclusions from the study of these cases are: (1) That complete heart block, going on to a fatal termination, is possible without the Stokes-Adams syndrome at any time. (2) That complete Stokes-Adams syndrome may exist in the presence of perfect atrioventricular conduction, an example of which has been mentioned by Lepine. (3) That there is another and closely allied syndrome, consisting of tachycardia in the presence of mitral and tricuspid regurgitation, associated with syncopal and epileptiform seizures. The physiological end result of these conditions is the same as in the Stokes-Adams syndrome, many systoles being lost by inability to open the aortic valves, while the physiological origin is entirely different, being in the one case hyperrhythmicity of the atrioventricular bundle and in the other a blocking of this structure.

3. Physical Therapeutics .- McKenzie includes in exercise as a therapeutic agent all means by which the body may be acted upon by movements, active or passive, performed by the patient himself,

by the hand of an operator, or by a suitable machine. It may be active or passive, the former including exercises of effort and those of endurance. The former include mainly those which are practised in early life, the latter those of middle life and old age. The active also includes duplicate movements, in which the dosage is measured by the hand of the operator or by the weighted lever of a machine. Such movements have as advantages accuracy, the power of isolating groups of muscles, and ability to stretch contracted parts. In passive movements the will power is not exerted and the circulation in the muscle itself is improved mechanically. application of exercise to pathological conditions of posture, of nutrition, of the circulation, and of the nervous system, success must depend upon the careful selection and accuracy of the kind of dose employed, and on persistence in following out a course of treatment. It is the neglect of these considerations which is responsible for most of the failures in its application.

4. The Present Status of Serum and Vaccine Therapy.—Richardson states that, contrary to early hopes, the great mass of bacterial disease still remains outside the antitoxine category, and that speculation has been forced to seek other theories to explain the immunity acquired after infection with organisms such as typhoid and kindred bacilli, the cholera spirillum, and the various cocci. In the fight against these specific organisms it has been determined that Nature's efforts are against the bacteria themselves and not against their toxines. now have good evidence that organisms such as typhoid, dysentery, or plague can produce soluble poisons, and that antitoxines of a moderate strength can be obtained. Studies in immunity have not only included bacteria and their infections, but a great variety of animal and vegetable cells and poisons, with their corresponding antibodies. These are considered successively, and the results which have been accomplished by them. With reference to the value of the opsonic index as a guide for the use of vaccines the author thinks the opinion has steadily gained ground that the index is so unreliable as not to justify the amount of time and trouble necessary for its determination.

The Paravertebral Triangle of Dulness (Grocco's Sign) in Pregnancy.—Smithies states that Grocco and others have demonstrated satisfactorily that when there is a collection of fluid in one pleural sac dulness may be determined by percussion on the opposite side of the spine. This dulness is roughly triangular in outline, the spinal column forming its vertical side. Paravertebral dulness is also obtainable in conditions other than simple collections of fluid in the pleural sac. Such is the case in lobar pneumonia when the consolidation lies near the spine, and with various new growths which involve the tissues of the mediastinum. The triangular form is less distinct with the latter than with pleural effusion. Paravertebral dulness is also obtainable in various conditions which are extra thoracic, and among them the author mentions pregnancy. Of the six cases reported, five were pregnant between the eighth and tenth months, and one at the sixth month. The dull areas along the spine were roughly triangular, with a hypothenuse which was more or less convex, and all were to the left of the midvertebral line. The dulness is due to the abdominal tumor which displaces other viscera upwards.

6. The Effect of Overcivilization on Maternity. Newell thinks that the conditions of modern civilized life have developed a type of woman abnormal with reference to the fulfillment of the function of pregnancy. The woman in humble life, foreign or native, who may have had privations and hard work, goes through her pregnancy without trouble, and though labor be severe she reacts well and is soon able to resume her ordinary duties. The overcivilized woman receives care and attention during her entire pregnancy, and if she survives labor it is with nerves weakened, and only after a long convalescence can she go about again. She seldom nurses her child, or nurses it but a few months. If it is thought a patient will bear labor badly, it should be brought on and terminated without reference to the period as soon as any unfavorable signs are apparent. An elective Cæsarean section will in some instances prove to be the wise procedure, even though there may be no pelvic obstruction.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBER-CULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 864.)

Rest of the Lung in Pulmonary Tuberculosis. -Dr. Norman Bridge, of Los Angeles, Cal., said' that a tuberculous lung should be kept as still as possible, especially when the disease was unilateral. It was the universal custom to keep other tuberculous organs at rest. Immobilizing the lung relieved the symptoms and helped toward recovery. Reliable statistics upon this question were difficult to obtain; it would require at least 1,200 patients under constant observation by a careful and judicially minded observer for at least two years before any satisfactory conclusion could be made. from analogy and opinion, there was no reason for keeping a tuberculous joint still that did not apply to a tuberculous lung. Violence to a wound increased scar tissue; why not also in a fibrosis of the lung? Violent coughing and lung gymnastics might disseminate the disease. Stretching of the diseased tissue was apt to injure it. Gymnastics and violent coughing really stretched the nontuberculous tissue more than it did the tuberculous. The best thing was to give the patient fresh outdoor air to breathe. The Bier method of passive congestion doubtless tended to retard the disease and to help toward recovery. It was more effective in a lung that was kept still, because there was more passive congestion in such a lung. Artificial immobilization in a case of unilateral pulmonary tuberculosis always seemed to help the lung toward recovery, as did also the effusion of serum into the pleural cavity. Cough was harmful, and it was not important to expel mucus from the brouchial tubes, on that

account. Pus was not absorbed readily from the bronchi, and so did very little harm; therefore, in such a condition it was useful to suppress cough by the power of the will or by mild drugs.

The Ultimate Results of Sanatorium Treatment.—Dr. LAWRASON BROWN, of Saranac Lake, N. Y., said that his paper was based upon a study of the patients after they had left the sanatorium of which he was one of the physicians. The cases studied had been away from the influences of the sanatorium for periods varying from one to twentythree years. Of the first 300 patients discharged from the Adirondack Cottage Sanatorium, thirtysix per cent. were untraced; of the last 2,400 patients discharged, ten per cent. were untraced. Out of 2,553 patients discharged, 1,209 were known to be living. Of these, 1,058, or 87.5 per cent., were engaged in or were able to do some work. corresponded to forty-one per cent. of the total number discharged. Sixty-three of the patients who went to make up the statistics of the paper were discharged from fifteen to twenty-three years ago. The results were considered encouraging.

SECTION III.

(Continued from page 609.)

Tuberculosis of the Cervical Lymph Nodes. Report of Two Hundred and Seventy-Five Cases Treated by Radical Extirpation.—Dr. CHARLES H. Dowd, of New York, said that tuberculosis of the cervical lymph nodes was serious, and that the mortality rate of untreated cases was little below fifty per cent. On the other hand, when a thorough operation was done the death rate was about one third of one per cent. In eighty per cent. of cases the operation was followed by cure, and in ten per cent. there was improvement. As a result of a study of cultures made from the nodes in twenty cases he concluded that cervical lymph node tuberculosis was of both human and bovine origin.

Retroperitoneal Tuberculous Glands and their Relation to Spinal Symptoms (Tabes Mesenterica.) - Dr. CHARLES F. PAINTER, of Boston, said that there were many intraabdominal and intrathoracic conditions which would confuse the diagnosis of tuberculosis of the vertebral column. Tuberculous mesenteric and retroperitoneal lymph nodes were the most common of these. The infection of these structures from the intestinal canal was very easy. He discussed the ætiology, the pathological conditions in the infected nodes, and the results of necropsies; the value of the anamnesis, the methods of physical diagnosis, and the use of the x rays. He enumerated the various conditions which resembled tuberculosis of the intraabdominal lymph nodes, and gave the signs that enabled one to form an opinion. He divided the treatment into hygienic, operative, and mechanical.

The Surgical Aspects of Tuberculosis of the Lungs and Pleura.—Dr. Samuel Robinson, of Boston, said that little or no credit could be claimed by surgery for progress in the cure and prevention of tuberculosis. Not only was the history of intrathoracic surgery characterized by slower progress than the surgery of any other region of the body, but of lesions within the chest, those of a tuberculous nature had been especially unyielding to

surgical interference, and had given no encouragement to operators to invade that region. The literature supplied us with a discouraging story of tuberculous cavities drained by thoracotomy, in which the condition of the patient was temporarily relieved, although the course of the disease was not arrested. There were a few reported cases of partial or complete pneumectomy, in which the patient's life was shortened either by the shock of the operation, by the production of pneumothorax, or by the collapse of the opposite lung on account of injury to the mediastinum. In the few cases in which the operation could be regarded as successful, death was due to the increase and the spread of the disease from the remaining lobes of the side operated upon and to the transmission of the infectious material to the opposite lung. The twentieth century hadalready witnessed an advance in the technique of intrathoracic surgery by the introduction of the negative pressure method of avoiding the dangers of pneumothorax, and also by the perfecting of the positive pressure method of obviating these dangers. The investigations of Sauerbruch, Brauer, Matas, Smythe, Greene, Janeway, Mayer, Tuffier, Seidel, and the author had proved that an exploratory thoracotomy was attended, under the new methods, by no greater danger than an exploratory laparotomy. The investigators mentioned also agreed that the partial or complete removal of one or two lobes of either lung was an operation which could be regarded as attended with little danger to the patient. The latter conclusion was based largely on animal experimentation, but it was a well known fact that the human thorax was less prone to infection and less susceptible to the dangers of pneumothorax than that of most animals which had been used in experimentation. The human mediastinum being a comparatively unvielding structure, the conditions of the unopened side of the thorax were not so unfavorable as in the dog. Granted, however, this newly justified procedure of thoracotomy for exploration or partial pneumectomy, what could be said as to the prospects of successful surgical attack on pulmonary tuberculosis? An insufficient number of patients had been operated upon since the perfection of the new methods from which to draw any conclusions. It was to be regretted, however, that the cases most suited to operative interference were also the ones commonly recognized as most promising for hygienic results; namely, those cases of isolated foci confined to one or two lobes of one lung. With the help of the x rays such cases were early recognized, even before physical signs were present, but the physician would hesitate to turn such a case over to the surgeon for lobe excision until he had resorted to general treatment. Having failed in the latter, the patient would then be a far less suitable subject for the total excision of the diseased area, owing to the extension of the infection, to the involvement of other lobes, and even to the direct transmission of infective material to the opposite lung. In other words, it could no longer be justly stated that tuberculosis of the lung and pleura was out of reach of the surgeon, but the question remained an open one as to whether drainage or excision of tuberculous foci in the thoracic cavity could ever result in the removal of the infection. It was at least to be hoped

that the disease might be more successfully attacked by "vaccine" therapy and hygiene if the larger cavities of infective material had meanwhile been excised or drained by the surgeon.

Section I. Pathology and Bacteriology. (Continued from page 810.)

IMMUNITY.

The Problem of Immunity in Tuberculosis.-Dr. Edward R. Baldwin, of Saranac Lake, N. Y., said that as a whole the results of the attempts to produce active immunity to the tubercle bacillus and its products were discouraging. Attention was then turned to the attempt to produce an antitoxic immunity. As a result of that work, soluble extractives of tubercle bacilli, emulsions, and new tuberculins were introduced with some success. The discovery of the differences in the virulence of the human and the bovine types of the Bacillus tuberculosis gave a further impetus to the attempts to produce active immunity, and the study of various pseudotubercle bacilli, and of those modified by passage through reptilians, gave new hope of such a possibility. Further work, however, seemed to show that the goal was still as distant as it ever had been. Dr. Baldwin referred to the "bovovaccine" of von Behring, to the "tauruman" of Koch and Schütz, and to the "tulase" introduced at the Paris Congress in 1905. He referred also to the work of Pearson and Gilliland on the attempt to immunize cattle by spacing the inoculations at longer or shorter intervals; to the work of Calmette and Guérin by feeding the "vaccine"; to that of Heymanns by giving the bacilli in capsules; and to that of Klimmer by the use of bacilli which had been made nonvirulent or modified by passage through other species of animals. In spite of all these attempts, however, the situation was not hopeful. The specific resistance of cattle waned after one or two inoculations of human bacilli, and failed entirely after six months to two years. Furthermore, living human tubercle might be retained in the tissues or excreted in the milk of the protected cows for many months after the inoculations had been made. Subcutaneous injections, it had been maintained, gave equally strong protection to cattle as injection by the intravenous route. By this method, however, there was the danger of producing a local abscess. There was a subtle difference between the living and the dead tubercle bacilli as immunizing agents, and this difference needed to be studied. Thus far no method had appeared of equal value to the inoculation with the living bacilli. According to the present outlook, repeated protective treatment was necessary by an agent equally in-nocuous to cattle and to man. It appeared desirable that all avenues of infection should be subjected to local immunization-for example, by feeding and by inhaling the protective agent. The finer mechanism of immunity needed close study to adjust the doses and the intervals of administration; some way of measuring immunity was needed. A correct balance must be attained between the specific response to infection, which occurred during the supersensitive phase of immunity, and the ability of the tissues to assimilate the poisons without suffering harm. An immunity which tended merely to arrest the infection, but not to overcome it, was not wholly bene-

ficial when it created ulceration at the portal of entrance. Hence the question of the beneficence of supersensitiveness artificially induced by protective inoculations must be considered. An immunity without tuberculin susceptibility might be defective; on the other hand, complete tolerance to tuberculin might be associated with a high resistance to infection in cattle. The problem, then, seemed to be to create tolerance for the bacillus poisons, or its products when undergoing lysis, and their assimilation by the tissues. Without the unknown quality called tolerance no real immunity could exist; and the earlier in life this could be established with absolute safety the more resistant would the adult become. The studies of Bartel on the influences of lymphatic cells on the tubercle bacillus, as well as those of Opie on the leucocytes, promised to enlarge our knowledge of this subject. More light might come from the studies on anaphylaxis, now in progress, and the prevention of the phenomena attending it. Finally, the problem of passive immunity was still a distant goal which gave hope of the development of an efficient therapy.

(To be continued.)

Rew Inventions.

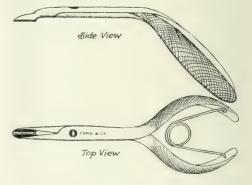
A SUBMUCOUS FORCEPS FOR REMOVING THE MAXILLARY RIDGE.

By A. J. Huey, M. D., New York,

Attending Laryngologist to the Clinic of the Health Department.

Among the difficulties encountered in the submucous resection of the nasal sæptum, none is more annoying than the removal of the maxillary ridge, often complicated by a bony spur near the floor of the nose. This has led me to devise the instrument shown in the cut.

The blades are in form like those of the rongeur bone forceps, the cutting edge being at the lower



edge of the blade. The instrument here presented has a very thin blade, so that it may be easily passed beneath a projecting spur. The bony maxillary ridge is cut away from the floor of the nose, when it may be broken with ease from its posterior attachment with a nasal forceps.

15 CENTRAL PARK WEST.

Book Motices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permuts, we review those in which we think our readers are likely to be interested.]

Operative Midwifery. By J. M. Munro Kerr, M. B., C. M. (Glas.), Fellow of the Faculty of Physicians and Surgeons, Glasgow; Obstetric Physician, Glasgow Maternity Hospital, etc. With 294 Illustrations in the Text. New York: William Wood & Co., 1908. Pp. xi-705. (Price, \$6.)

This excellent work is much more comprehensive than its title indicates. It is not a mere exposition of obstetrical operations; it deals with the nature, ætiology, and diagnosis of those conditions which may call for operative intervention. Moreover, the author does not fall into the very common error of looking upon cutting operations alone as surgical; he recognizes that manipulation and the use of apparatus are also surgical. We are glad to see gentleness of procedure the dominant feature of the author's teaching. "It would appear," he says, "as if the accoucheur considered it a disgrace not to be able to accomplish delivery by forceps or by version, and so he has recourse to unjustifiable How adequately he looks upon a patient as a patient rather than as a corpus vile to be subjected to an operation appears from the following: "A steadily rising pulse rate is of most value, and must always be looked upon as a danger signal. The same applies to a steadily rising temperature and increasing restlessness."

As regards artificial rotation of the head in occipitoposterior positions, Dr. Kerr says: "The only manœuvre I have found of real service is rotating the head by means of the hand passed into the vagina." Though he is an advocate of the use of rubber gloves in general, he says: "Although in ordinary vaginal examinations and deliveries with forceps I have had no inconvenience from them, I have found that I could not obtain a satisfactory hold of the child's leg in version, for example, and that I could not grasp hold of portions of adherent membrane when these were retained in the uterus. Indeed, in these latter operations I have sometimes required to remove the gloves before I could carry out the manipulations necessary." He thinks it impossible to predict the ultimate place of symphysiotomy, but he says: "Personally, I believe the operation fills a most useful place in practice, and that is the opinion of many others, and if every one would deliberately struggle against taking up an extreme position with regard to the operation, that place could be more exactly determined.

British obstetricians do not now write so jauntily of craniotomy as they did fifty years ago, but our author seems to be somewhat under the influence of the old teaching. "As regards the ethical and legal aspects of the subject," he says, "I offer no opinion. There are no hard and fast ethical rules nor are there any definite laws on the subject. If the matter were put before a committee of representatives of the medical and legal professions and educated lay public, I feel certain the opinion would be given unhesitatingly that it is sometimes right to destroy a living child." We believe the profession is drawing to the opposite opinion, and this is the only point in Dr. Kerr's book that grates on us. His advice in general seems to us most judicious.

A brief appendix on pelvimetry by means of the Röntgen rays, by Mr. J. R. Riddell, of the Glasgow Royal Infirmary, is a novel feature, so far as we know, of a book on obstetrics. The book is handsome from the typographical point of view, and the illustrations are for the most part exceedingly satisfactory. The work ought to be studied by all general practitioners.

Das Ohrlabyrinth als Organ der mathematischen Sinne für Raum und Zeit. Von E. von Cyon. Mit 45 Textfiguren, 5 Tafeln, und dem Bildnis des Verfassers. Berlin: Julius Springer, 1908. Pp. 432. (Price, \$3.50.)

This is a fascinating monograph, dedicated to the spirit of three investigators who opened the path for the modern study of the nervous functions of the labyrinth, Flourens, Weber, and Vierordt. It opens with the experimental fouundations of space perception as made out by the investigations of Flourens on the semicircular canals of pigeons, and then passes in review the psychological theories con-

cerning space perception.

Cyon then takes up his own studies tending to demonstrate the functions of the auditory apparatus as an organ of space perception, finishing his third chapter with a discussion of labyrinthine tonus and the relations of the cerebellum to the semicircular canals. Chapter IV is taken up largely with a discussion of the Japanese dancing mouse in its relations to the general problem. Space orientation in vertebrates and invertebrates is then dwelt upon. Chapter V makes use of the pathological evidence, while Chapter VI gives a discussion of the physiological principles underlying the Euclidian geometry. This leads the author to his final chapter on time sense and consciousness of arithmetical relations, in which he reaches the conclusion of his general thesis that the labyrinthine apparatus is not only the organ of spatial perception, but also that of time.

Any short review fails to do justice to the masterly manner in which the problems involved are handled. That they have an important bearing in medicine is unquestioned, especially to the student of the modifications of memory, of equillibration, and of time approximations. The neurologist and the psychiatrist, as well as the aurist, will do welf to know this work.

Intestinal Autointoxication. By A. Combe, M. D., Professor of Clinical Pædiatry at the University of Lausanne, etc. Together with an Appendix on the Lactic Ferments, with Particular Reference to their Application in Intestinal Therapeutics, by Albert Fournier, formerly Demonstrator at la Sorbonne, Paris. Only Authorized English Adaptation. By WILLIAM GAYNOR STATES, M. D., Clinical Assistant, Rectal and Intestinal Diseases, New York Polyclinic, etc. With Eighteen Figures in the Text, Four of Which are Colored. New York: Rebman Company. Pp. xviii-461.

This is an important book and a very valuable one, bearing throughout upon the general practice of medicine, and the medical profession of the United States will feel indebted to Dr. States for having furnished a readable adaptation of it in English. About half the book is devoted to the toxic substances generated in the intestine, to the antitoxic functions of the organism, to experimental pathology in its bearings on the subject, to the causes of intestinal autointoxication, and to the symptomatology and diagnosis. The remainder deals with the treatment by diminishing nitrogenous

putrefaction and the vitality of proteolytic microbes, by the expulsion of those microbes and their toxic products, and by stimulating the action of the anti-

toxic organs and the emunctories.

Efficient intestinal antisepsis by means of drugs is declared to be impossible, and so we have always maintained. Nevertheless, something may be accomplished in this direction. Calomel is set down as an occasional antiseptic of the first order, also the use of castor oil within reasonable limits. A one per cent, solution of menthol, too, is held to be of great value, but the author omits to mention that menthol is almost insoluble in water. The theories of Metchnikoff and others with regard to the action of sour milk in its various forms on pathogenic germs in the intestine are duly expounded, and the therapeutic value of yeast, a remedy much neglected in this country, is well set forth.

A second edition ought to be called for before long, and we hope that the translator will then correct the numerous errors of expression that have crept into the book. Some of them are as follows: "Dycrasic" and "dycrasia" for dyscrasic and dyscrasia, "brenzcatechin" for pyrocatechin, "hydrochinon" for hydroquinone, "ileus" for ileum, "typhilitis" for typhilitis, "MacBurney" for McBurney, "Bulckley" for Bulkley, "empyæmia" for empyema, and "salycilic," etc., for salicylic, etc. These are not printer's errors, for most of them occur repeatedly. Moreover, we dislike to see "&" used instead of and to connect men's names; it looks too commercial. The frequent recurrence of "Maly's" in the footnotes will lead many a reader to ask, Maly's what?

The mechanical appearance of the book is exceedingly creditable to the publishers, and we would particularly commend the tinted cuts.

BOOKS, PAMPHLETS, ETC., RECEIVED

Obstetrics for Nurses. By Joseph B. De Lee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School; Obstetrician to Mercy, Wesley, Provident, Cook County, and Chicago Lying-in Hospitals, etc. Third Edition. Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 512. (Price, \$2.50.)

American National Red Cross Textbook on First Aid and Relief Columns. A Manual of Instruction. How to Prevent Accidents and What to do for Injuries and Emergencies. By Major Charles Lynch, Medical Corps, United States Army. Prepared for and Endorsed by the American National Red Cross. With Seventy-four Illustrations. Philadelphia: P. Blakiston's Sons & Co., 1908. Pp. viii-247.

The Origin of Vertebrates. By Walter Holbrook Gaskell, M. A., M. D. (Cantab.), LL. D. (Edin. and McGill Univ.); F. R. S.; Fellow of Trinity Hall and University Lecturer in Physiology, Cambridge, etc. London. New York, Bombay, and Calcutta: Longmans, Green, & Co., 1908. Pp. ix-537.

Lectures on Principles of Surgery. By Stuart McGuire, M. D., Professor of Principles of Surgery and Clinical Surgery, University College of Medicine, Richmond, Va. Baltimore: Southern Médical Publishing Company, 1908.

Pp. 480

Atlas der Syphilis und der venerischen Krankheiten mit einem Grundriss der Pathologie und Therapie derselben von Hofrat Professor Dr. Franz Mracek in Wien. Zweite vermehrte und verbesserte Auflage. Mit 81 farbigen Tafeln nach Original-Aquarellen von Maler A. Schmitson und 26 schwarzen Abbildungen. München: J. F. Lehmann, 1908. Pp. xii-218.

A Reference Handbook for Nurses. By Amanda K. Beck, Graduate of the Illinois Training School for Nurses. Second Edition, Revised. Philadelphia and London: W. B. Santskin Company, 1988 Pp. 1990. (Price, \$125.)

Miscellany.

Corrigenda.—In Dr. Nepper's article on Mucomembranous Enterocolitis, published in our issue for May 23d, the concluding paragraphs should read:

I. The false membrane is the result of increased coagulative power and diminished biliary secretion.

2. Mucomembranous enterocolitis is the result of insufficient biliary secretion.

In Dr. Beverley Robinson's article on the Treatment of Acute Coryza, printed in our issue for October 31st, the formula at the top of page 844 should

 B
 Oleoresin of cubeb,
 m xx;

 Powd. camphor,
 gr. x;

 Glycerin,
 .3j;

 White petrolatum,
 .5ij.

Meir Remedies.

In order to satisfy a demand for information regarding the additions to our materia medica, the following notes on new remedies have been compiled from the various journals of medicine and pharmacy published in this country and in Europe. Modern chemical synthesis is constantly adding to the number of extrapharmacopacial remedies, and the sources of information regarding them are not readily accessible to practising physicians, being scattered through a mass of literature and entailing considerable research. It is intended to publish these notes regularly, and in this way keep the medical profession informed regarding remedies of recent introduction.

Cellasin is represented to be a carbohydrate and fat splitting ferment, which forms a brownish white, amorphous, odorless powder, soluble in water that has been rendered alkaline. It is said to be capable of decomposing 3000 times its weight of sugar or starch, and of emulsifying and decomposing fats in an alkaline medium. It is administered in doses of 2 to 14 grains thrice daily after meals, in disorders of nutrition, including diabetes and early tuberculosis.

Cheiroline is an alkaloid obtained from an extract of the wallflower, *Cheiranthus cheiri*, which is of special interest, owing to the fact that it is one of the few alkaloids containing sulphur in its molecule. It is soluble in alcohol, ether, and chloroform, but insoluble in water. It is said to have an antipyretic action, similar to quinine.

Cinerol is the name given to a mercurial oil used for the hypodermic treatment of syphilis, and consisting of mercury, 4 grammes; sterilized palm oil, 20 c.c.; sterilized sesame oil, 20 c.c. No directions are given for its manufacture, but the mercury is probably extinguished in the old fashioned way by assiduous rubbing with the palm oil, the sesame oil being added by degrees.

Decilan is a formaldehyde potassium oleate solution; in which part of the formaldehyde is combined as trioxymethylene. It forms a clear, yellow, alkaline liquid which mixes clearly with water, alcohol, and glycerin. It is recommended for use as an antiseptic and disinfectant.

Ennan, which is put up as a tablet weighing I gramme, is a combination of cresol with sodium stearate formed by the addition of alcohol, and containing free alkali. Each tablet contains 50 per cent.

of cresol. It is used as a surgical antiseptic, deodorant, and disinfectant.

Enterin Poehl is an organotherapeutic substance forming a yellowish brown powder, which dissolves in 100 parts of water to form a turbid solution. It is said to represent the synergistic group of the secretions contained in the duodenum and jejunum freed from toxines. It is recommended as a remedy in debilitated conditions of the pancreas and to increase the functional activity of Lieberkühn's and Brunners' glands.

Mercury Bromide Solution for the hypodermic administration of mercury consists of mercurous bromide, 1,8 grammes; sodium bromide, 1.4 grammes; distilled water, enough to make 100 c.c. It is in-

jected in doses of 1 to 2 c.c.

Noridal Suppositories, a remedy for hæmorrhoids, contain in each suppository the following ingredients: Calcium chloride, 0.05 gramme; calcium iodide, 0.01 gramme; paranephrin (adrenalin chloride), 0.0001 gramme; balsam of Peru, 0.01 gramme, with a vehicle of cacao butter, lanolin, and spermaceti.

Paratoxine is the name applied by two French physicians (Professor C. Lemoine and Professor E. Gerard, of Lille) to a mixture of cholesterin and biliary extract obtained from the bile of young oxen and pigs by extraction with petroleum ether boiling at 113° F. It forms a solid extract, which contains, besides cholesterin, lecithine, oily bodies, and traces of an undetermined nitrogenous substance precipitated by ether. Paratoxine is partly soluble in cold alcohol, very soluble in fixed and volatile oils, and in liquid petrolatim. It is recommended for use in the treatment of tuberculosis and is best given hypodermatically.

Perglutyl is a solid form of hydrogen dioxide. which is the subject of a German patent. It is made by dissolving gelatin in hydrogen dioxide solution by the aid of a gentle heat, and adding sufficient glycerin to yield a solid product when cooled. By varying the proportions of glycerin and gelatin varying melting points may be obtained. The perglutyls of the market melt between 77° and 104° F. It can, however, be made of such a consistency as to permit of its being powdered. It is used in all the indica-

tions in which hydrogen dioxide is used.

Phenolphthalein and Phenolphthaleinic Disodoquinone.-Phenolphthalein has a marked laxative and purgative effect in man, but produces no griping nor irritation of the gastrointestinal mucous membrane. The same is true of phenolphthaleinic disodoquinone, a soluble derivative which acts less strongly, and to which the name of sodophthalyl has been given. These substances, for some reason, act less energetically on animals. They are supposed to stimulate the hepatic, pancreatic, and intestinal secretion, and probably stimulate the intestines both directly and reflexly. Sodophthalyl may be given hypodermically, when its action is less marked, but on longer duration. The hydragogue action of phenolphthalein is so marked that it is spoken of as an "intestinal diuretic," and is said to be a powerful eliminating agent in toxic conditions.

Spirosal, the monoglycolester of salicylic acid, forms a nearly colorless and odorless liquid that is

easily soluble in alcohol, ether, chloroform, and benzol, as well as in 110 parts of water and in 8 parts of olive oil. It is miscible with an equal weight of petrolatum or lard. Undiluted it is used as an application for rheumatic pains, and as an embrocation in troublesome perspiration.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending October 20, 1008:

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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the public health and marine hospital service for the seven days ending October 21, 1908:

Billings, W. C., Passed Assistant Surgeon. Relieved from duty at Vancouver, British Columbia, and directed to proceed to Washington, D. C., for further orders.

proceed to Washington, D. C., for further orders.

Blanchard, J. F., Acting Assistant Surgeon. Granted two
days' leave of absence from October 22, 1908.

CARMICHAEL, D. A., Surgeon. Granted eighteen days' leave of absence from November 16, 1908.

COFER, L. E., Passed Assistant Surgeon. Relieved from

duty in the Hawaiian Islands and directed to proceed

to Washington, D. C., for further orders.

Grubbs, S. B., Passed Assistant Surgeon. Directed to proceed to St. Petersburg, Russia; Berlin, Germany; and Libau, Russia, on special temporary duty. Detailed to represent the Service at the meeting of the International Committee at Paris, November 4, 1908.

Heiser, V. G., Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the Southern Medical Association at Atlanta, Ga., November 10 to

12, 1908.

LYALL, ROBERT, Acting Assistant Surgeon. Granted twelve days' extension of leave of absence, without pay, from

October 5, 1908.

RODMAN, J. C., Acting Assistant Surgeon. Granted ten days' leave of absence from October 15, 1908.

EDWARD, Pharmacist. Granted seven days' leave of absence from October 14, 1908, under paragraph 210, Service Regulations.

STIER, CARL, Pharmacist. Granted one month's leave of

absence from November 8, 1908.

STONER, J. B., Surgeon. Granted five days' leave of ab-

sence from October 19, 1908.

PPAN, J. W., Acting Assistant Surgeon. Directed to proceed to Eagle Pass, Laredo, and Brownsville, Tex., and Naco, Douglas, and Nogales, Ariz., on special temporary duty.

VILLOLDO. Pedro, Acting Assistant Surgeon. thirty days' leave of absence from October 20, 1908.

WHITE, M. J., Passed Assistant Surgeon. Granted seven days' leave of absence from October 16, 1908.
YOUNG, G. B. Surgeon. Directed to proceed to Port Huron, Mich., and Milwaukee, Wis., on special temporary duty.

Appointment.

John K. Thompson appointed a pharmacist of the third class.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., October 17, 1908, for the purpose of making a physical examination of cadets of the Revenue Cutter Service. Surgeon L. L. Williams, chairman; Passed Assistant Surgeon J.

ssistant Surgeon J. T. Burkhalter, recorder. Board of medical officers convened to meet at the Marine Hospital, New Orleans, La., upon the call of the chairman, for the purpose of reexamining a candidate for a position in the Life Saving Service. Surgeon J. H. White, chairman; Passed Assistant Surgeon H. W. Wickes, recorder.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., October 26, 1908, for the purpose of making a physical examination of cadet engineers of the Revenue Cutter Service for promotion. Surgeon L. L. Williams, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Army for

the week ending October 31, 1908:

BINGHAM, E. G., Captain, Medical Corps. Ordered to inspect Hospital Corps Detachments of the New York State National Guard in Buffalo, Rochester, and Bing-

hamton, N. Y. Grubbs, R. B., Captain, Medical Corps. Ordered from Fort McIntosh, Tex., to Fort Sam Houston, Tex., for

observation and treatment.

HASSELTINE, H. E., First Lieutenant, Medical Reserve Corps. Left Fort Thomas, Ky., on leave of absence

for two months.

HUBER, E. G., First Lieutenant, Medical Corps. Relieved from further duty with Company C, H. C., at the Genfrom turtner duty with Company C, H. C., at the General Hospital, Washington, D. C., and ordered to Fort Slocum, N. Y., for duty.

LYNCH, CHARLES, Major, Medical Corps. Ordered to inspect the Hospital Corps Detachments of the New York State National Guard in New York City.

QUINTON, W. W., Capitain, Medical Corps. Granted an extension of two months to his sick leave of absence.

RHOADS T. L. Capitain Medical Corps. Ordered to Wash-

RHOADS, T. L., Captain, Medical Corps. Ordered to Washington, D. C., for examination for promotion.

ROCKHILL, E. P., Captain, Medical Corps. Ordered to Denver, Col., for examination by an Army retiring board.

SANFORD, J. L., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month

STOCKARD, J. K., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month, about December 5th.

WHEATE, J. M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Yellowstone, Wyo., and ordered to Fort Lincoln, N. D., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending October 31, 1908:

ELLIOTT, M. S., Surgeon. Detached from the Maine and ordered to the Naval Hospital, Washington, D. C. HUNGER, C. B., Assistant Surgeon. Detached from the Maine and ordered to the Naval Hospital, Portsmouth,

CORMICK, A. M. D. Surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the Maine as Fleet Surgeon of the Third Squadron, McCormick, A. Atlantic Fleet.

Births, Marriages, and Deaths.

Born.

RICHARDS.—In Havana, Cuba, on Thursday, October 22d, to Captain Robert L. Richards, Medical Corps, United States Army, and Mrs. Richards, a son.

Married.

BAKER—Noble.—In Washington, D. C., on Saturday, October 24th, Dr. Chester A. Baker and Miss Adeline T.

BUSH-PHILLIPS.—In Armada, Michigan, on Wednesday, October 21st, Dr. Howard J. Bush and Miss Edith Phillips.

HIGGINS-MULVEY .- In Philadelphia, on Wednesday, October 28th, Dr. Joseph F. Higgins and Miss Mary Irene

TILLEY—ROBLIN.—In Syracuse, New York, on Tuesday, October 20th, Dr. Frank W. Tilley, of Washington, D. C., and Miss Bertha Irene Roblin.

Died.

BUCKLEY.—In Philadelphia, on Sunday, October 25th, Dr. William C. Buckley, aged seventy-five years.

CAFFEE.—In Carthage, Missouri, on Friday, October 23d,

Dr. A. H. Caffee

FENNEL.—In Cincinnati,, Ohio, on Friday, October 23d.

Dr. Otto Fennel, aged forty-seven years.

Graham.—In Batavia, N. Y., on Tuesday, October 27th,
Dr. Richard Fred Graham, aged thirty-one years.

HAWKINS.—In Bayou Chicot, Louisiana, on Thursday,

October 22d, Dr. J. E. Hawkins, aged seventy-one years.
HUTCHINS.—In Spokane, Washington, on Wednesda
October 28th, Dr. Edwin E. Hutchins. Washington, on Wednesday,

NICOLL—In New Windsor, New York, on Tuesday, October 27th, Dr. Henry D. Nicoll, aged sixty-four years.

Person.—In Lincoln, Nebraska, on Thursday, October

22d, Dr. Edward Person. PLYMPTON.—In Brooklyn, New York, on Thursday, October 29th, Dr. Harry Plympton, aged fifty years.

Scott.-In Germantown, Pennsylvania, on Saturday. October 24th, Dr. A. W. Scott, of Syracuse, New York, aged

fifty-seven years.
Tuttle.—In Hyde Park, Massachusetts, on Sunday, October 25th, Dr. Samuel Albert Tuttle, aged seventy-one

Voerster.—In St. Louis, Missouri, on Monday, October 26th, Dr. Engelbert Voerster, aged sixty-six years. WALSH.—In Milwaukec, Wisconsin, on Sunday, October 25th, Dr. Thomas Gregory Walsh, aged forty-seven

Wengenroth.—In Boston, on Thursday, October 22d., Dr. Adolphus Wengenroth, aged fifty-eight years. Williams.—In Denorwick, Canada, on Saturday, Octo-ber 24th, Dr. Wellington Williams, of Theresa, New York, aged forty years

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and Medical News

A Weekly Review of Medicine, Established 1843.

Vol. LXXXVIII, No. 20. NEW YORK, NOVEMBER 14, 1908.

WHOLE No. 1563.

Original Communications.

THE RELATIONS OF THE PRIEST AND THE PHYSICIAN.

A Sermon Preached in the Memorial Church of the Good Shepherd, Rosemont, Pa., on St. Luke's Day, October 18, 1908.

By the Rector, the Rev. Arthur B. Conger.

Give place to the physician, for the Lord hath created him: let him not go from thee, for thou hast need of him. There is a time when in their hands there is good success. For they also shall pray unto the Lord, that He would prosper that which they give for ease and remedy to prolong life.—Ecclesiasticus xxxviii, 12-14.

O Lord, by these things men live, and in all these things is the life of my spirit; so wilt Thou recover me, and make me to live.—Isaiah xxxviii, 16.

Of St. Luke our positive information is slight, as is the case with most of the writers of Scripture; the reason being, strange as it may sound to modern ears, their purpose was to sink, not exploit, their own personality, that they might hold up the character of God to the affection and admiration of their readers and His truth to their contemplation But the most reliable indications and guidance. we possess seem to suggest that he was a freedman, what he himself would call one of the Libertini, born in Lucania, in Southern Italy, whence his name; that he completed his medical studies at the world renowned school of Tarsus, where he met St. Paul and "learned Christ." That he was highly educated need not be said to the reader of the Greek Testament, who has been fascinated by his polished sentences and struck by his clear distinctions and the accuracy of his historical knowl-

There can be little doubt that when St. Paul styles him "the beloved physician," he employs no empty phrase, but one which welled up from a very full heart and traced its source to a skill, fidelity, and tenderness which memory treasured with a firm and grateful tenacity. For we find that on each occasion when the "we" introduced into the narration apprizes us that the Evangelist has joined the Apostle, the latter was suffering extreme physical ill. When they met at Troas it was after St. Paul had been detained in Galatia by "the infirmity of his flesh." Again, when they met on the voyage to Jerusalem, St. Paul had had the "sentence of death in himself," had been dying daily, had been carrying about in his body the dying of the Lord Jesus. And the ministrations given with so much care and zeal and attended by results so beneficent that the

Apostle was enabled to continue his great work, to a man of his character and warmth of heart, won lasting affection and admiration almost unbounded.

Now, here, if you will permit me, I wish to find the fundamental relation of the priest to the physician. It is personal. It is founded upon appreciation of gifts and culture, of fidelity to duty, which, when necessary, is so self sacrificing as to border upon, if it does not often reach the heroic. If I may be pardoned for momentarily giving this sermon a personal note, I should like to grasp the opportunity to say that in my experience, and I wish to include in that what I have observed in the many and varied homes I visit. I have found no class of men who had the brains, knowledge, culture, and conscientious devotion to what appeared to them to be their duty, exhibited by physicians. And I should like to say a word for their most able coadjutors, the trained nurses. They differ, of course, like every other class taken from our imperfect humanity. But, on the whole, I do not believe that any other vocation develops in women equal sagacity, skill, and delicate manifestation of tact and sympathy. And while there are probably those who fail to appreciate them, I think they have the regard and in many cases real affection of the great majority of their worthy patients.

This is my first idea, then. "We honor" you, as

the lesson says, "for the uses we may have of you" and also for what you are in yourselves. Can we get any further than that? For instance, have you any use or uses for the priest? Dr. Mitchell has recently said that the physician who in cases where a certain moral mandate was to be impressed upon the patient has never sought the aid of the clergyman must have missed some valuable assistance. It may, perhaps, be assumed that reputable physicians will generally coincide with this judgment. But is this the best and all that you can do with Then I must tell you frankly that the clergy will never be satisfied with this meagre crumb falling from your bountiful table. And I will tell you why. We have a supernatural gift from God, our Maker and only Healer, and we "travail in birth" till that gift has been bestowed upon those committed to our care. Now, in saying this do not suppose that I purpose to engulf you in what has been described, with perhaps better judgment than wit, as "the delirious round of the Eddy." Besides, I entirely concur in the opinion of one of our most distinguished physicians that when a suggestion has to be made to a hypnotized subject it had better be made by a doctor than a priest.

But is it not true that large sections of the medical profession are restive under any suggestion of

the supernatural? If such is the case it would not be very surprising to me. They spend a large portion of their time and thought on the merely, exclusively physical. They compass land and sea that they may compel the earth to give up its treasures that in the laboratory and the mortar they may convert them into remedies for disease. They notice with care and exquisite nicety the products of chemical change, they observe and register with great accuracy the action of every modification of a drug. Their minds are continually occupied with one field of causes and results. Now, the mind forms habits as well as the body; and it is not hard for me to see, at least, that the custom of looking only at a particular class of phenomena and changes should gradually merge into the conviction that there were no others worthy of contemplation, if it did not go as far as to say that there were no others at all. As it has been strikingly put, their attention is so unfailingly fixed on second causes that they lose all sense and capacity for a first cause. But we ought to recognize this as a pitfall. The fact is that the very intelligence within us which leads us to look for and assign a cause compels us to affirm that behind all causes that we can trace there must have been One Who endowed them with potency. And, if my language seems hard to receive, this from an old Indian book, thousands of years before our era, perhaps, cannot be rejected: "How could that which is be born of that which is not?" I think you will agree with Max Müller: "The very question supplies the answer. It could not."

Now, under the guidance of this same most accomplished student of thought-and he is more useful to our purpose because he did not believe in supernatural religion—I should like to lead you on to ground where we both may stand firmly. He says: "That though the senses seem to deliver to us finite experiences only, many, if not all, of them can be shown to involve something beyond the known, something unknown, something which I claim the

liberty to call infinite:

"That in this way the human mind was led to the recognition of undefined, infinite agents or agencies beyond, behind, and within our finite experience;

"That the feelings of fear, awe, reverence, and love excited by the manifestation of some of these agents or powers began to react on the human mind, and thus produced what we call Natural Religion in its lowest and simplest form—fear, awe, reverence, and love of the gods." (Natural Religion,

pp. 105-6.)
"If," says this very able writer, "the psychological analysis of the earliest religious concepts as I had given it is correct—and no one, I believe, has denied the simple facts on which it rests-it follows that religion is a psychological necessity, and not, as Positivist philosophers maintain, a mere hallucination or a priestly fraud." (Ibid., 194.)

It will perhaps be felt that it is a far cry from this rudimentary position to the "things hard to be understood" in developed Christianity. And out of mercy to you I shall not this evening attempt to cover the distance. It is perhaps enough to say that if religion is necessary the best is none too

good for us.

With this in mind, then, let us quote from Dr. Dercum's very valuable paper. "The relief which patients experience by a full account of their symptoms, and the inevitable concomitant emotional discharge, is seen, in a more marked degree of course, and yet typically, in the making of confessions; at times the demand for relief under these circumstances is so great and so insistent that the sufferer voluntarily makes statements which he knows may lead to disgrace, imprisonment, and at times even to death." . . . "The therapeutic efficacy of their procedure Breuer and Freud explained as the catharsis of the repressed, 'locked up' emotion which had been attached to or associated with the suppressed psychic experience." (Therapeutic Ga-

zette, May 15, 1908.)

Under such conditions, which frequently occur in a physician's practice, what can he do? I assume that he always gives sympathy and, when possible, advice. Can he do more? Suppose we accept the fact that when Christ after His resurrection, in order to provide for all time for this most tragic want of the soul a remedy which would ensure peace as well as mere disclosure, said to His Apostles: "Peace be unto you; as My Father hath sent Me, even so send I you. And when He had said this He breathed on them and saith unto them, Receive ye the Holy Ghost: Whose soever sins ye remit, they are remitted unto them." And I need not call your attention to the number of instances where this gift, which, always the sovereign pre-rogative of God, was dispensed at His command through the agency of His representatives, always for the purpose which St. Paul in one instance pauses to state, "lest perhaps such an one should be swallowed up with overmuch sorrow . . . lest Satan get an advantage of us." For what is it, after all, that causes the terrible emotional upheaval which the physician sees in some instances to threaten reason itself, and compels confession? It is the sense of guilt, is it not? The awful shame at the recollection of the sinful act or habit and the knowledge that it deserves punishment. This God can remove, and he can restore the soul to snowy cleanness. And because many of us are so constituted that we obtain assurance that absolution has been passed upon us, only when he hear it from human lips, the Great High Priest when He was about to leave this earth authorized His underlings to speak the words in His name.

Suppose some one says I do not believe in this. I answer that as far as the psychotherapeutic value of the sacrament is concerned that makes no difference if the patient does. His restoration to health is what you aim to achieve. And the relief to his nervous tension is accomplished by his belief, not yours. And so on every ground it seems to be the wisdom of the physician to send such patients to

the priest or the priest to the patient.

I feel quite sure that most seriously minded physicians will not undervalue the psychiatric benefit of prayer. The reasons are so obvious as to be unnecessary to state. And this is the reason I suppose that we are told: "Is any sick among you? Let him call for the priests of the Church, and let them pray over him, anointing him with oil in the name of the Lord, and the prayer of faith shall save the sick and the Lord shall raise him up. There is also the Holy Communion, "The Body of our Lord Jesus Christ, which was given for you; preserve your body and soul unto everlasting life." I could from my own experience relate many remarkable instances of physical benefit resulting from all of these agencies. This does not seem germane to our present limited subject. I will ask the physicians, however, to believe the fact and give us priests the opportunity to contribute the gifts with which God has endowed us to assist and supplement those which He so efficiently administers for the bodies and souls of men through Please do not leave orders that we are to them. be excluded from the sick room. It may be that some priests have not every gift of delicacy and But might not the same be said of some physicians? I think you will find in all but exceptional cases, typhoid fever, for instance, all religious people physically benefited by our visits, and in a large percentage also of those whose spiritual life may gain its first serious impulse through the chastisement of illness, wisely directed by the expe-

rienced priest. I spoke at the outset of the grateful obligations of the priest to the physician which make it a pleasure for us to reflect upon and acknowledge. wonder if it is possible for us to reciprocate? the priest make any return to the physician? Of all professions, except my own, it would appear that that of the medical practitioner needed a life near to God more than any other. He is constantly in the presence of the mystery of pain. He can do much to relieve it; there is much of it that he cannot mitigate. He is in daily contact with death. Can he dismiss these things and go gayly to the next case? I think not. I know his tender heart is often racked by pain that passes from the sufferer into and sometimes through his soul. To be inspired then with a vivid realization that there was a great purpose in it all—that that nature which by sin had afflicted itself with disease, which issued in suffering and death, which by untold suffering even unto death had been redeemed by God, who enwrapped it within the folds of His Divinity that He might effect its purification, its restoration, must still in each individual bear its cross that he may share in the purity and health therein assured must buoy him up with hope and lend him courage

It does seem to me, my brethren, that every physician would indefinitely enlarge his sphere and increase the joy of his labors by taking unto himself the "truth as it is in Christ Jesus." Many a doctor has found the half hour in church in the early morning a source of strength for the labors of the day. And if the midday hours must be given to patients, there is still Even Song, with its sweet and lofty praise. There is the heart united to God in prayer and constantly lifted up to Him in the intervals, perhaps the perplexities, of a crowded and trying day.

to persevere.

It was, possibly, the special lines of study and the exigencies of a physician's life which led to those specific characteristics which discriminate the Third Gospel from each of the others, always recognized, but I think never expressed with greater charm than by the master of sacred poetry in the Middle Ages—Adam of St. Victor:

To Luke the ox belongs, for he, More clearly than the rest, doth see Christ as the Victim slain; Upon the Cross, as altar true, The bleeding, spotless Lamb we view, And see all else in vain.

IRON:

Metallic and Magnetic, Physical and Philosophical; Its Place in Mythology, in Demonology, in Astrology, in Medical and Surgical Therapeusis.

By JOHN KNOTT, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A., Etc., Dublin, Ireland.

Solid, substantial, practical, and unobtrusive, iron approaches perhaps most nearly, in one direction, the reputation of fluid, slippery, weird, and uncanny mercury-in the possession of a specific power over the human organism which can be readily demonstrated in health, and may be beneficially utilized in the treatment of many of the most important varieties of disease. In this respect it also approaches more nearly the Valentinian reputation of antimony, and the Paracelsian one of sulphur, than does the all healing power so frequently claimed for gold in mediæval times, or the less comprehensive ones attributed to silver, or the wide range of curative effects discovered in the employment of the preparations of other metallic elements, as of the plumbic salts by the enthusiastic Goulard. The panaceal properties attributed to certain elements in those prescientific centuries had, very naturally, the effect of producing their tentative application in all types and varieties of disease. One good result at least was reached-pretty surely, indeed, after the loss (or sacrifice) of numberless constitutions and lives: The discovery of our most reliable (empiric) remedies. When all diseases, without exception, were due to either coagulation of the mercury or combustion of the sulphur (or effervescence of the salt) of the human economy, a desperate effort was made to replace the loss of the spoiled or missing element by introduction of a new supply from without. A very interesting specimen of the therapeutic information so obtained was supplied in the case of cutaneous disease. In those centuries when dirt was never removed from the integument, in accordance with the culture of the virtue of humility; and vermin were respectfully preserved, in accordance with the apostolic precept of mortification of the flesh; and syphilis was just quite new to Europe, at least the malignant contraband edition which had been directly imported from the West Indies, a very large proportion of the cases which exercised the skill and resources of the healer were those of skin And the results of the "experimental disease. method" above referred to led to a "practical" classification of skin diseases which obtained very wide currency in the seventeenth century, and can, I venture to suggest, be recommended to the best consideration of the practising therapeutist of the twentieth: 1, Those that mercury can cure; 2, those that sulphur can cure; and 3, those that the devil himself cannot cure. This last type was, of course, universally allowed to be that of most frequent occurrence!

The march of intellect has, since the date of this physical conception and rationalistic therapeusis of cutaneous diseases, made rapid and uninterrupted progress, "upwards and onwards." Chemical "elements" have increased in number to an extent unforeseen in those centuries in which the great central object of scientific pursuit was the agent by whose contact any one of the other (and altered) elements would be instantly transmuted (or rechanged) to the original and unique primitive type from which all had originally sprung. Indeed, they have increased so much in number, and, of recent years, with such rapidity, as to lead to the inevitable meeting of the extremes; the completion of the circular groove (or rut) of "progress," in which all inquisitive descendants of Eve seem condemned to move in their quest of the apple of knowledge. And the original conception of the taste of the "waters of bitterness" must have been impressed on many an intellect in the pilgrimage through the sandy soil of this desert of fact and theory (and experiment, and hypothesis, and discovery, and assertion)-true and false-on ascertaining that the scientific pioneer of the twentieth century is now stranded on the rock of the single "element" from which his ancestors sailed forth upon the boundless ocean of discovery some thousands of years ago! And in the ultimate arrangement of the constituent particles of the same, in the structure of the various items of the universe, he is left to choose between the Stoical continuum of Zeno and his disciples and followers) and the Epicurean finely grained alternation of plenum and inane (vacuum), which had been previously arranged by Moschus and Democritus, and has been so faithfully and skilfully embalmed for posterity in the inspired poetry of Lucretius.

The imperishable and indivisible atom of chemical theory and research may be said to have enjoyed a life career almost exactly conterminous with the existence of the nineteenth century. It came in with the infancy of that epoch, and displayed the significant symptoms of tottering debility with its decline. Few chemical or physical specialists were ever known, during that most vigorous age of scientific prosperity, to hint at the fact that their accepted "atomic theory" represented but an attempt to make the pre-Trojan hypothesis of Moschus to fit in with the ascertained facts of experimental "modernism." And the junior scientist who dared to give articulate utterance to the fact that no logical proof whatever was forthcoming of the existence of either atom or molecule, or could be produced by even the most inspired of contemporary doctrinaires, would, most assuredly, have been branded as a dangerous and irreclaimable heretic! The legal conditions of modern existence effectively forbade, of course, the application of the red hot iron for that purpose; but he would surely have been not the less effectively stamped with the indelible stigma of scientific insubordination, which would have permanently barred him out from a position from which he could conveniently disseminate his amateurish conceptions

among the adolescents of the coming chemical generation. Every intelligent schoolboy, even long before he began to "make up" the text of "the smaller Ganot," knew how to estimate with due scorn the prescientific idea of a large section of our philosophic ancestors, that "Nature abhors a vacuum." He even knew the recognized value of the childish notions of our remote classical predecessors in those fields of thought, who had taught their misguided disciples that the existing matter of the whole universe was arranged in four layers of concentric stratification: Earth, water, air, and fire; with a fifth something ('η πέμπτη οὐσία, quintessentia) everywhere permeating and universally animating the whole. Still more contemptible to the intellectual juvenility of the latter half of the past century was the cosmogony of the first of Greece's "wise men," who taught his contemporaries that all matter was the genetic resultant of the "permutations and combinations" of a single element - that of water (moisture).

He rarely, if ever, knew that the Mosaic chaos (of the Septuagint) represented the same idea; the familiar xãos of Greek philosophy having been derived, as Plutarch points out, from χέω (χέειν, to flow) and remained expressive of the special physical property of fluid movement. How few modernists seem to have grasped the fact of the unity of the original source of the currents of philosophic and inspired thought which travelled so slowly westward along the shores of the Mediterranean, from the seat of their primary genesis in the *Ur* (light, fire, generative heat) of the Chaldees. And probably-or say, if possible-fewer still recognize the identity of the Stoical teaching regarding the winding up of the existing zόσμος by universal diffusion of fire with that adopted by early Christianity, as shown in the text of the prophetic Revelation divinely vouchsafed to St. Peter (II Epist. iii, 12-13):

τής τού θεού ήμερας, εν ήν ούμανος πορουμενοι λυθήδονται και στοχεία καυσύμενα τήκεται. Καινούς δ' ούμανούς και γήν καινην κατά το επάγγελμα αύτου προσδοκώμεν —:

with the nineteenth century conception of Lord Kelvin that restless matter was everywhere settling down-with infinite varieties of velocity-into the (ashen and inanimate) sedimentary stage characterized by the universal attainment of the absolute zero temperature; and with the most recent (and, perhaps, the most ingenious) notion of Gustave le Bon; that all the atoms of our universe are continuously, if in degrees of various slowness, breaking up into the cosmic ether from which they were originally formed; that omnipresent medium which pervades all space-visible and invisible, tangible and intangible—and from which they were created. in the beginning, by the endowment of a special appropriate vortex motion! And so the universal cosmic vortex of Pythagoras shrank in due time into the more localized vortices of Descartes, and has now reached the ultramicroscopic dimensions of the vortical system of the individual atom! Below this dimensional level it can, assuredly, never hope to descend!

Thus our twentieth century philosopher who re-

jects, with scorn unspeakable, the elderly notions of the properties of earth, water, air, and fire, still retains his spasmodic grip of the ether! He (frankly, for once) admits that he cannot work without it. The facts that it is an inheritance of the prehistoric pagan past; that its existence is but based on hypothesis, while entirely beyond the range of logical proof; and that the only statement which can be definitely made in this connection is that the modern conception thereof appears to be explanatory of, and consistent with, most recorded physical facts and observations—not all, unite to attach to our idea of ether a tremulous vitality which appeals all the more effectively to our latent tendencies to chivalrous protection. And the recognition of the origin of all matter from the primitive and universal ether offers another example of the meeting of extremes in the never ending gyration of human opinion. How seldom is the fact recognized, in those "practical" days of fading classical knowledge, when no education is likely to enjoy popular patronage but what promises to yield early results in material cash, that in the grand mythologies of pagan times Jupiter (Zebs, Jis) and Ether (A:07/p) were convertible terms; that the concentrated masses of "fire" were recognized as Apollo (Sun), Diana (Moon), and the "heavenly host" of constellations which represented the semidivinities of heroes and heroines; while fretful Juno ($E\rho\alpha$, which by transposition of a single letter becomes and), with her inexplicable alternations of smiles and tears, and angry frowns and jealous storms, was no other than the atmospheric air; subjacent to, and embraced by, her eternal overlord, Jupiter. Thus:

Tum pater omnipotens fœcundis imbribus Æther Coniugis in gremium lætæ descendit. Vergilius, Georgica, ii, 325.

While a still more significant approximation to the Hebrew cosmogony is represented in the following

A Jove Principium, Musæ: Jovis omnia plena. Vergilius, Bucciica, iii. 60.

The general diffusion of this conception is also testified by the Greek verses of Aratus, the favorite poet of Saul of Tarsus, in the introductory opening of the Phanomena-so dear to "Rome's least mortal mind":

T.z Jos dayerasaba, tar andstat didass some Appretus, asotal de Ilde tadou per apinal. Пада: б алиобтей прини, честь бе наласса. Και κιμένες, παντή δε Διώς γεχώμεθα πάντες To you ras yerns touts which were thus Englished by Mason Good:

"From God we spring-whom men can never trace, Though heard, seen, tasted, felt in every place. The loneliest path, by mortal seldom trod, The crowded city, all is full of God; Oceans, and lakes—for God is all in all— And we are all his offspring.

who also points out that "This is the passage which St. Paul so successfully refers to, and quotes in his animated oration to the Athenians on Mars Hill: 'For in him we live and move and have our being, as certain also of your own poets have said. For see are also his offspring,' Acts, xvii, 28." Thus were the old beliefs gradually prepared for the new revelation. Another of the very remarkable pagan ac-

counts of the powers and functions of omnipotent and omnipresent ether is to be found in the verses of Pacuvius, a poet who was highly appreciated by Cicero and by Horace:

Hoc vide circum, supraque quod complexu continet Terram; id quod nostrei cavum cœlum memorant, Graiei

Quidquid est hoc, omnia animat, format, alit, auget, creat, Sepelit, recipitque in sese omnia; omniumque idem est

Indidemque, eademque, oriuntur de integro; atque eodem

A very remarkable item of pre-Christian testimony, surely, to the presence and properties of the unique elementary source of life, in all its manifestations; above, around, and beneath; animal, vegetable, and mineral! Thus was the universe originally created by ether, out of ether, for ether. And to ether it returns!-according to the very newest of "modern"

Each of the four elements having a particular region alby its motion, either up or down, in a straight line, and where, when it had arrived, it naturally ceased to move. Earth where, when it had arrived, it naturally ceased to move. Earth descended till it arrived at the place of earth; water, till it arrived at that of water; and air, till it arrived at that of air; and there each of them tended to a state of eternal repose and inaction. The spheres consisted of a fifth element which was neither light nor heavy, and whose natural motion made it tend neither to the centre nor from the centre, but revolve around it in a circle. As by this motion they could never change their situation with regard to the centre, they had no place of repose, no place to which they naturally tended more than any other, but revolved round and round forever. This fifth element was subject neither to generation nor corruption nor to altera-tion of any kind; for whatever changes may happen in the heavens, the senses can scarce perceive them, and their appearance is the same in one age as in another. The beauty, too, of the supposed crystalline spheres seemed still more to too, of the supposed crystainle spiners section and more entitle them to this distinction of unchangeable immortality. It was the motion of those spheres which occasioned the mixtures of the elements, and from thence the production of all the forms and species that diversify the world. It was the approach of the sun and of the other world. It was the approach of the sun and of the other planets to the different parts of the earth which, by forcing down the element of fire, occasioned the generation of those forms. It was the recess of those bodies which, by allowing each element to escape to its proper sphere, brought about in an equal time their corruption. It was the period of those great lights of heaven, which measured out to all sublunary things the term of their duration, of their department, and of their decay either in one or a number their growth, and of their decay, either in one or a number of seasons, according as the elements of which they were composed were either imperfectly or accurately blended and mixed with one another. Immortality they could be-stow upon no individual form, because the principles out of which it was formed all tending to disengage themselves and to return to their proper spheres, necessarily at last brought about its dissolution. But, though the individuals were thus perishable, and constantly decaying, every species was immortal, because the subject matter out of which they were made, and the revolution of the heavens, the cause of their successive generations, were always the

The sentences of the foregoing quotation, which explain the origin and significance of the doctrines of astrology and of signature, can hardly, I venture to hope, fail to interest every earnest student of human nature. And so should the following summary of the pagan philosophy of the universe and its ruling Deity

The whole of nature having by their reasonings become equally the object of admiration. was equally apprehended to be animated by a universal deity, to be itself a divinity, and animal; a term which to our ears seems by no means synonymous with the foregoing, whose body was the sensible and solid parts of nature, and whose soul was that

ethereal fire which penetrated and actuated the whole. For of all the four elements out of which all things were composed fire or ether seemed to be that which bore the greatest resemblance to the vital principle which informs both plants and animals, and therefore most likely to be the vital principle which animated the universe. This infinite and unbounded ether, which extends from the centre beyond the remotest circumference of nature, and was endowed with the most consummate reason and in-telligence, or rather was itself the very essence of reason and intelligence, had originally formed the world and had communicated a portion or ray of its own essence to whatever was endowed with life and sensation, which, upon the dissolution of those forms, either immediately or some time after, was again absorbed into that ocean of Deity from whence it had originally been detached. In this system the sun, the moon, the planets, and the fixed stars were each of them also inferior divinities, animated by a detached portion of that ethereal essence which was the detached portion of that ethereal essence which was that soul of the world. In the system of Plato, the intelligence which animated the world was different from that which originally formed it. Neither were those which animated the celestial spheres nor those which informed inferior terrestrial animals regarded as portions of this plastic soul of the world. Upon the dissolution of animals, therefore, their souls were not absorbed in the soul of the world, but had a senarte and eternal existence, which gave birth to had a separate and eternal existence, which gave birth to the notion of transmigration of souls. Neither did it seem unatural that, as the same matter which had composed one animal body might be employed to compose another, the same intelligence which had animated one such being should again animate another. But in the system of the Stoics the intelligence which originally formed, and that which animated the world, were one and the same, all inferior intelligences were detached portions of the great one; and therefore in a longer or in a shorter time were one; and therefore in a longer or in a shorter time were all of them, even the gods themselves who animated the celestial bodies, to be at last resolved into the infinite essence of this almighty Jupiter, who at a destined period should, by a universal conflagration, wrap up all things in that ethereal and fiery nature out of which they had originally been deduced, again to bring forth a new heaven and a new earth, new animals, new men, new deities; all of which would again, at a fated time, be swallowed up in a light conflagration, again to be reproduced, and again to be redestroyed, and so on without end.

The liberal minded and earnestly philosophic student of the opening decade of our twentieth century (who has given some consideration to the antique views which are sketched in the above quotations, and were so formulated by the sages of old in their devoted searchings for wisdom, and unceasing efforts to penetrate, and pluck out the heart of, the mystery of the unknown) cannot fail to be struck by the persistence of the ideas of atom, and molecule, and ether, and intermolecular and interatomic space in the modern science which professes to look upon the Epicurean physics with the same lofty contempt that it does on the Epicurean philosophy. And by the parallelism which may be traced between the cosmic cataclysmal conflagrations of the teaching of the Porch, the universal downward trend of atomic motility to the cosmic abysm of absolute zero of Lord Kelvin and his school-which is also related, though very much less directly, with the everlasting down-raining of atoms taught by Epicurus, and the universal teasing out of cosmic matter into the primordial ether from which it was created, which Le Bon believes to be proved by the conduct of the corpuscular radiations that have been demonstrated within the present decade. Further, also, by the uncanny persistence of that revolutionary movement which animated the star set spheres of the ancient astronomers, and provided the cosmic harmony of Pythagoras, and has at last concentrated itself in the quasi solar system of electronic

(corpuscular) circulation which, we are now assured, constitutes the modern "atom."

That the atom did yeoman service down through the years of the unprecendentedly active and progressive nineteenth century can never for a moment be questioned. Still I will take the liberty of pointing out, in passing, that the argumentative assertion that, as its hypothetical features fitted in-for the most part-so harmoniously with observed facts, and had afforded so fruitful a source of light and guidance in the illumination of the old and the discovery of the "new" knowledge, we were bound to accept the atomic hypothesis as an incontrovertible truth-till some better was laid open to the light of science, affords a specimen of reasoning of a very unhealthy type. It need hardly be pointed out -to the discerning few-that the continued protection of this logically indefensible position would have successfully prevented the penetration of any new scientific light into the previously dark areas of knowledge undiscovered. Yet such has, substantially, been the line of argument adopted by the most prominent of our conservative scientific leaders, even up to present date. But the rampant bull of radiation has burst into our chemicophysical china shop, and ruthlessly "made smithereens" of the cherished atoms for which all its spaces had been so neatly pigeon-holed, and with which they were completely furnished throughout. And here we now are, in the opening decade of the twentieth century, plunged in the mire of the "electron" theory! And almost the only ray of hopeful illumination which has hitherto penetrated this muddy medium has been afforded by the formulation of the view of Le Bon: that all our atoms are being, by degrees, but with a wondrous evolution of explosive energy, resolving themselves-or getting teased outinto the universal ocean of the continuous fluid ether which pervades all cosmic space; whence they all came, and to which they must all return. And now the fact can hardly fail to strike the observer, who knows something of the recorded history of human opinion, that if "scientists" and "teachers" of the recent centuries had been kept informed of the attainments and achievements-theoretical and practical-of their remote predecessors, it would have saved them an incalculable expenditure of time and trouble in the rediscovery of (very rusty) editions of old hypotheses; while it would have preserved an unfortunate (inquiring) public from being periodically deluged by the intellectual emesis of the crudities resulting from the hasty ingestion of characteristically "modern" research and associated ratiocination. Atoms may [come (?) and atoms may] go, but the ether always remains; in all the freshness of its eternal youth, and in all the dignity of its acknowledged omnipotence!

From such preliminary considerations, suggested by the ever inspiring subject of the ubiquitous, and now once more unique, "element," we must hark back when we come to the important discussion of the properties and uses of one of the good old recognized units of elementary matter, in connection with the physiology of the human economy and the therapeusis of the derangements of the same. Man's intimacy with the physical properties of metallic iron, and his consequent utilization of the same for

KNOTT: IRON.

his own practical purposes, are of very ancient date, indeed. They originated in a very primitive stage of the social evolution of the human race; a fact which, in our own generation, is emphatically illustrated by its use among some of the least advanced tribes of Equatorial ("Darkest") Africa. Yet along the pathway of our Western civilization—from the eastern extremity of the Mediterranean, and along the borders of the same—the history of iron does not reach at all so far back into the mists of antiquity as does that of copper, of silver, or of the more rare and coveted gold. I find no evidence that the ferrum of the Romans (καλύψ of the Greeks) was known to the prehistoric inhabitants of those borders. Still its record is quite old enough to elicit respectful consideration. This statement is true not only of its metallurgic history, but of its therapeutic applications. There is no doubt that this metal was extensively employed by the ancient Phœnicians and Egyptians-and their Hebrew slaves; even before the days of Moses. Classical testimony goes to show that it was used by the Greeks at the siege of Troy, not only in the construction of the weapons and machines of war, but in the treatment of wounds as a therapeutic agent. There can be little doubt too, I think, that the original discovery of the loadstone in those Levantine regions, and the unavoidable observation of its weirdly peculiar properties, directed special attention to the qualities of the ores of this metal, and the useful element obtainable therefrom. Regarding the discovery and early (classical) nomenclature of this uncanny mineral, we are told by the learned (and pugnacious) Gideon Harvey, "Dr. of Phys. and Phil." (1663), that:

The loadstone is otherwise called a magnete from the first inventor thereof, Magnes, who garding his heard upon the Mount Ida, felt his slip-shoes, being fastned with Iron pegs, to stick fast to the ground, and his driving staffe, which was pegged at the bottom with an Iron peg, to stick fast likewise, whereat he was much astonisht, but searching narrowly into the cause he found they were a sort of stones that held him.

The Greeks named the stone Sideritis, which Pliny, lib. xxxvi, cap. 16, derives from σίδηρος, iron; and not without a just ground, it having a vertue of attracting Iron to it. Others knew it by the name of Lapis Heraclius, not derived from Hercules, or Heraclius, the supposed Inventor, but from Heraclia, a City of Lydia, where the best were found in great number. The Germans call it ein Seilstein, or a sailstone, because the Mariners sail by it.

And the same up to date natural philosopher (of the days of the Protectorate and of Puritanical ascendancy, of the Restoration and the foundation of the Royal Society) proceeds to further enlightenment of his readers in this connection, thus:

This stone changes its name by the places where it is usually found.

1. The Magnesium Loadstone is engendred about the City Magnesia.

An Alexandrian Loadstone is taken up about Alexandria.

3. It is found in Echio, in Bœotia.
4. The worst of them, being spungy and loose, are found near the Cape Verlychi in Natolia.
5. The best are those of Æthiopia, being the blewer,

heavier, and drawing Iron stronger.

And, as might be expected in the discussion of a natural product furnished with properties so strangely and unaccountably unique as those of the native loadstone, some illustrative magnetic mythol-

ogy is thrown in for the reader's further enlightenment:

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Tasnierius supposing them to grow in the bottom of the Æthiopian Sea, relates an odd story, that some Ships crossing the Æthiopian Sea, and bearing near to the Promontories should have been drawn to the bottom of the Sea by some Loadstones taking hold of their Iron Pins.

(Can we be surprised that the wise Egyptians of old, whose territory was limited in one direction by that body of water, always held the practice of nav-

igation in abhorrence?)

Dr. Harvey, who had been "Physitian to his Majesties Army in Flanders," would appear to have imported the spirit of the physics of the "Father of Modern Philosophy" from the vicinity of the birthplace of the latter. For his theory of the load-stone has, I should say, been imbibed from that of Descartes-with a classical flavoring derived from the metrical Epicurianism of Lucretius:

The loadstone is (as it were) imperfect iron, but not so near resembling it as iron resembles steel. It is between a stone and a metal, and therefore in a manner is not per-fectly concocted. Its material principle is a loose earth rarefied by dense fire and incrassated air, being unequally mixt and tempered. Its forma ultima is sometimes a compleat metal like to iron, other times like to a hard reddish blew stone. Both these have been found by many, not knowing what to make of them, which in all probability were concocted loadstones. That they were loadstones is were concorred foatstones. That they were to adsorbines we evidenced by the remaining vertues, although but very weak of attracting iron. Its body being throughout porous (that is loose and not very solid,) its intrinsick parts must of necessity partake of a certain figure as all porous bodies do, although in some more, in others less. Iron it self (as also a lyzzard stone) consists of intrinsick parts cuspidally or pyramidally formed, that is with streaks transcurring as it were into pyramidal points. . . . The cause you as it were into pyramidal points. as it were into pyramidal points. The clause you know is from the manner of exhalation and proruption of the ayry and fiery parts that have left it, and minutely do still leave it. Between these triangular pointings we do imagine insensible cavities or pores, through which those emanations do continually pass, and by whose figure they are directed to their passages outward; those I say are continuous and very potent.

Manifold and multiplex have been the modifications of the atomic hypothesis of the structure of matter since the above paragraph was printed-in the infantile days of the Royal Society. And we could afford to look back (and down) on Gideon Harvey's hypothesis with a more lofty (or pityingly philanthropic) contempt than we do, had it not been for the fact that rust, the most familiar of all oxides (or comopunds) of iron, has not even yet had the mystery of its genesis and growth satisfactorily unveiled by the most curious of our twentieth century scientists! However various readers may contemplate such facts of the history of the progress of human opinion, I think it my duty to note that our philosophic Harvey, which his conception appears distinctly suggestive of Cartesian inspiration, is most vigorous in his efforts to tear to pieces the magnetic theories of the great philosopher of the Netherlands. On the other hand, his silence regarding the "Enquiries" of his own countryman, Sir Thomas Browne, who had exposed a good few of the "vulgar errours" in connection with this same subject, would seem to be almost correspondingly significant. Indeed, he reduces the theoretical views and opinions of the father of modern philosophy on this head to the position of the absurdest of most absurd absurdities! And, as both the Cartesian and Harveian hypotheses are based upon emanations (or radiations), the expressed criticisms of the emphatic Gideon Harvey should perhaps be considered wor thy of some passing attention in a generation which is just now "muddling through" the cosmopolitan throes of a radioactive revolution. And thus we find them written—introduced with a lecturer's bow, of which the modest dignity will be appreciated by the philosophic reader:

let me take the leasure to balance what Cartesius sets down upon this matter. After the enumeration of the properties of the magnete, he observes that there are striated particles, that are sent down from the south part of heaven, and bowed quite into another kind of shape, different from those that rain down from the north; whence it is that the one cannot enter into those channels and passages which the other can. He further observes, that the south particles do pass directly from their seat through the midst of the earth, and when passed return back again with the air that is cast about the earth, because the passages through which they pass are such that they cannot return back again through the same. The like is to be understood of those particles that pass through the earth from the north. In the mean time as many new parts as there do alwaies come on from the south and north part of the heavens, so many there do return or fall back through the east and west parts of the heavens, or else are dis-persed in their journey, and lose their figures, not in passing the middle region of the earth, because there their passages are made fit for them, through which they flow very swiftly without any hindrance, but in returning through the air, water, and other bodies of the outward earth, wherein they find no such passages, they are moved with much more difficulty, and do constantly meet with particles of the second and third element, by which they laboring to expel them are sometimes diminisht.

Now in case these striated particles hit against the loadstone lying in its natural position, then they find a clear passage to go through, because (he saith) a loadstone is pervious in the same manner as the earth is, and therefore

calleth the earth also a magnete.

The poles of the loadstone he states to be the middle points of its passage on both ends. That which is the middle point between the passages that are disposed to receive the particles descending from the north part of the heavens, is the north pole, and its opposite is the south

ole.

But when the striated particles that come from the poles of the earth hit against the passages of the magnete lying athwart, then they do by that force, which they have of persevering in their motion according to right lines, impell it untill they have reduced it to its natural position, and so they effect that its south pole (provided it be not detained by any external force), turns towards the north pole of the earth; Because those particles that tend from the north pole of the earth through the air to the south, came first from the south part of the heavens through the midst of the earth, and the others that return to the north, came from the north.

Having given the reader this preliminary sketch of the position occupied by the scientist whom he proposes to discredit, he proceeds to indicate more definitely the vulnerable points of the same, and to utilize them in the process of disruption of his defences. And with this object in view the advance is made along the following lines of attack:

Here you have the chief of the forementioned Author's fansic upon the demonstration of the properties of the Loadstone. In thirst place, how can any one probably conceive that there are striated parts sent down from heaven; for consider the immense distance, (which he agrees to) the interposition of thick clouds filled up with dense exhalations, and the continuous depth of the air. Is not the air potent enough to dissolve all bodies contained within its bowels, doth it not dissolve the thick frozen clouds into snow, hail, and thick rain? Doth it not dissolve the coagulated exhalations of the earth, that are so tenacious? Much more those striated parts, which he himself confesse are dissipated at their return through the force of the am-

bient air, and that in so short a time and passage. Why should these striated particles descend more from the polar regions of the heavens, than from the east and west parts? Are not the poles of the heavens immovable, of the least efficacy? Are not those parts of the firmament alwaies discerned to be clearest, and most freed from obscure bodies? Is not the north and south air so much condensed and congealed, that it is impossible for it to give passage to such subtil bodies as the pores of the magnet do require? I say impossible to subtil bodies, because they need force to press through; and so much the more, because they are discontinuated. But had our author asserted them to rain down from the east and west parts, where the air is thinnest and less nebulous, and where the celestial bodies exercise their greatest influences, it would have deserved a freer reception; but then his chimera would have been rendred monstrous, and unfit to explain the reasons of the magnetical vertues.

The south streaks (saith he) are intorted in a form different from those of the north; whence had he that news? What? Because one pole of the magnete inclineth to the north, and the other to the south, therefore these streaks must needs be sent down from the north and south. this a mathematical demonstration to conclude the cause (and a false one too) by the effect? A notion far inferior to those of the wanderers, and that which adds to this absurdity is to imagine that these streaks should retain their shape notwithstanding their continual and long grinding against the air in their descent, and not change their shape a hundred times over. Doth not a cloud, which must be supposed to be of a firmer consistency than those particles, make choice of a new shape every moment? how much the more these small tender bodies? And that which is most absurd is, to propose that such a vast number or troops of these particles should arrive hither into our north hemisphere from the south so obliquely without changing their shape; further he supposeth them to come heaving down directly through the earth, and through the magnete, which is impossible, unless it be in a right sphære; whereas we here are situated in a very oblique sphere, and consequently the magnete is also obliquely seated here, wherefore it is requisite that those streakes should alwaies beat against the magnete in these regions obliquely, and change their shape very oft. But how monstrous it is to maintain these particles to flie through the diameter of the earth and water, being bodies most

So sinks the spirit of scientific thought, which had animated the "father of modern philosophy," and to which people less well informed than Dr. Gideon Harvey had given so prominent a niche in the temple of intellectual fame (!). And to prevent the remotest probability of resuscitation, he does not neglect to administer a coup de grace (or two):

dense, close & thick in many places shutting out fire and

air, being substances by a million of degrees exceeding Des-Cartes in subtility; or how is it possible they should pass the most icy and deep thick body of water? well, and

yet through all this difficulty they should retain their shape;

this is an absurdum absurdissimorum absurdissimum.

The earth is pervious in such a manner as to fit the shape of the collestial streakes: and were it so, it certainly moving about the sun according to his assent must change its passages and so thwart the entrance of the coelestial subtilities.

As for the passages of the magnete, we grant them to be numerously seminated through its body, but their shape is quite different. My time doth even weary me in making disquisition upon so dishering and monstrous a chimera; I should easier give credit to Rabelais his Pantagruel, or the Fables of Æsope, than to so obtuse a phantasm.

The structural theory formulated by our critical Harvey as a basis on which to ground his own explanation of the physical peculiarities of the load-stone appears to me to occupy approximately the position of a halfway house between the supersubtle atomic lucubrations of Lucretius and the amazing complexities of the *electron*—and other contemporary—theories which have been arrayed for the

purpose of lighting up the hazy domain of the infancy of radioactivity. It is as follows:

perament through streams or small mixtures of the elements gradually deserting the decocting bodies, and taking their egress or fuming through their pores. These pores tend most from the transcurrent axis towards the north. That its pores tend most towards the north is evident by That its poles tend most towards the north is vertein by its intrinsick parts within (as you may see when it is cut through) running variously intorted towards the north in streaks; these streaks are distinguisht from one another through interjacent porosities, otherwise they would be continuously one. That the loadstone emits fumes, is testified from its looseness and inequality of mixture: For all parts, (as I have shewed before,) that are unequally mixt, suffer a discontinuation of their mixture, because that one element being predominant, and having its force united through the said unequal mixture, must needs make way for its effumation, and afterwards break through by egressing fumes; but such is the loadstone. Ergo. 2. That these fumes or effluvia do effumate through their northerly pores, the experiment it self doth confirm to us; For we see that they attract steel most at the north side; besides, they usually rub the cross wires of sea compasses at the north side, as being most effumous there. Thus much for the $\delta r t$, and part of the $\delta t \delta r t$. Now for the manner of its attraction, and here it is disputed whether the loadstone attracts iron, or iron the loadstone. Hereunto I answer, that neither the loadstone doth properly attract iron, or iron it: However since iron is moved toward the loadstone (but accidentally) by means of his effluvia or steames, therefore the loadstone is said to draw iron to it. Iron doth (improperly) move it self to the loadstone, being incited to the same motion through the steames of the loadstone entering through its pores into its substance. The streams of the loadstone are through their particular form and external shape or figure fitted to enter into the pores of iron, which are in like manner fitted to receive the streams of the loadstone; they being admitted do reservate the substance of iron, or through their specifick penetrability do free the volatil parts of that iron from the fixt ones, whence they do immediately through their fiery principle dilate and diffuse themselves towards that part of the circumference, where they feel the continual effumations of the loadstone yet more to unite them, which reeking out, and being further diducted by a continuation of succeding parts, do draw the course parts along with it, as being still continually united to them. Or plainer, the said fumes of the loadstone having entered the pores of iron do immediately loosen the spirits of the iron, which being dilated and united to the fumes of the loadstone must needs cover a greater place, the want of which causeth them both to spout out at those holes, which are most patent; which must necessarily be those, through which the magnetical fumes entered. This sudden spouting out must cause an attraction of the iron, because the extrinsick air doth suddenly enter its pores on the opposite side, for to recover a place within the Iron which it had lost without by being driven back out of its place by the prorupting fumes: This sudden irruption of the air on the opposite side drives the iron forwards to that place whence it was first repelled.

This you will the better understand if you compare it with our discourse set down in the chapter of Local Mo-

tion, and of a Vacuum.

These steams of the iron do effumate through all the pores, where the vertue of the loadstone hath touched it, especially at the centre of opposition to the stone, whence they breaking out in great quantity, do draw the body of iron directly towards the loadstone: But if the objected Iron be defended by being besmeared with Oil or any other greasie substance, or by being dipt into water, it puts by and obtuses the fumes of loadstone. That the loadstone doth effuse fumes from it, is further made known to us,

1. Through its inequality of mixture and looseness of

substance, as I hinted before.

2. Either it must act, that is, attract at a distance, or else operate through streams; it cannot act at a distance, that being only proper to supernatural agents, and denied to all natural ones; ergo the last.

3. If you burn it it will cast a visible blew sulphureous

smoky flame

4. It is not the iron doth primarily effuse steams towards

the loadstone, because it is more compact, and less exhalable. Hence Scaliger might now have resolved his doubt, whether the loadstone drew iron, or iron it. Why these fumes do exhale most towards the north, we have told you al-

Do not let it seem strange to you, that the emanations of this stone should reserate the mixture and temperament of iron; it being common to many other bodies, although authors are not pleased to take notice of it. The fumes of mercury do open the body of gold. The heat of the sun opens the body of water, and attracts Vapours thence. Amber through its emissives attracts dust, paper, &c. But of these elsewhere.

Why the stone moves steel variously according to its diverse position happens through the variety and obliquity directing its steames, and variously withal entering the

pores of the objected steel.

It must be admitted, I think, by all unprejudiced and inquiring readers, that this theory, while obvi-ously straining to be "all musical in its immensities," and inspiring in the supernatural insight of its intellectual (as well as physical) revelations, has succeeded in becoming almost as confusing in its complexities as any twentieth century theory of the structure of matter which has been produced since the invention of the Crookes's radiometer, and the development of the first Röntgen ray photograph! -and that is putting it as strongly, perhaps, as the scientific facts and the English language can conveniently permit. Those who have studied the cosmic theory elucidated in the (almost divinely inspired) metres of Lucretius will probably survey with the slenderest estimation the progress which had been made in the evolution of the atomic hypothesis from the days of the pre-Christian poetic apostle of Epicurus, down to those of the Flemish "Father of modern philosophy," and the English exponents of science in the years of the infancy and childhood of the Royal Society. And some of us cannot help wondering to ourselves, sometimes, what would Moschus and Lucretius, and Descartes and Sir Thomas Browne, M. D., and Gideon Harvey, M. D., and-let us, with special significance. add—Sir Isaac Newton, think of the present ultrachaotic condition of our shipwrecked and shattered atom; to say nothing of the hypothetical stability of our theory of the propagation of light (undulatory or corpuscular?). Whatever may be the visionary reply to this dreamy interrogative, it is of some interest to note that Lucretius, as he was evidently unable to avoid taking notice of the mysterious mineral, does not fail to apply the atomic system of his great master to the explanation of its unique phenomena, and in a way which offers something more than a merely plausible suggestion that Descartes drank therefrom the nectar of his own "magnetic" inspiration. Our metrical pagan philosopher, after the prefatory introduction of this subject to the notice of his reader:

> Quod super est, agere incipiam quo fœdere fiat Naturæ, lapis hicc' ut ferrum ducere possit, Quem Magneta vocant, patrio de nomine Graiei, Magnetum quia sit patriis in finibus ortis,

proceeds to give a luminous panoramic sketch of the facts and arguments derivable from the other aspects and domains of nature which appear specially to support his system, or to be most rationally explicable thereby; and then goes on to concentrate all the rays of the mental vision thus called up to the mind's eye of the inquirer:

Quapropter, bene ubi hæc, confirmata atque locata, Omma constiterint, nobis præposta, parata; Quod superest, facile hine ratio reddetur, et omnis Caussa patefiet, quæ ferri perliceat vim.

Principio, fluere e lapide hoc permulta necesse est Semina, sive æstum, qui discutit aera plagis, Inter qui lapidem ferrumque locatus. Hoc ubi inaniter spatium, multusque vacefit In medio locus; ex templo primordia ferri In vanum prolabsa cadunt conjuncta, fit utque Annulus ipse sequatur, eatque ita corpore toto. Nec res ulla magis, primoribus ex elementis Indupedita suis, arte connexa cohæret, Quam validi ferri naturæ frigidus horror Quo minus est mirum, quod dicitur; ex elementis Corpora si nequeunt, de ferro plura coorta, In vacuum ferri, quin annulus ipse sequatur Quod facit; et sequitur, donec pervenit ad ipsum Jam lapidem, cæcisque in eo conpagibus hæsit. Hoc fit idem cunctas in parteis; unde vacefit Quomque locus, sive ex transvorso, sive superne, Corpora continuo in vacuum vicina feruntur Quippe agitantur enim plagis aliunde, nec ipsa Sponte sua sursum possunt consurgere in auras.

Huc adcedit item, qua re queat id magis esse: Quod simul a fronte est annelli rarior aer Factus, manitusque locus magis, ac vacuatus; Continuo fit, utei, qui post est quomque locatus Aer, a tergo quasi provehat, atque propellat. Semper emin circum positus res verberat Sed tali fit utei propellat tempore ferrum, Parte quod ex una spatium vacat, et capit in se. Hic tibi, quem memoro, per crebra foramina ferri Parvas ad parteis subtiliter insinuatus Trudit, et inpellit: quasi naves velaque ventis.

Hæc quoque res adjumento, motuque, juvatur. Denique, res omnes debent in corpore habere Aera, quandoquidem raro sun corpore, et aer Omnibus est rebus circumdatus adpositusque. Hicc' igitur, penitus qui in ferro est abditus, aer Solicito motu semper jactatur, eoque Verberat annellum, dubio procul; et ciet intus Scilicet: atque eodem fertur, quo præcipitavit

Jam semel, et vacuam partem in conamina sumpsit. Fit quoque, ut a lapide hoc ferri natura recedat Interdum: fugere, atque sequi, consueta vicissim. Exsultare etiam Samothracia ferrea vidi;

Ac ramenta simul ferri furere intus ahenis In scaphiis, lapis hic Magnes quom subditus esset: Usque adeo fugere a saxo gestire videtur Aer interposito; discordia tanta creatur Propterea, quia nimirum prius æstus ubi æris Præcipit, ferrique vias possedit apertas; Posterior lapidis venit æstus, et omnia plena Invenit in ferro; neque habet qua tranet, ut ante: Cogitur obfensare igitur, pulsareque fluctu Ferrea texta suo: quo pacto respuit ab se, A que per æs agitat, sine eo quod sæpe resorbet.

Illud in iis rebus mirari mitte, quod æstus Non valet e lapide hoc alias inpellere item res. Pondere enim fretæ partim stant; quod genus, aurum; Ac partim, raro quia sunt cum corpore, ut æstus Pervolet intactus, nequeunt inpellier usquam: Lignea materies in quo genere esse videtur. Inter utrasque igitur ferri natura locata, Æris ubi adcepit quædam corpuscula, tum fit, Inpellant ut eam Magnesia flumina saxi.

The skilled student will not fail to perceive at a glance that the intellectual fissure which distinguishes the magnetic theory of our pre-Christian philosophical poet from that of the "father of modern philosophy" is one which can be crossed without the exercise of long jumping powers. The cousin germanship of their physical conceptions, surely, is very readily recognizable. The view of Descartes was criticised (unfavorably, of course) by Gideon Harvey, M. D., his English junior contemporary; and the emphatic and self confident version of the latter will not fail to throw collateral illumination on the text of the metric apostle of Epicurianism, as well as on the validity of the rival claim of the "modern" Netherlands philosopher to the afflatus of atomic inspiration. Harvey wrote as follows:

The poles of the loadstone are directly coincident with those of the air. You see its poles are primarily neither perpendicular to those of the heavens or of the earth: Ergo its poles do appropriate a particular situation. But before I prove their seat it will not be improper to prefer the probation of the ori of their poles. The emanations of the loadstone move circularly; ergo they must have real poles or immovable points, for a body is uncapable of a circular motion in all its parts. A real axis is no less necessary; It being impossible to conceive two extream immoveable points in a globous body without being fastned or continuated to other fixt points, (which must likewise remain void of the same circular motion) and so on from one extream point to the opposite extream point. That the steames of the said stone affect a circular motion is evident, in that the continuous effuvia of all bodies convert themselves into a like motion. Doth not the thick smoak of coales, of gunpowder, of boyling water, in fine of all things in the world turn themselves round in the open air? What is it you can cast up into the air but it will incline to a circular motion? Do not those little atoms that are seen by us in the rayes of the shining sun (the same which some author is pleased to term light it self, probably be-cause the sun through its reflection and refraction upon them engrosses its light, so as to render them, to be light glistering bodies to the eye,) make choice of a turning and winding motion? Which if so, what reason is there to move us to detract the said motion from the continuous steames of the Heraclian stone? Authors I remember, as Gilbert, Cabeus, Kircher, and others are accustomed to pronounce the loadstone to contain a collection of all the proporties of the earth in her, and reciprocally the earth to partake of the qualifications of the loadstone, but without reason: Nevertheless I may justly set down that the loadstone is enricht with all the dignities and vertues of fire and air; for as fire and air attract, move circularly, are diffused to the periphery, even so doth this stone. Here we may equally imagine poles, axis, polar, circles, æquator, meridian, horizon, a common and proper motion, &c.

These well defined conceptions of the author receive further demonstrative illustration with the aid of an elaborate diagram, in which those gyratory motions are clearly depicted. And the twentieth century student is forcibly reminded of the persistence of the idea of circular atomic movement in this connection, from the era of the original Academy down to that of the invention of the circum-molecular electromagnetic currents of Ampère! Also of the coexistent tendency to the culture of the megacosm and microcosm: in the philosophical conceptions of the zόσμος and μιχροχόσμος of the "divine" founder of the academy; of the earth and loadstone as the cosmic great and little magnets, respectively; and of our twentieth century universe, and its individual electronified atom, as the respective "imperial" and "miniature" "editions" of our intermediate solar system!

Harvey's version of the curious prophetic anticipation of the nineteenth century telegraph is thus mentioned towards the close of his chapter "Of the loadstone":

There yet remains a word or two touching the fabulous property of this stone, which you have described, by Famianus de Strada, Libavius, and others, viz., that two load stones although at a great distance, do so sympathize with one another, that they move at one another's passive impulsion, and that towards the same place; as, for two friends residing in different countries, and intending to sig nife their meaning or desires to each other, they are only to make use of two steel needles, of an equal size, & to rub them both on the same side of the magnete, and afterwards to place them in a compass box, and so turning either of the needles to any point of the compass, the other is thought to obey to the same motion, whereby they come to know one another's meaning, as having mutually at their last meeting agreed to impose a certain signification upon each point of the said compass. Hence they deduce a magnetical (or like to it) sympathy in curing of wounds, a sympathy in the affinity of bloud, a sympathy between the guts and their excrements, between superlunary and sublunary bodies, between men and men, men and beasts, men and plants, beasts and beasts, sheasts and plants, some natural bodies and other: So that whereas formerly philosophers used to excuse their ignortice by occult qualities, now having worn them out they accur to magnetical sympathies. There is not a surgeon or apothecary so ignorant, but he will as cunningly find out a cause whereby to explain the most abstruse effect of Nature, and instantly tell you such or such an effect happens through a magnetical sympathy, as the most learned Mr. Doctor. But is this the great advancement of learning and philosophy which our age doth so much boast of? Is it not rather a grand piece of impudence to propose such absurdities, and much more to give credit to them?

His famous contemporary, Sir Thomas Browne, was less opinionative—and conspicuously more charitable—in his comment on the current magnetical hypothesis, and the apostles and disciples of such doctrines:

Now whether these effluviums do flye by streated atomes and winding particles as Renatus des Cartes conceaveth, or glide by streames attracted from either pole and hemispheare of the earth unto the æquator, as Sir Kenelme Digby excellently declareth, it takes not away this vertue of the earth, but more distinctly sets downe the gests and progresse thereof, and are conceits of eminent use to salve magneticall phenomena's. And as in astronomy those hypotheses though never so strange are best esteemed which best do salve apparencies, so surely in philosophy those principles (though seeming monstrous) may with advantage be embraced which best confirme experiment, and affect the confirmation of the confirmati ford the readiest reason of observation. And truly the doctrine of effluxions, their penetrating natures, their invisible paths, and insuspected effects, are very considerable; for besides this magneticall one of the earth, severall effusions there may be from divers other bodies, which invisibly act their parts at any time, and perhaps through any medium, a part of philosophy but yet in discovery, and will I feare prove the last leafe to be turned over in the booke

(This last sentence is, I venture to suggest, one specially worthy of the attention of the present philosophical student and of the future candid historian of the genesis and evolution of our twentieth century doctrine of radioactivity!)

The very critical, and somewhat lengthy, discussion of the "magneticall vigour of the earth," by the earnest and philosophic author of the *Religio Medici*, shows very clearly that the ventilation of "Biot's hypothesis" was not quite new to the scientific atmosphere—although the fact may have long been forgotten, or deliberately ignored, by the superficially scientific majority.

For these effluxions penetrate all bodyes, and like the species of visible objects are ever ready in the medium, and lay hold on all bodyes proportionate or capable of their action; those bodyes likewise being of a congenerous nature doe readily receive the impressors of their motor; and if not fettered by their gravity, conforme themselves to situations, wherein they best unite unto their Animator.

And his examination of the phenomena of "inclination or declination of the loadstone," and of the "variation" of the same, although occasionally deficient in precision of nomenclature, and not illuminated with a sufficient number of experimental facts—as known to the student of the present day, shows clearly that rapid and well defined progress had been made in the domain of magnetic science during the forty-six years which had intervened between (its original foundation by) the publication

of Gilbert's *De Magnete* (in 1600) and that of Browne's *Pseudodoxia* (in 1646). The writer introduces an interesting speculation regarding the latter property of the magnet, and the (possible) influence which (a due foreknowledge of) the same might have exercised in maritime exploration, which, I venture to hope, will be found of special interest to American readers even in the twentieth century.

The variation of the compasse is an arch of the horizon intercepted between the true and magneticall meridian, Now the cause of this variation may be the inequalitie of the earth, variously disposed, and differently intermixed with the sea: withall the different disposure of its magneticall vigor For whereas on this side of the meridian, or the Isles of Azores, where the first meridian is placed, the needle varieth eastward, it may bee occasioned by that vast tract of earth, that is, Europe, Asia, and Africa, seated toward the east, and disposing the needle that way: For arriving at some part of the Azores, or Islands of Saint Michaels, which have a middle situation betweene those continents, and that vast and almost answerable tract of America, it seemeth equally distracted by both, and diverting unto neither, doth parallel and place it self upon the true meridian. But sayling farther it veers its lilly to the west, and regardeth that quarter wherein it is nearer or greater; and in the same latitude as it approacheth the shoare augmenteth its varialatitude as it approached the shoate augmentation and therefore as some observe, if Columbus or whosoever first discovered America, had apprehended the cause of this variation, having passed more than halfe the way, he might have been confirmed in the discovery, and assuredly foretold there lay a vast and mighty continent toward the west. The reason I confesse, and inference is good, but the instance perhaps not so. For Columbus knew not the variation of the compass, whereof Sebastian Cabot first took notice, who after made discovery in the northern part of that continent. And it happened indeed that part of America was first discovered, which was on this side farthest distant, that is Jamaica, Cuba, and the Isles in the Bay of Mexico. And from this variation do some new discoveries deduce a probability in the attempts of the northerne passage toward the Indies. . . But if in certain creekes and valleys the needle prove irregular, and vary beyond expectance, it may be imputed unto some vigorous part of the earth, or magneticall eminence not far distant. And this was the invention of Dr. Gilbert not many yeeres past, a physition in London. And theregood, but the instance perhaps not so. For Columbus knew not many yeeres past, a physition in London. fore although some assume the invention of its direction, and others have had the glory of the Carde, yet in the experiments, grounds and causes thereof, England produced the father philosopher, and discovered more in it, then Columbus or Americus did ever by it.

And we feel sure that scientists of every country, who regard the acquisition of true knowledge as a nobler pursuit than that of the culture of national prejudice, will allow that England has good reason to be proud of her medical sons: William Gilbert, the "father of the science of magnetism," and Thomas Browne, the faithful exponent of philosophic Christianity, and enthusiastic iconoclast of the time honored "errours" of the "learned vulgar." And I will just take the opportunity of adding, in way of running comment, that a deplorably instructive lesson in the modes of estimate of human reputation may be derived from the comparison of the twentieth century fame of those two members of our profession, on the standard critical scale of the "learned vulgar" of the present day, with that of the legal "Father of experimental philosophy," Francis Bacon, who discoursed so prophetically, and advised so judiciously, regarding the culture of those sciences of which he knew nothing—and very often less; while setting himself with all his power to overturn the authority and methods of Aristotle, the vast bulk of whose attainments he had never

mastered; and actually sneering—in the clumsiest fashion, too—at the enthusiastic application of the now so called "Baconian method" to the investigation of the properties of the loadstone, by which his contemporary (medical) neighbor had, in the metaphoric sarcasm of the great Lord Chancellor, "almost himself become a magnet." Such is the value of the British national standard measure, as an indicator of the value of relative reputations, in the estimation of true scientific attainment and of genuine philosophic merit!

(To be continued.)

REPORT OF SIXTEEN CASES OF ACHYLIA GASTRICA.*

By A. E. Woehnert, M. D., Buffalo.

Achylia gastrica is a condition of the stomach in which no gastric juice is secreted. Some of these cases are undoubtedly due to disturbed innervation and should be classed as neuroses. Others are plainly due to organic changes which have taken place in the gastric mucosa, and, through long continued chronic inflammation, a destruction of the glands of the stomach has been brought about. Achylia gastrica is an ætiological factor in pernicious anæmia and forms a part of the symptom complex of that disease. Achylia is also found in gastric cancer, and cancer should be excluded before a diagnosis of achylia is made. Many of these cases give a history of long continued digestive trouble; in some no such history is obtained, and the condition of the stomach is discovered accidentally in a routine examination. It is surprising how well these patients get along without their gastric diges-They do not lose very markedly in weight, the intestine is able for a time at least to carry on satisfactorily the entire work of digestion. These patients do well as long as the gastric motility is properly maintained. When the food taken is per-sistently improper in character, the intestine may gradually give out, and we have a characteristic diarrhœal condition induced.

The diagnosis of achylia depends upon the results of a chemical and microscopical examination of the stomach contents. The methods of examination are as follows: The patient is instructed to take an Ewald breakfast consisting of a roll and a glass of water, or bread and butter and a glass of water. The stomach is examined one hour after this test meal. One is struck by the difficulty of obtaining a reflow in conditions of achylia. In a majority of cases it is almost impossible to obtain undiluted stomach contents. The contents when obtained are noticeably pale and watery; the food is practically in the state in which it was taken, and appears simply water logged. Where a test dinner of Hamburger steak and bread and water is given, the meat shows no change by digestion.

The chemical analysis of the filtrate yields an acidity of from two to six degrees, and test for free hydrochloric acid shows that it is absent. Tests for combined chlorides are also negative. The biuret

reaction is absent, and a test for starch digestion shows also failure here. The tests for rennin and pepsin and their zymogens are also negative. Occasionally we may find a trace of lactic acid present, but it is not constant and usually not large in amount. The microscopical examination of the contents shows undigested meat fibres, the strize can be plainly seen showing no attempt at meat digestion. A few yeast cells may be seen, no Oppler-Boas bacilli or sarcinæ are found; some mucus may be present.

Examination of the stools may be important, particularly in those cases where there is a lienteric diarrhea. They are yeasty and offensive and contain mucus. Microscopically, we find meat fibre in large quantity totally unchanged; starch granules may also be found. In those cases where the bowel irritation has been of long standing, gross, un-

changed particles of food may be found.

During the last few years out of several hundred cases of stomach trouble, some sixteen cases of achylia gastrica have fallen under my observation. Of these patients eleven were female and five of them were male sex. They ranged in age from twenty-eight years of age to sixty years. The average age was forty-two years. Some of these patients did not complain of gastric disturbance. Case V sought relief for persistent headache; one patient had attacks of shortness of breath, and several of them complained of general weakness and palpitation. A very characteristic symptom was a diarrhœa, which is seen in many of these cases. Von Tabara (Münchener medizinische Wochenschrift, 1904) observed typical diarrhœa in twenty per cent. of his cases. It occurred periodically in three and persistently in one of these cases, or twenty-five per cent. Pain simulating the pain of hyperchlorhydria was a feature in two of my cases. Einhorn (New York Medical Journal) reports six cases with pain. Nausea and vomiting were distressing features in two of these cases, and were only relieved by porsistent lavage. Most of my patients complained of discomfort and fermentation after food was taken. The gas was so large in amount in several cases as to produce shortness of breath and palpitation. As stated before, loss of weight was not a striking feature; on the contrary, the majority of these patients appeared well nourished. Constipation was the feature in several, and a mild colitis was occasionally found in conjunction with gastric trouble. Having in mind the fact that achylia is found in many cases of pernicious anæmia, the blood was carefully examined as to its quality and quantity. Anæmia was found in five of these cases and was of a secondary type. The hæmoglobin ranged from thirty-five per cent in the severest to eighty per cent. in the mildest case. Aside from the moderate reduction in hæmoglobin, there was nothing noteworthy in the stained specimens. The red cells ranged from 3,200,000 in the severest to a trifle below the normal in the milder cases. The white cells were unchanged. The urinary examination revealed nothing noteworthy except an excessive amount of indican.

Achylia gastrica is a disease which is slow and insidigus in its progress, and the ætiology would be of necessity somewhat obscured. Bad teeth, with resulting insufficient mastication, throwing the mechanical part of digestion on the stomach, is a factor

^{&#}x27;Prop before the Lighth District Bronch of the Medical Society 61 to the of Society Vick, Battivia, September 23, 1968

of some importance. I have many times removed large pieces of meat which had been bolted without apparently any mastication. As these cases were cases of subacidity and were tending toward achylia, it seems to me reasonable to consider this as an æti-

ological factor.

That many of these cases belong to the neuroses has been stated, and causes leading to nerve exhaustion must be considered as ætiological. Eyestrain, worry, overwork, lack of rest and sleep are among such causes. One of my patients had an exophthalmic goitre which affected her nervous system. Those cases that are due to atrophic changes have as ætiological factors all causes of a chronic sclerosing gastritis, such as alcohol, syphilis, tea drinking, etc. Leo (Münchener medizinische Wochenschrift, 1906) declares that there is no evidence that achylia occurs without some anatomical changes in the stomach. There is no way by which the functional case can be distinguished from the organic except by clinical observation of the course of the case. Occasionally fragments of mucosa are found in the wash water, and histological examination of these fragments often give some hint as to the condition of the gastric mucosa. Where the fragment shows interstitial and atrophic changes it would be fair to assume that we had to deal with a case of achylia due to organic changes.

The physical examination of these cases was of value only in a general way. The anaemic patients, five in number, had generally undeveloped musculature. The stomach was low in some, and in several well marked clapotage was elicited. Those presenting diarrhœa had more or less gurgling and unrest in stomach and bowels. The majority of my patients presented nothing unusual in a physical way which would point to a gastric anacidity.

Achylia gastrica, occurring as it does in middle life, must be distinguished from cancer. The chemistry of the two conditions is very similar. In cancer we have, in conjunction with the physical signs of a tumor, a tendency to food stagnation. Lactic acid is present persistently in considerable amount. We have also the cachexia and rapid loss of weight in cancer. In achylia, as we have seen, the majority of patients are well nourished. Lactic acid is present inconstantly and only in small amount, and there is no tendency to food stagnation.

When the condition is functional, the prognosis is good for a return to normal. It may be and usually comprises a considerable period, a year or more, before acid and ferments make their appearance. In three of my cases the stomach secreted gastric juice inside of a year's time. The other thirteen cases apparently belong to a group caused by organic changes, and although some of them have been under more or less irregular treatment for years, I have failed to find any suggestion of the return of acid or ferments. As long as the patients select their diet with care, they go about their business apparently as well as anybody, and are able to lead a fairly active life. A certain proportion have exacerbations from time to time and need to be kept under more or less observation.

The treatment resolves itself into measures that will improve the local condition of the stomach and if possible restore the secretion of gastric juice.

Diet is of the greatest importance. These patients lack the dissolving action of the gastric juice, so that their intestinal digestion is carried on at a great disadvantage. As long as the food is conducted into the intestine in small amounts and at proper intervals the intestine does very well. When we have a relaxed pylorus as well as achylia, the food passes directly through the patulous pyloric opening into the intestine, the intestine is unable to handle this properly and an irritable condition is brought about which results in a lienteric diarrhœa. These patients should be instructed to prepare the food for the intestine. The meats should be soft and tender and finely divided. When there is a tendency to loose bowels, all foods containing an excess of cellulose should be omitted from the diet, and only the cooked and mashed vegetables and fruits should be allowed. The absence of free hydrochloric acid is a handicap in more than one way. Its antiseptic action in the intestine and stimulating action on the Our patient pancreatic secretion are missing. should be instructed to masticate his food thoroughly, and if the teeth are bad he should be sent to a dentist for treatment.

Hydrochloric acid and pepsin are indicated in these cases. Of course we cannot hope to supply enough of either to carry on digestion as it is normally carried on. I have been in the habit of using the concentrated acid in four or five drop doses, which would equal a drachm of the dilute acid. The effect is good, and many of these patients have taken the acid for years and feel that they cannot get along without it. Even the small quantity that we give seems to improve the digestion, particularly of the intestine. The lienteric diarrhœa will often cease when the diet is regulated and acid and pepsin are given. I have found that several of my patients have required lavage at regular intervals. They are able to get along for a few days or weeks, and then are troubled with gas or pain unless they have local treatment. I have been in the habit of using a mild silver solution after the stomach has been cleansed, and washing the silver out after it has been in contact with the mucous membrane for a moment or so. The intragastric faradism also seems of benefit particularly in those cases where relaxation is pronounced and the stomach empties rather quickly. Nux vomica and condurango act well as local and intestinal tonics. The nux vomica and electricity, diet and acid, have apparently restored the secretion in the functional cases. Occasionally it is necessary to employ peptonized milk for a day or so to rest the intestine. Where there is colitis bowel washes are useful. The extract of pancreas often does better than pepsin in these cases. Massage, general faradism, hydrotherapy to improve the general tone are also indicated in many cases. When there is anæmia iron is indicated. The cases with organic changes have exacerbations which have to be met with symptomatically. Curiously enough, those patients who have pain are relieved by alka-

In conclusion, a brief résumé of the history and chemical findings in these cases is given.

CASE I.—Mrs. E. J. M., aged fifty, married, born in the United States. Patient gave a history of having distress an hour after eating. There was more or less gas, she was

short of breath upon exertion. Her appetite was good, weight 135 pounds. She was anamic. Hæmoglobin 75 per cent. She was constipated, and gave a vague history of stomach trouble for a number of years. Lavage three hours after test dinner: Hamburger steak and bread and water; reflow very poor, bread and meat unchanged, total acidity two degrees, no free acid, no combined acid, no biuret; pepsin and rennin negative; contents very pale. Patient was put upon appropriate diet and improved.

Case II.—Mrs. G., thirty-five years of age, married, United States. This patient had had looseness of the bowels for the past two years, particularly at night. She was troubled with shortness of breath after meals; appetite variable; tongue clean; patient was anamic, very delicate looking, and was decidedly neurasthenic. Bowels were loose even if they moved only once a day; patient weighed ninety-five pounds; hæmoglobin 75 per cent.; right kidney was displaced to the second degree. Stomach had been examined many times during the past year, the acidity fluctuating between two and ten degrees. Examination for free hydrochloric acid was negative, combined negative, no biuret; rennin and pepsin negative. The meat and bread showed no digestive changes. Contents were pale, usually considerable in amount. Patient under treatment had made only moderate improvement, having periods of diarrhea.

Case III.—Mrs. C., at. forty-three, widow, Swede. Patient had always been well up to nine years ago, since then had more or less distress after eating. There was considerable gas, particularly at night. She had had a number of painful attacks like gastralgia, coming on as often as once a week; the patient was well nourished; right kidney was displaced in the first degree, appetite good, tongue clean, bowels inclined to be constipated. Examination of the stomach after test dinner: Contents pale, meat and bread unchanged, total acidity four degrees, no free hydrochloric acid, no combined acid, no ferments. The patient was treated from time to time for a year, when free hydrochloric acid began to appear; she has been practically well since

Case IV.—Mrs. K. R., sixty-two, widow, born in German. Gave a history of bowel trouble for ten years. When she was at her best bowels moved four times a day; had frequent attacks where bowels moved almost continuously. Had attacks of collicky pain over the sigmoid. Her appetite was poor; her food did not distress her. Patient was very nervous. She was anæmic; hæmoglobin seventy-seven per cent. Examination of the stomach after all kinds of test meals showed a total acidity of from four to six degrees; free or combined acids were never found; rennin and pepsin absent; contents pale, food was practically unchanged. This patient improved greatly under appropriate diet and artificial gastric juice.

propriate diet and artificial gastric juice.

Case V.—Mrs. J. D., forty, married, United States. Had
never been strong; had had sick headaches for twenty
years, two or three times a week. Her weight was 125
pounds; she was anæmic, hæmoglobin forty-nine per cent.
The anæmia was not of a pernicious type. Bowels were
occasionally loose. Examination of stomach contents after
Ewald breakfast: The contents were pale and showed no
digestion. Free and combined acids were absent, rennin
and pepsin negative. Under appropriate diet and medication and frequent lavage, the patient improved; her bowels

became less active and her headaches disappeared.

Case VI.—Mrs. J. J., aged thirty-four, married, Canadian. Had never been strong. Family physician treated her for nervour prostration. Had had more or less trouble with gas in stomach and palpitation after eating for the last three years. The patient was anæmic and thin. Three hours after a test dinner, no free hydrochloric acid, no combined acid; rennin and pepsin negative. Food showed no digestion. Two weeks later lavage was again instituted. The stomach was practically empty and two sprouting lemon seeds were obtained through the tube. The total acidity was at this time six degrees; there was no free or combined acids, no rennin or pepsin. This patient's stomach contained so little acid material and the conditions were so favorable that lemon seeds were able to provide

Case VII.—O. C., female, aged thirty-five, single. Had been troubled with nausea lasting for a considerable period. These attacks of nausea came and went; her appetite was capricious; patient was nervous and gave a history of stomach trouble dating over a number of years. Her

mother died of pernicious anaemia. Three hours after a test dinner: The total acidity was six degrees, no free or combined acid, no rennet or pepsin, no biuret. Food practically unchanged, bowels costive. Patient after some treatment gained rapidly and was in fairly good health for a number of warrs, when the requisit developed and she died

number of years, when tuberculosis developed, and she died.

Case VIII.—J. W., male, thirty-nine years of age, married. The patient gave a history of constipation all his life;
his appetite was poor as a rule; he complained more of
brain fag and the general weakness of neurasthenia than
of gastric trouble; he weighed 126 pounds; the patient was
spare. One hour after a test breakfast: The food showed
practically no change; the total acidity was four degrees,
free and combined acids absent, biuret absent, rennin and
pepsin absent. Subsequent examinations gave the same
chemistry. Under diet and intragastric faradism the patient improved generally, but not locally.

tient improved generally, but not locally.

CASE IX.—Mrs. B. F., aged sixty, married. There was a history of specific trouble in this case; she was a well nourished and very neurotic woman, and gave a history of nausea and vomiting after meals for a period of several months. Contents after a test meal showed poorly changed and poorly masticated food; total acidity from two to four degrees; no free or combined acids, no pepsin or rennin; biuret absent; some mucus present. After rather regular gastric lavage, the nausea was relieved, the chemistry remained unchanged.

Case X.—Mrs. F., aged twenty-eight, married. Patient was well up to a year ago, when she began to have severe gastric pain. Pain was increased by eating; her appetite was fair, bowels costive; pulse rate was high, from 108 to 120. She had a moderate sized goitre; her weight was 111 pounds. Examination two hours after bread and water: Contents pale, food was practically unchanged; total acidity four degrees; no free or combined acids present; no rennin; no biuret. Subsequently, under treatment, gastric interesting of the case.

remmi; no blurer. Subsequently, under treatment, gastric juice returned in this case.

CASE XI.—Mrs. A. N., aged forty-two, Swede. Patient had not been well for twenty-three years; had had more or less trouble with stomach during this time. For the past few years had had looseness of bowels. Her bowels moved from eight to twelve times a day; some tenderness over the stomach and bowels. Lately she had had some colicky pain. Weight was 140 pounds.; she was a nervous woman. A number of examinations after the usual test breakfast showed invariably no digestion; contents always pale; total acidity varied from four to ten degrees; no free or combined acids were found at any time. This patient improved somewhat after a course of lavage and regulation of diet

Case XII.—H. W., male, forty-eight years of age, carpenter. Patient had a lemon yellow color; he gave a history of being in good health up to two years ago. Had been troubled with shortness of breath and weakness; this had been increasing lately. Blood analysis: Hæmoglobin thirty-five per cent, leucocytes 8,000, red blood corpuscles 3,200,000; cells were anæmic; no macrocytosis, an occasional normoblast was found. Examination of stomach one and half hours after a test breakfast: Contents pale, food unchanged; total acidity six degrees; no free or combined acids, no pepsin or rennin. Patient was put on large doses of iron, his diet was regulated, and he was given hydruchloric acid and pepsin. He improved steadily, and six weeks later the hæmoglobin was seventy-five per cent. He went to his home in Denver and had not been hard irom

CASE XIII.—B. M. X., male, thirty-five, married. Patient had had more or less gastric trouble for some years; he had been very irregular as to meals; he had more or less pain in the region of the pylorus; lately he had had periods of severe pain in the precordial region; he complained of gas in the stomach; a week before this patient was seen he had severe pain and vomiting; he had had attacks of pain and vomiting every few weeks; there was considerable tenderness over the epigastrium. He was constipated; his tongue was coated. Fifty minutes after a test breakfast, the food was unchanged, contents pale, considerable mucus; no free or combined acid, no rennin or pepsin, no biuret. Total acidity ten degrees. A subsequent examination, a few weeks later, gave practically the same results. The patient was put on lavage, diet, and hydrochloric acid and pepsin. He was seen some months later, and after a test meal at bed time, the contents

showed poor digestion, total acidity of fourteen degrees, free hydrochloric acid six degrees; traces of rennin and

pepsin.

CASE XIV.—Mrs. M., aged forty-five. Gave a history of more or less gas and distress in the stomach; occasional attacks of severe headache; one hour after a test meal food was unchanged, contents pale, total acidity four degrees; no free or combined acid, no ferments; bowels reg-The patient was instructed as to diet; was given large doses of acid and improved as to distress in the

stomach. The chemistry of the stomach upon subsequent examinations was found to be the same.

Case XV.—E. M., male, thirty-two years of age. Patient complained of looseness of bowels which move directly after eating; he had been troubled in this way for Examination of stomach one hour after a test breakfast: Food unchanged, contents pale, no free or combined acids, no ferments. Examination of the stools showed a large amount of undigested meat. Patient was treated with lavage and faradism. He was instructed as to diet and given hydrochloric acid. A few weeks after treatment was instituted an intractable joint affection developed, practically a rheumatoid arthritis. This joint con-

dition up to the present resisted all treatment.

CASE XVI.—Miss K., aged fifty, school teacher. Patient gave the history of gastric trouble lasting over a period of several years. She was nervous, had more or less vertigo, and she had lost weight and strength, and was very much depressed. Examination of stomach one hour after test breakfast and many subsequent examinations showed an acidity varying from four to six degrees. There was no free or combined acid found at any time, and no ferments. Food was always practically unchanged. Under lavage, diet, with large doses of free hydrochloric acid, the patient improved generally, but not locally.

56 ALLEN STREET.

ADIPOSIS DOLOROSA.

Diagnosis. The Result Of Surgical Treatment. BY THEOPHIL KLINGMANN, M. D., Ann Arbor, Mich.

While this condition is not a distinct entity, Dercum applied the term "adiposis dolorosa" to a symptom complex which is pathologically closely allied to acromegalia, myxœdema, and exophthalmic goitre. Authors of the more recent textbooks on diseases of the nervous system place adiposis dolorosa with the conditions referred to under one common head

"trophoneurosis."

As the name implies the condition is characterized by accumulation of fat usually localized in which there is pain and tenderness, and in connection with this asthenia is a prominent symptom. The pain may be more or less continuous with paroxysms of sharp darting pain which is usually described as neuralgic in character. The asthenia is variable, it may be very marked or entirely absent. In a number of cases reported no mention is made of this condition. Occasionally the psychic phenomena are pronounced, patients being apathetic and depressed and often very irritable.

Without going into details' as to the variability of the symptoms and many other conditions which may arise during the course of the disorder it is worthy of emphasis that the pain is the most prominent and distressing symptom. It is this that brings the patients to seek medical aid. Pressure over the fatty deposits always causes pain. Often there is more or less constant pain described by the patient

as rheumatism or neuralgic pain.

The case which I am about to relate is interesting not only because it is a rare condition but also from the standpoint of diagnosis, which was doubtful as the condition was associated with hysteria.

CASE.—The patient a woman, forty-nine years of age, of healthy appearance, very stout, with a somewhat awk-ward gait, applied for treatment at the University Hospital on account of pain and localized swellings in various parts of the body. She was entered in the service of Dr. C. D. Camp, who referred her to me for special study and to whom I am indebted for the opportunity of seeing her

History.-The father and mother died at an advanced The mother was of a nervous temperament, one sister died at the change of life and two sisters during infancy. There was no history of tumors or constitutional disease, no nervous disorder or insanity. The patient was well during early childhood; when she was eleven years old she had a severe fall, and at sixteen she was accidentally thrown from a wagon, in consequence of which she became very nervous, was easily excited, and often very irritable. On several occasions she was overcome by marked weakness in the legs, causing her to fall on her knees, but was never unconscious during these attacks.

Later she noticed a similar condition in her arms and hands. She became awkward in holding objects, and frequently dropped things out of her hands. Menstruation began when she was eleven years old. She was always regular, the flow normal, and she had no pain. She was treated for uterine disease which she states was an ulcerated uterine cervix. At the present time she is passing through the menopause. She was married at twenty-five, two years later she became suddenly totally paralyzed following a seizure during which she stated she was un-conscious. Her body was rigid, her head retracted, the back arched, and the legs flexed upon the thighs. She also lost her voice and was unable to speak for three years The paralysis following this attack gradually disappeared, but lasted over a period of three years. During the time she was confined to bed her weight increased to the extent of 100 pounds, her total weight reaching 303 pounds. breasts became very large and very painful. The p The panniculus flabby and pendulous, overhanging the pubes and inguinal region in an apronlike fashion.

Present illness .- The patient's chief complaint was pain in the left axilla and the posterior part of the left thigh, where there were distinct swellings. She had paroxysmal sharp stinging pain in these localities and more or less wandering pain in various parts of the body which she described as rheumatism. Her arms and legs felt heavy and occasionally numb, and she had a feeling of general exhaustion. For several years she has had frequent attacks of vomiting and diarrhea lasting two or three days at a time. She stated that the vomiting was not preceded by nausea and that the stools were green with considerable mucus. Frequent micturition disturbed her sleep at night. She had become forgetful and at times stupid. Two years ago she had both breasts removed on account of the pain and the discomfort caused by their enormous size. She was much better and quite free from pain for some time. About this time she first noticed the swelling in the axilla and posterior part of the thigh. She stated that these swellings were painful on pressure, gradually

grew larger, and the pain became more severe.

Examination.—The patient was very corpulent, weighing about 280 pounds, panniculus abundant and flabby, hanging in folds over the abdomen. The hands and wrists were small, also the forearms were comparatively free from excessive fat. The feet and ankles were also small, the right leg slightly larger than the left, the thighs were very large. There was a tumor like mass in the posterior portion of the right thigh just above the popliteal space, another somewhat larger mass in the outer part of the same thigh, and the third in the right axilla. These masses were somewhat more firm than the surrounding tissue, more or less circumscribed and very painful on palpation. skin over the thorax and arms was warm and elastic and not adherent to the subjacent structures. There were two large, well healed scars the result of breast amputations. There were no enlarged glands. About the scleral vessels there were light yellow deposits of fat. The movements of the eyes were normal, the pupils equal, and they reacted

For a complete review of the subject and a detailed description of the same I refer the reader to a paper by Dr. Jules B. Franken-heumer, Journal of the American Medical Association, No. 13, March 28, 1968.

to light and in accommodation. There was no facial palsy, and the tongue protruded in the median line. I showed good resonance over the entire front. râles were occasionally heard over the right apex, bronchovesicular breathing in the right apex, vesicular in the left, and blowing rales were heard below the clavicle on inspiration. The first heart sound was slightly impure, the second sound muffled at the apex. Over the pulmonic area the first sound was faintly heard, the second was roughened over the aortic area. The radial pulse was regular, easily compressible, and of good volume. There was no enlargement of the liver, the spleen was not pal-There pable. In walking the patient carried the left knee higher and more forward than the right. She did this to carry the foot and toes over the floor, which she was unable to raise independently owing to defective action of the extensor muscles of the foot and toes. She could not move the toes, and there was but slight flexor action of the left foot and not complete in the right. There was no Romberg's sign. Muscular strength was fair in the lower extremities, repeated tests, however, showed rapid exhaustion. The patient had a coarse tremor in both hands which occurred only during volition. The grip of both hands was fair and equal, but muscular strength was easily ex-There was considerable incoordination in the hands and arms after repeated attempts to extend and flex them. The reflexes of the upper extremities were not present, the knee jerks were absent, also the Achillis tendon reflex on both sides and the plantar reflex was not obtained. Other skin reflexes were not active. There was considerable tenderness over the nerve trunks of the extremities. Hyperæsthesia principally of the arms and legs, localizing sense was somewhat disturbed in the toes and feet, loss of sense of position quite marked in the toes of both sides. The stereognostic sense was not impaired. The blood and urine analysis revealed nothing of interest.

On March 7, 1908, the patient was transferred to a surgical clinic and was operated upon by Dr. Nancrede for the removal of the tumor in the right axilla. rapid recovery and returned to her home on June 20th of the same year. Three months after the operation the patient wrote in response to a letter that she had been entirely relieved from the paroxysms of pain in the right axilla and had improved in general health.

Summary.—About two thirds of the cases on record, the total numbering about forty-five, are those of an advanced stage and some with extreme mental and physical debility of long standing. In some of these the physical debility is most marked, in others the psychic phenomena more prominent, while in others the mental faculties are not disturbed even after the disease has existed for years. The accumulation of fat, pain and tenderness in the fatty swellings, and asthenia are constant and characteristic symptoms in the majority of cases recorded.

As ætiological factors in the author's case we find early in life evidence of a marked unstable nervous system. Trauma which figured in a number of cases, was recorded, after which the first symptoms appeared. Disturbance of the sexual organs is frequently mentioned in the records of cases, and was present in this case; also pregnancy during which an exascerbation of the ailment occurred and which finally resulted in abortion at the end of the third month. A case reported by Spiller dated from pregnancy, while Schlessinger and others reported cases following abortion. The menopause seems to be a prominent predisposing cause, and so in the writer's case the patient's symptoms became more marked during this period. Clinically, marked irritability with short periods of apathy were early symptoms. These were prominent in Dercum's cases and were noted early in the disorder. In this case apathy has appeared periodically throughout the course of the disease and of late more frequent. Asthenia is

found mentioned in the records of nearly all of the cases. In this case it was apparent in the attacks of weakness and later the awkwardness in the handling of objects and subjectively the feeling of complete exhaustion, also the easily exhausted muscular strength during repeated muscular efforts. Pain and tenderness were present in all of the cases reported whose records I examined. In the case just reported the pain was rather general at the beginning and did not become paroxysmal until localized accumulations of fat appeared, then the pain was sharp and piercing and more distinctly localized. The disturbances of sensation consisted of paræsthesiæ, the patient having a great deal of numbness, prickling and tingling in the hands and feet; hypæsthesia to touch, pain, and temperature in the arms and legs less marked over the trunk. This has been found in the majority of cases, and numbness is a common complaint. Hypæsthesia of touch, pain, and temperature is the rule. Disassociation is not frequent, although mentioned in two or three of the cases. Vasomotor phenomena are comparatively frequent, especially lessened perspiration. In several cases more marked conditions, such as cyanosis, ecchymosis, and trophic ulcers of the extremities, are recorded. The condition of the reflexes is quite constant, and the reports show that the knee jerks and tendon reflexes in general are markedly depressed or entirely absent. The biceps and triceps jerks, also the knee jerks, and the Achillis reflexes were absent in the writer's case. The skin reflexes could not be elicited.

It is stated by some authorities that paralysis does not occur. This, however, is contrary to the pathological findings in one of Dercum's cases in which the post morten examination showed an interstitial neuritis, and paralysis was present in the left foot of the patient under consideration. This developed gradually, extending over a period of two or three years.

The complete paralysis following a seizure in which the patient's body was in a pose of opisthotonus accompanied by unconsciousness, referred to before, cannot be associated directly with adiposis dolorosa as a part of the symptom complex, but as in many other organic conditions of the nervous system is an expression of a neurotic temperament and frequently manifests itself in such extreme functional distortion, either through the debilitating influence of the organic disease or through some external exciting cause. This is important in the diagnosis, as frequently the symptoms due to an organic change are entirely masked by the functional disorder where hysteria accompanies organic disease.

The gastrointestinal disturbances spoken of in the history of the case have been observed in a number of cases of Dercum's disease and are probably reflex

in origin.

Pathology.—The most constant organic lesion is a change in the thyreoid gland, however the thyreoid gland was normal in one of the cases that came to autopsy. The fatty tissue does not deviate from the normal. In one of Dercum's cases referred to before there was an interstitial neuritis with some sclerosis in the columns of Goll. In three out of five cases examined there was a lesion in the pitutiary body. While the post morten examination in

cases of adiposis dolorosa are rather limited as the disease is rarely fatal and of infrequent occurrence the pathological findings are much the same as those found in acromegaly. Clinically, there is an overgrowth of fatty tissue in adiposis dolorosa, while the same is true of the osseous structure in acromegaly.

Conclusion.—In conclusion I may say that adiposis dolorosa is a neuropathic condition of unknown cause occurring in women with neuropathic heredity, and is characterized by painful, fatty swellings occurring in various parts of the body, which condition is preceded or followed by asthenia. Many other symptoms varying from a slight functional disarrangement to organic degeneration are incidental expressions of an inherited unstable nervous system occurring in many other nervous disorders.

As to treatment, we have no remedy which has given uniform results. The thyreoid extract has given relief in a few cases; in one case an apparent cure was brought about. The removal of the fatty accumulations through surgical means gave relief to this patient for a time at least. She improved in general health, and was free from pain for a considerable period after each operation. However, as the condition is progressive, we may not expect anything but temporary alleviation, recurrence of the fatty swellings, and with this an exacerbation of the symptoms.

REPORT OF THE PROCEEDINGS OF THE THIRD INTERNATIONAL SANITARY CONVENTION.*

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Under the Imprimatur of the American Society of Tropical Medicine.

In compliance with a call for the assembling of the Third International Sanitary Convention of American Republics by Dr. Walter Wyman, chairman of the International Sanitary Bureau, dated June 18, 1907, the convention was held in Mexico City, December 2 to 7, 1907, to which thirteen republics sent a total of twenty-three delegates. The Bureau of American Republics also sent a representative.

The meetings were held under the presidency of Dr. Eduardo Liceaga, with Dr. Juan Jose Ulloa, as secretary. These officers had been elected at the previous convention held in Washington in 1905.

The sessions were held in a hall of the Treasury

Department in the National Palace.

The provisional program which was prepared by the chairman of the International Sanitary Bureau, Dr. Walter Wyman, was as follows:

(1) "Each delegate will bring a paper relating to the nation he represents. This paper will cover

the following points:

(a) A report on the existence of transmissible diseases which may prevail in its territory, especially with reference to bubonic plague, cholera, yellow fever, malaria, beriberi, and trachoma. This report will give detailed information on the measures which have been adopted for the prevention or stamping out of any of the diseases above mentioned, if they are unfortunately present in the coun-

try represented by the delegate.

(b) A report on the condition of the ports of his country, specifying the works which may have been executed therein, those in course of construction and those which are projected, as well as the manner in which the problem of water supply, of proper sewerage and of the connection of house drains with that system has been solved, as well as the methods that have been employed or are proposed for the sanitation of dwellings.

(c) A return of the assistance which the general governments may have furnished to the respective states or municipalities, for the execution of sanita-

tion works in the cities and ports.

(d) A report on all the sanitary police laws which have been issued since October 14, 1905.

(2) Every delegate will suggest some practical means to prevent persons who may be suffering from tuberculosis from transmitting the disease to the healthy persons who may be traveling in their company either in trains or in vessels.

(3) As forming part of the order of the day, the delegates will be at liberty to present original papers

relating to the following points:

(a) Studies directed to the discovery of the germ

of vellow fever.

(b) Studies directed to the investigation as to whether there are other means of transmission of vellow fever and malaria besides the sting of the mosquitoes.

(c) Studies directed to the perfection of the

methods of combating the mosquito.

(4) Each delegate will present a report upon the organization in his own country of the commission of three medical or sanitary officers intended to form part of the International Sanitary Commission of Information of the American republics, as provided for in paragraph 3 (b) of the resolutions adopted at Rio de Janeiro.

(5) Report upon the establishment of the Sanitary Information Bureau of Montevideo, as provided in paragraph 3 (c) and paragraph 4 of the

resolutions adopted at Rio de Janeiro.

(6) Report upon the establishment of relations between the International Sanitary Bureau at Washington and the Bureau Sanitaire International of Paris, as provided in paragraph 3 (d) of the resolutions adopted at Rio de Janeiro.

(7) Besides the full papers and reports above mentioned, each delegate will bring an extract of the same, but so concise that it can be read in fifteen minutes. These extracts alone will be read during

the meetings.

(8) All the extracts will be written in Spanish and English. Those presented by the delegates from Brazil will be in Portuguese and English, and those by the delegates from Haiti will be in French and English, so that while each delegate reads his extract in his own language, the others can follow, reading the same document in the language with which they are familiar.."

The first session was held on the morning of December 2, 1907, at 10 o'clock, and was addressed by the vice president of the republic of Mexico,

^{*}Read by title at the fifth annual meeting of the American Society of Tropical Medicine, held at Baltimore, March 28, 1908.

Don RAMON CORRAL. In his address he briefly summarized the work and results obtained by the previous two conventions, and pronounced the work of the present convention and all conventions to come, in formulating principles relating to public health for the adotpion of all nations, a duty to civilization. The spirit of his nation, he said, was to abide by such results as had already been demonstrated by the expenditure of large sums of money and free appropriations for sanitary purposes. He welcomed the delegates to Mexico in the name of the president of the republic.

Dr. Liceaga then welcomed the delegates. He reviewed the work of the previous conferences, stating that the first convention was a congress of hygienists, who expressed their adherence to the advanced position of sanitary science. The second reached an agreement between the nations concerning measures for defense against plague, cholera, and yellow fever. He then asked for the adoption of defensive measures against tuberculosis, malaria, beriberi, and other infectious diseases. The logical method was to prevent diseases from originating in the country itself, and that the ideal method would be to have cities provide good water supply, drainage, sewerage, paving, light, and ventilation, and to prevent the overcrowding of buildings, so that they cannot be invaded by transmissible diseases.

He then reviewed some of the work done in Mexico, particularly with regard to the eradication of yellow fever, which had existed along its Gulf coast for four centuries. The campaign waged against the epidemic in 1903, which had spread as far as the northern frontier, practically eradicated the disease in three months. The succeeding camthe disease in three months. paign to eradicate the latent foci in the states of Tamaulipas, Vera Cruz, and Yucatan, resulted in limiting the disease to five isolated cases in eleven

months.

He then mentioned bubonic plague, which had been eradicated after a campaign of six months following its appearance on the Pacific coast of the

He then said: "I have mentioned these examples in order to demonstrate how great is the obligation under which we all stand to attend to the sanitation of our cities; not only the great centres of population, but also the smallest ones, even the villages.'

He concluded with an axiom for the guidance of all nations of America, "To defend our legitimate interests without injury to ourselves or doing injury

to others."

Dr. O. Gonzales Cruz reported for Brazil. He said that the sanitary conditions of Brazil were improving every year as the result of the campaign waged against infectious diseases. A special organization administered sanitary measures against vellow fever: (1) The isolation of those suffering from the disease and the fumigation of the houses occupied by them. (2) The systematic destruction of mosquitoes. (3) The verification of deaths and medical vigilance over persons not immune residing in the infected centre. In order to prevent the spread of bubonic plague, the extermination of rats, the destruction of fleas, the disinfection of houses, the isolation of cases, the inoculation with antipest serum exas being practised. The use of serum was reported

to have reduced the mortality from this disease fifty per cent. The destruction of mosquitoes in cities and the administration of five grains of quinine every three days were adopted with excellent results for the prevention of malaria. Immigrants who were suffering from trachoma were debarred. Vessels were thoroughly disinfected when beriberi had

Floating plants, completely equipped with disinfecting apparatus, were in operation at Rio de Janeiro and Santos. Other ports, as Bahia, Para, Maranhao, Rio Grande do Sol were to be equipped

with like plants.

The federal authorities contemplated forming a complete sanitary organization of all ports of Brazil. Plans were in preparation for equipping all ports

with disinfecting plants and hospitals.

Dr. J. J. Ulloa reported that important port and sanitary works were in progress in Costa Rica and that the most approved modern sanitary appliances were being introduced.

No plague, yellow fever, beriberi, or trachoma

has been reported.

Malaria prevailed, especially on the Atlantic and Pacific coast regions.

About 72 per cent. of the mortality in Costa Rica occurred in children under five years of age.

The sanitary state of the country with respect to yellow fever had been excellent, owing to the adoption of measures for exterminating the stegomyia

calopus.

Dr. Hugo Roberts gave a detailed account of the sanitary organization of Cuba, which had a National Board of Health. The Quarantine Service enforced laws and regulations which were practically the same as those of the United States, the superior board of health or national sanitary department supervised all matters concerning public health and sanitation in the republic.

He discussed the work of the immigration service and the occurrence of yellow fever in Cuba since its reappearance in November, 1905. No plague had thus far occurred, but some observations were made with a view of determining the distance which rats would swim in Havana harbor. For this experiment six rats were thrown into the bay of Havana and their movements observed. The following observations were made:

(1) Rats are able to remain on the surface of the water for from thirty-five to forty-five minutes.

(2) They do not swim in a straight line

(3) If they happen to see a floating object, they steer for it, seize it, if possible, and hold on unless separated from it by force.

Consequently (1) it is sufficient to anchor the vessel requiring fumigation fifty metres from shore, as rats will not cross this distance unless carried by a current or some floating object.

(2) Floats should be placed near the vessel, so that rats falling into the water may find ready

refuge where they may be easily killed.

The delegates from Chile reported as follows: In Chile matters of public health are entrusted to a Department of the Interior and to the municipal governments.

Whatever public health measures are promulgated by the Department of the Interior, upon advice of the superior council of health and Institute of Hygiene, at Santiago de Chile, are enforced by the intendants, governors, and officers representing the executive in their respective territories. Bubonic plague formed seventy-five per cent. of the cases of plague observed in eight coast cities; the septicæmic or intestinal form gave five to six per cent., and the pneumonic formed one to two per cent.

No yellow fever was reported. Malaria and beriberi were unknown. There had been an extensive epidemic of smallpox. Typhoid fever was endemic.

The delegates from Ecuador reported: The Board of Health of Guayaquil, which is the principal port of Ecuador, is an independent body. It has representatives in all ports, and its jurisdiction extends over five provinces. In enforcing public health measures it has adopted and is guided by the rules laid down by the convention of Washington.

An effort will be made to have congress pass a

law making vaccination compulsory.

A drainage canal is to be built in Guayaquil which will be indispensable for the sanitation of the city in the work of exterminating yellow fever and malaria, which are endemic.

In Quito, the capital city, a sanatorium for tuberculosis is about to be completed, which it is said will rival any institution of its kind in Europe or

America.

Trachoma, beriberi, and bubonic plague are unknown in Ecuador. A quarantine has been established at all ports against places where plague prevails. A quarantine station was established on the island of Puna in 1903, and no expense has been spared in equipping it.

Smallpox in mild form has prevailed among persons not vaccinated, but no epidemic occurred.

For the United States, Surgeon General WALTER WYMAN, Public Health and Marine Hospital Service, reported on the work done by the Hygienic Laboratory of the service in matters of public health, its study of typhoid fever, milk industry, supervision of vaccine and antitoxin production, uncinariasis, and tuberculosis. He submitted reports on the progress of the work of the service in San Francisco for the eradication of plague; on the leprosarium at Molakai, in Hawaii; on the National Quarantine Service, which now has forty-three stations operating since the acquisition of the Gulf port stations; on the Foreign Quarantine Service in the Philippines; the inspection of immigrants, both at foreign ports and all domestic ports in the United States; on mosquito extermination work in Baltimore, and on the sanitary works contemplated and in progress in the cities of Mobile, Galveston, and New Orleans.

The report from Guatemala stated that in May, 1906, a code of health was promulgated, providing for all sanitary regulations and measures based on recent approved methods applicable to the conditions

met in that country.

Malaria prevailed in all sea coast cities. Trachoma and beriberi were said to exist in the country. Only one case of typhus fever was reported in the first six months of 1007.

There was an institute established in the capital city for the production of animal vaccine. Vaccination was compulsory.

A Superior Board of Health had been created for the direction of matters of public health. The government contemplated the erection of sanitary stations (quarantine stations?) at Puerto Barrios on the Atlantic, and at San Jose on the Pacific coast.

Since 1900 Salvador has had a Superior Board of Health. All ports are equipped with disinfecting

apparatus for marine sanitation.

Vaccination and revaccination every six years is done by the government, animal vaccine being used.

Malaria in all its forms is endemic.

Tuberculosis causes six per cent. of all deaths. No epidemic of yellow fever has occurred in Salvador since 1900. Since that date but one case of yellow fever was confirmed and six suspicious cases

reported.

On account of the financial conditions of the country, no extensive works for the sanitation of cities

and water supplies could be undertaken.

Discussion of the measures of the international sanitary policy against yellow fever. Dr. Liceaga reviewed the conditions in Mexico and spoke in favor of permitting persons arriving in good health from suspected or infected ports to land without detention. He said that in Mexico the high officials were admitted without restrictions. Suspected cases of yellow fever were allowed to land and to proceed to such places in Mexico as were known to be unfavorable for the spread of yellow fever. Suspected cases entering infectible territory would be held under observation by local authorities. So far as Mexico was concerned he did not think more stringent measures were necessary or need be applied.

Dr. Guiteras stated that such measures as advanced by Dr. Liceaga would not be applicable to Cuba, where every portion of the country had conditions favoring the propagation of that disease

tions favoring the propagation of that disease. Surgeon General Walter Wyman stated that in the United States we had infectible and noninfectible territory; that while the general conditions in each country forced themselves on the authorities, quarantine measures were about the same for all, and would need to be applied as the necessities arise and circumstances require. It was, therefore, not necessary to take the same measures against a vessel from an infected port in Boston as in our southern territory.

Dr. Cruz stated that isolation was impracticable in his country, and for that reason daily inspections were made of all sick and suspects. As many as

4.000 visits were made in one day.

Discussion on malaria.—Dr. LICEAGA opened the discussion. He said that in Mexico the sanitary forces, now engaged in the work of exterminating yellow fever infection, would be employed to do similar service in the places where malaria prevailed. He proposed that all countries carry on a crusade against malaria in the same manner as was done in tuberculosis.

Dr. GUITERAS stated that the majority of persons detained at Las Animas Hospital, in Havana, on account of fever were found to be suffering chiefly with malarial fever, for which disease they were treated before being permitted to leave the hospital and enter the country. He favored a mild quaratine and introduced resolutions to that effect.

Dr. H. L. E. Johnson proposed that the name

of diseases transmissible by mosquitoes be called "mosquito fever." That malaria be then called "anopheles fever"; yellow fever, "stegomyia fever," etc. This nomenclature, he maintained, would give the people a more accurate notion of the cause of the diseases and would facilitate the work of the sanitary authorities in enforcing preventive measures against the spread of those fevers.

Dr. Ulloa suggested the name "stegomyia mosquito fever," "anopheles mosquito fever," etc., adding the word "mosquito" to the names given by Dr. Johnson. He said that the education of the masses was the first step toward putting down any disease, and they should know the exact causes of diseases.

Dr. Guiteras brought out the fact that in Cuba malaria was not spread solely by anopheles, but also by other species, such as the cellia. He thought that the terms were, therefore, not applicable.

Dr. CRuz stated that in Brazil myzomyia were present.

Dr. R. H. von Ezdorf mentioned his experience at the New Orleans quarantine station during the past summer, where all persons from the tropics arriving with fever were held for observation. It was his experience that nearly all cases excepting about twenty, which were cases of typhoid fever, proved to be malarial fever, chiefly of the æstivoautumnal type. In all cases, however, the parasite or other evidence of malaria was found and demonstrated microscopically. He also favored the detention and quarantine of cases of malarial fever when in the active stage of the disease.

Discussion on the measures of the international sanitary policy against bubonic plague and cholera. -Dr. LICEAGA gave a detailed account of the work done at Mazatlan and emphasized the following

points in the campaign:

(1) Depopulation as far as possible, and notification of authorities at destination. (2) Inoculation of persons with antipest serum. (3) House to house inspection. (4) Hospital for suspected cases. (5) Lazaretto for positive cases of plague and for convalescents. (6) Observation camp for those exposed. (7) Destruction by fire of all houses which cannot be disinfected. (8) Destruction of rats, mice, and fleas. (9) Cordon about the infected town or city.

Dr. CRUZ stated that persons leaving Rio de Janeiro were vaccinated with antipest serum.

Dr. Espiro stated that plague had been in Montevideo in 1901; that cases had been traced to the custom house, where rat plague prevailed; that some cases were traced to bags used in packing crackers, that these bags came from Asuncion. Some cases had been traced to bags used for coffee from Rio.

Discussion on trachoma, beriberi, and other transmissible disease.—Dr. LICEAGA, in discussing the presence of some cases of trachoma and beriberi in Mexico, stated that an immigration law was in preparation providing that immigrants suffering with tuberculosis, scrofula, acute malaria, beriberi, or other transmissible diseases, be prevented from entering the country. He believed that if all nations of America adopted measures for preventing admission of immigrants sick and incapacitated for work, it would contribute materially toward the improvement of hygienic and social conditions.

Dr. Hugo Roberts stated that immigrants suffering with trachoma were not permitted to land in Cuba.

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Dr. Ferrer, of Chile, stated that out of 17,000 known cases of various forms of conjunctivitis, only 0.14 per cent. were found to have trachoma.

Discussion on measures for preventing the transmission of tuberculosis in railroad cars and ships.— Dr. Liceaga opened the discussion on this subject and mentioned the use of metallic plates heated by electricity or other means for burning the expectoration. That on railroad cars a special place might be provided with a vessel or receiver where the passenger could go to expectorate, and where the spittle would be carried off by a current of water or destroyed in situ by heat. Pocket spit cups were to be used only in special cases.

Dr. Hugo Roberts, of Cuba, favored the application of prophylactic measures to vessels as well as to cities. Vessels should be looked upon as floating hotels, and frequent disinfection should be done.

Dr. FERRER, of Chile, favored the use of envelopes for napkins when not frequently changed, to

avoid contact of napkins after use.

Dr. R. H. von Ezdorf said that it was impossible to take extraordinary measures, that whatever regulations were adopted must be easy of application. The following measures were practicable:

1. Physical examination of crews before giving

employment.

2. The traveling public should be educated to understand that the practice of expectorating promiscuously might be dangerous and was filthy.

3. Notices should be posted enjoining passengers not to expectorate on floors. Receptacles should be provided for this purpose. Paraffined spit cups, which were cheap, should be provided.

4. All persons should be encouraged to use indi-

vidual drinking cups.

5. Living quarters of short trip vessels to be disinfected periodically; long trip vessels should have the steerage quarters disinfected at the end of each

6. Screening as far as practicable of the galley, dining rooms, and living quarters, to prevent the

access of flies.

Dr. Soza, of Chile, recommended the following measures

1. Avoid the use of carpets in dormitories.

2. Spittoons to be well distributed.3. The disinfection of cars and berths.

3. The disinfection of daining rooms, envelopes for 4. The disinfection of dining rooms, envelopes for the part changed frequently. napkins when the latter are not changed frequently. 5. The examination of passengers and the isola-

tion of suspected cases of tuberculosis.

Dr. H. L. E. Johnson, of the U. S., recommended that tuberculous subjects be not employed on cars or ships where, in the discharge of their duties, they would come in contact with passengers. That they be not employed as porters, cooks, or dining room attendants; the education of the people; the destruction of flies; separate apartments for tuberculosis subjects, and disinfection of berths and

Sanitation of ports and cities.—Dr. LICEAGA presented a paper on the sanitary work done, such as providing water supply, sewerage, drainage, and paving in the principal cities of Mexico, on the assistance afforded by the federal governemnt. A total of over \$45,000,000 was appropriated by the government for Tampico, Vera Cruz, Coatzacoalcos, Manzanillo, Salina Cruz, and Mexico, D. F. The amounts appropriated for the cities were in addition to sums appropriated by the states and cities themselves for carrying out the work required.

On a motion made by Dr. Espiro, of Uruguay, the delegates voted unanimously a rising congratulatory vote to Dr. Liceaga and the Mexican Board of Health in acknowledgment of the sanitary work

accomplished by them.

Dr. Juan Guiteras read a paper in which he gave a history of the spread of yellow fever and the campaign made against yellow fever in Cuba

since its reappearance in November, 1905.

Respecting an improvement in the methods for exterminating the mosquitoes he mentioned the plan by which large dwellings with their patios are completely covered with a tent and then fumigated. He said that this plan was working satisfactorily.

Dr. LICEAGA stated that a canvas cover, in sections, is used in covering *jacals* and thatched houses to make them air tight preparatory to fumigation. The canvas sections overlapped each other when applied and the ends were fastened to the ground, so that there would be no space for a mosquito to escape.

The following resolutions were approved by the Advisory Committee and were passed by the con-

vention:

I. The representatives of the governments of Brazil, Colombia, and of Uruguay are asked to adhere to the sanitary convention which was signed

in Washington in 1905.

2. To the American governments represented in this convention is recommended the codifying of all sanitary laws and regulations of the respective countries, and as soon as this is accomplished, to forward copies of them to the International Sanitary Bureau at Washington.

3. The convention is recommended to authorize the International Sanitary Bureau of Washington to establish by means considered by them to be most convenient, corresponding relations with the international sanitary bureau of Paris, in accordance with the declaration made by the third Pan American Congress, held in Rio de Janeiro, August, 1906.

4. That the secretary be authorized to include in the publications of the proceedings of the third international sanitary convention a summary of all the resolutions adopted by the first and second inter-

national conventions held in Washington.

5. That recommendations be made to the American governments of the convenience of agreeing upon compulsory vaccination against smallpox.

6. That recommendations be made to the governments represented in this convention of the convenience of declaring free from state taxes the salts of quinine, fine wire, mosquito netting to be used as a protection against mosquitoes, crude petroleum, mosquito bars, and material used for that purpose.

7. That recommendations be made through the medium of the respective authorities that the governments enter into a most active propaganda on

the ætiology, prophylaxis, and treatment of malaria, and resolve upon the establishment of public conferences on these subjects in schools, shops, barracks,

8. That recommendations be made for the establishment of centres at necessary points for the free distribution of quinine to the poor in necessary

quantities for the prophylaxis of malaria.

9. That recommendations be made to the governments that they order the maritime sanitary authorities to include in the public health reports which they issue the mortality occasioned by malaria.

10. That recommendations be made to the International Sanitary Bureau at Washington that it give information to the countries represented of the ex-

istence of malaria at the principal seaports.

11. That recommendations be made to all governments alike for the publication of a pamphlet in which is compiled in a brief, simple, and practical form, easily understood by the public, facts concerning malarial fever, for liberal distribution.

12. That recommendations be made to the governments that they prohibit the immigration of per-

sons suffering from trachoma and beriberi.

13. That recommendations be made to the various American nations for the legal and adequate steps in favor of the nationalization and centralization of sanitary authorities.

14. That to the American governments be recommended the following suggestions for the prevention of tuberculosis in railway cars and steamships:

a. To avoid, as far as possible, the use of carpets

and fixed curtains.

b. To recommend the use of spittoons well distributed.

- c. Periodical disinfection of cars and staterooms, including furniture, beds, washbowls, linen, etc. These disinfections should especially be made in the third class passenger quarters. All clothing, including napkins, should be disinfected before being washed.
- d. Disinfection of dining room service and the use of paper envelopes or covers for napkins used by passengers; also that food be covered with screens; that doors and windows of railroad cars, staterooms and habitations on vessels be screened with fine wire netting to avoid the introduction of flies.
- e. The examination of employees of passenger trains and vessels, in order that tuberculosis subjects

are not employed.

f. All vessels should have a special and comfortable department for the accommodation of tuberculosis patients, its construction not to admit of the retention of dust in any part.

g. The pasting of notices in public places con-

demning the habit of spitting on floors.

h. Recommending that physicians on board a vessel be not only titled in their profession, but, if possible, to have a special knowledge of the prophylaxis of tuberculosis.

15. That recommendations be made that it would be advantageous for the European nations to adopt the Sanitary Convention of Washington of 1905 for the colonies they have in America.

16. That recommendations be made to the Amer-

ican nations that it would be advantageous to have a uniform bill of health, and that such contain the

same class of information.

17. That recommendations be made to the American governments that it would be advantageous to establish separate hospitals for the treatment of tuberculosis, and if such is not possible, then the establishment of separate wards in hospitals for the treatment of such sick.

Costa Rica was chosen as the place of the next International Sanitary Convention of American Republics, to assemble December 25, 1909.

Dr. J. J. Ulloa was elected president.

The social features included banquets, a tea at Chapultepec Café, a visit to Chapultepec Castle, where the Mexican band rendered music, a reception by President Diaz, automobile rides, and excur-

A visit to the penitentiary proved of interest. The penitentiary occupies 32,700 square metres. Entering the administration building, the delegates were shown the administrative offices. In one room was the anthropological department, where skulls of all persons executed at this penitentiary were collected and preserved. All data concerning the individual skulls was kept on cards and a comparative study could be made with the normal skull by any one interested.

Entering the prison grounds proper, the first thing that attracted the attention was a central steel tower thirty-five metres high. This tower supported the water tanks and served as a watch tower where guards were continually on duty, and from which a perfect view was had of all parts of the prison.

The prison was said to be planned after the Irish or Crofton penitentiary system. The buildings, seven double rows of two story structures divided into cells, were built radiating from the tower.

There were two central bath houses, each built in the form of a circle, located in the prison courtyard. In the centre of each bath house was a small tower, from which a full view was had of the twenty-three individual bathrooms into which this space was divided by walls as radiating from a centre. Each individual bath or compartment was furnished with a stone wash tub, stone closet seat and closet, shower and stone bath tub.

As each prisoner entered a compartment he was locked in, and the watchmen in the tower could see that he took his bath. When the prisoners completed their baths and were ready to leave, the watchman took them through a series of setting up exercises, giving the signal and marking time for the various movements by striking a club on the rail in front of him. No prisoner could see the other, but all went through the exercises with clocklike regularity.

The water supply for the prison was from five artesian wells giving 500 litres of water per minute.

The plumbing system for sewerage and drainage was modern and of approved pattern. Toilets were

flushed automatically.

The delegates were also shown the hospital, autopsy room, schools, work shops where shoes were made, carpentry and cabinet work done, palm leaf weaving, etc. Other points of interest shown were the bakery, kitchens, mess halls, steam laundry, electric lighting plant, etc.

At the disinfecting plant all disinfecting apparatus were displayed and shown by the corps of disinfectors, all of whom were uniformed. The following is a list of apparatus shown:

Formaldehyde vaporizing apparatus; vacuum apparatus, a form of hand pump and tank provided with a hose and an attachment for going over carpets, walls, etc., for taking up dust, by which process, it was stated, sixty-six per cent. of microorganisms were removed; bichloride pump and sprays; apparatus for the safe production of hydrocyanic acid gas; a portable steam chamber; wagon, zinc lined, for bringing infected clothing to the central plant, etc.

The central plant was furnished with two chambers of the Fernand Dehaitre type, made in Paris. One was for washing and boiling clothing, the other for steam disinfection at high pressure. A partition wall completely separated the two ends of this apparatus. One room had its special entrance for receiving infected clothing to be placed into the chamber at that end. The clothing when disinfected was removed at the other end of the chamber, which

opened into a room on the other side of the partition

Rabies department. The laboratory rooms for the production of virus and for the treatment of hydro-

phobia were then shown us.

For the production of virus the first inoculation was made from a brain brought from Paris in January, 1888; animal inoculations had been made since that time. The virus caused death of the inoculated rabbit on the seventh day.

A subdural inoculation into a rabbit was made at the time of the visit; an autopsy on a rabbit which had just died was made, removing the whole spinal cord and showing the technique for making the preparations.

Since April, 1888, to November 30, 1907, the following number of persons were treated:

rabies 518 Persons inoculated by animals probably rabitic Persons inoculated by animals suspicious of rabies 3,457

Persons inoculated by animals known to have

Total A register giving a history and other data of each individual treated was kept. There were twentyeight persons under treatment at the time of the visit, Dcember 4, 1907.

Water supply for Mexico City. There were several sources of supply, but a new one now under construction from Xochimilco was visited.

The first point seen was the site for four reservoirs. The reservoirs were constructed of cement, with cement columns to support the cover, which was to be topped with a grass lawn.

A cement tunnel encasing a stout wire net tunnel of expanded metal would be the conduit from the source of water supply located near Xochimilco.

Sewerage system. The sewer flushing pump station was visited. A map showing the sewer mains throughout the city and their termination into the

Grand Drainage Canal was explained.

The pumping station had steam and electric pumps for forcing water, 1,500 litres per second, through the sewers for the purpose of flushing them,

which was made a daily service.

The sewerage system was that known as the "combined water system," comprising 1, sewers for collecting house refuse and rain water; 2, flushing pipes and pumping station; 3, main collecting sewers which discharged all waters into the Grand Drainage Canal and thence out of the valley through Tesquisquiac tunnel.

The sewer pipes were so arranged as to admit of thorough flushing, there being no blind ends where stagnant water could remain. Ventilation was provided and sewers made accessible through manholes.

The General Hospital. This hospital comprises sixty-four buildings and was constructed on the pavilion plan. Thirty-two buildings had hospital wards; seventeen were for general service, as fol-lows: Porters' house, office of administration, residence for physicians, disinfection station, electric plant, machinery, stables and carriage house, hydrotherapeutics gymnasium and electrotherapy, operating rooms, and morgue; ten other buildings were for watchmen, and five for attendants to the various infectious wards.

There was to be a school for nurses under the

direction of two German trained nurses.

Visit to the new suburbs, Juarez, Roma, and Condesa. These suburbs were real estate projects, and the plans for starting such suburb must be approved by the government. Previous to permitting the erection of any buildings, streets must be laid out and paved with asphalt, sidewalks of cement, sewer and water pipes laid, and lighting provided.

THE RESISTANT BREATHING TRACT. By W. H. FITZGERALD, M. D.,

Hartford, Conn.,

Laryngologist to St. Francis's 'Hospital.

The father of a large family, most of whom I was treating for ear and throat affections, once asked me: "Why is it my children are so afflicted?" told him it was largely due to the fact that his children had been mouth breathers; to which he replied: "Nonsense, I have been a mouth breather more than forty years and I am perfectly sound." I noted evidences of a familiar difficulty in his breathing, distinctly audible across a large room, and asked him if he had not suffered from asthma, he answered: "Yes, for years to a slight extent." I convinced him that was a result of mouth breathing his children would avoid now that their nasal organs were in form, if taking my advice they breathed at all times as Nature intends they should.

Mouth breathing is ever sure to affect, to a greater or less extent, at least one section of the breathing and accessory tracts, and so it is when one is asked why it is that all mouth breathers are not afflicted with pulmonary tuberculosis, one must answer that some are more susceptible in that particular section of the breathing tract than others; that the mouth breather never goes throughout life

with an absolutely normal breathing tract; that the lungs are only a part of the breathing tract; that some section or sections of this tract must, sooner or later, become affected; it may be but one nostril or one ear, or a section of the pharynx or larynx, or a section of but one lung; it may be the entire breathing and accessory tracts, and failure to breathe as Nature intends we should is largely responsible for these conditions.

If in our crusade against pulmonary tuberculosis we place normal breathing at the top of the list of means of resistance, instead of at the bottom, where it is usually found, if not neglected altogether, and this, I am sorry to see, is too often the case, we will soon stamp out pulmonary tubercu-

We are told that the white plague is to be a thing of the past, and doubtless it will be, but at the rate we are now going and with the present inadequate methods of procedure even the youngest of us will never witness its demise. I have often wondered since the fight against this much dreaded disease commenced how many have been its victims who might now be enjoying good health had they known, that for the preservation of health, normal breathing is at least one of the most important of Nature's laws.

I maintain, without fear of intelligent contradiction, that faulty breathing is responsible for the vast majority of affections of the breathing and accessory tracts, that to breathe through the nose is the only correct way to breathe, and this if properly followed will make not only the breathing and accessory tracts, but the ecenomy generally, resistant

to a degree otherwise impossible.

Normal breathing alone is not any more a panacea for all ills than is a well regulated digestive apparatus or any other of Nature's requisites to good health, but if normal breathing in the future is not reckoned with to a greater extent than it is to-day, we had best throw the idea of stamping out

the white plague to the winds.

Parents must understand that their child to enjoy perfect health must sleep with his mouth closed, must breathe through the nose at all times; and what is true in this regard for the child is true for the parents. If one cannot breathe through the nose, the difficulty, whatever it may be, must be remedied, and nasal breathing must then be insisted upon, the patient wearing the plaster mouth guard as I have advised, at least during sleep, taking breathing exercises, etc., as recommended, until he becomes a normal breather.

If parents would be as attentive to the breathing tract of the child as they are already to his bowels, we would in a very few years see the last of pulmonary tuberculosis as well as most other diseases, and physicians if they will give this very important suggestion a few moments' consideration will surely appreciate it, and parents generally after a little

instruction will appreciate it also.

As I have suggested, I am not advocating nasal breathing as a panacea for all ills, but as a valuable adjunct to that end. We all realize that it would be quite impossible for man to enjoy perfect health if he were not daily mindful of his bowels, for instance, or if he were not equally careful concerning indiscretions in eating or drinking, or, again, if he neglected to protect himself with proper clothing against the inclemencies of the weather, or resisted fresh air and sunshine, etc., etc. It is the duty of all medical practitioners, whatever their field in medicine, to consider these essentials and to impress their patients with the importance for health's sake, of ever living up to them, but in most of my papers and letters these facts are taken for granted, and I have purposely written little other than the necessity of breathing normally.

Concerning the breathing tract, what should parents further understand? They should understand that the nose, as well as being an olfactory organ, is a filter, that it heats or cools, as the case may be, inspired air; that the nose secretes several ounces of fluid daily; that this fluid, which is germicidal, evaporates into the air respired, assuring a moist and resistant breathing tract, provided

the individual is not a mouth breather.

If through some indiscretion, as perhaps the continuous wearing of damp clothing, especially stockings, or neglect of the bowels, any section of the breathing tract of the nasal breather becomes congested, it will be found that the condition responds much more readily to treatment than it would in the case of the mouth breather similarly affected.

Parents should further understand that it is not possible to properly aerate the lungs other than with air inspired through the nose, that one can expand his chest from one half to one and one half inches more inspiring through the nose than through the mouth, that the breathing capacity is necessarily increased, also the fact that chapped and fissured lips are usually caused by alternating currents of cold and warm air respired through the mouth; and that infected teeth and gums are usually those which have become dry due to mouth breathing. Practically all infections of the mouth and pharynx are confined to those who breathe to a greater or less extent through the mouth. That a closed mouth is ever moist should be remembered always; whether the secretions of the mouth are normal or not depends upon the general conditions of the breathing and digestive tracts.

When we reflect, therefore, that faulty breathing is largely responsible as well for nearly all so called catarrhal conditions of the upper breathing tract, for the majority of middle ear difficulties, for a large percentage of eye trouble, to say nothing of innumerable affections of the rest of the economy, it occurs to me that we should warn, not only the medical profession, whom we have repeatedly warned during the past seven years, but also nonmedical members of society engaged in one of the most commendable of projects, namely, the attempted obliteration of the white plague—that they are not doing their full duty unless they endeavor to make absolute nasal breathing a universal practice. In so doing they are not only fighting pulmonary tuberculosis along rational lines, but practically every other disease man is heir to as well.

Whether or not the child is a nasal breather is one of the very first observations a teacher should make on the first appearance of the little one at school. If he breathes with difficulty or is unable to breathe at all, appropriate treatment should be concluded before he is received into the school. Children already in advanced grades who are in like manner afflicted should be appropriately treated and instructed, and this same advice holds good in the case of teachers, who must, in the not very distant future, practise what they will be asked to teach, namely, normal breathing.

The elocution or vocal teacher who tells one it is not possible for a pupil to take practically every breath through the nose should be convinced that intelligent nasal treatment and instruction will

make it possible.

When this fact is generally appreciated the gasping-performance so common to-day of numerous so called singers and elocutionists will be relegated to the past. The vocalist or public speaker will through normal breathing protect his breathing apparatus and preserve his voice as he would otherwise be unable to do so.

904 MAIN STREET.

A CASE OF GENERALIZED XANTHOMA PLANUM IN A CHILD.

By Robert Abrahams, M. D., New York.

Two features make my case unique in dermatological affections: First, the age of the patient; second, the universal distribution of the lesion.

CASE.—The child, Harry K., three and a half years old, of Russian parents and born in New York City, was brought to the skin service of the Gouverneur Hospital Dispensary by my assistant, Dr. Louis Bernstein, in the month of May, 1908. There was nothing of importance in

the family history.

The child's history was as follows: At the age of two and a half years he had scarlet fever. During the period of desquamation, to quote the boy's father, "small, pin point pimples appeared here and there over the body. The pimples after awhile flattened and became yellow. In a short time more of the same kind appeared and kept on coming," until the day of presentation the eruption covered every part of the body except the scalp and mucous membranes. The chin, neck, upper and lower extremities, both extensor and flexor surfaces, thorax, abdomen, groins, and gluteal region, including the cleft of the nates, were the seat of hundreds of small and large citron yellow patches, some flat, some slightly raised at the edges, smooth to the touch, and all typical of xanthoma planum, as seen in adults on the upper and lower eyelids. The eyelids and upper parts of both cheeks were free from the lesion, contrary to the usual distribution of the disease. The largest of the patches were found around the nates and anus. A few good sized ones were to be seen on the deltoids, the largest patch is the size of a cent and the smallest that of a lentil. There were no subjective symptoms. There were no constitutional or local disturbances at the time of appearance of the xanthoma. The urine was repeatedly examined with negative results. The child was well nourished and was in the best of health.

The microscopical examination of the skin is yet to be made, as at present the parents are opposed to an "operation."

Some day I may succeed in adding the pathological findings to this clinical report.

It may be stated in conclusion that the child was presented to the Manhattan Dermatological Society October 2d with complete unanimity of diagnosis.

43 St. Mark's Place.

Our Beaders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXIX.—How do you treat sick headache? (Closed

October 15, 1908.)

Cather 16, 1908.)

due not later than December 15, 1908.)
Whoever answers one of these questions in the manner receive a prize of \$25. No importance whatever will be at-tached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish.

address, onto or which we must be at thority to publish.
All papers contributed become the property of the Jounnal.
Our readers are asked to suggest topics for discussion.
The prize of \$25 for the best essay submitted in answer to question LXXVIII has been awarded to Dr. Charles
Floyd Burrows, of Syracuse, N. Y., whose article appeared

on page 842.

PRIZE QUESTION LXXVIII.

THE TREATMENT OF ACUTE CORYZA.

(Continued from page 895.)

Dr. Robert E. Coughlin, of Brooklyn, N. Y., observes:

Improper elimination appears to be the cause of acute coryza, as near as one can judge from the fact that preceding the attack there is generally a history of overeating, constipation, or irregular action of the bowels, inactivity of the skin, with a little overactivity of the kidneys showing the increased strain put upon them.

The treatment I advocate in this condition resolves itself into forced exercise, sweating, and the

cold plunge.

To order my form of treatment the patient of necessity must be free from any organic or constitutional disease.

No local treatment is required, as it is my experience that local treatment only throws the inflammation down into the larynx or the bronchial tubes.

When the first symptoms are noticed, which generally occurs the first thing in the morning on arising after a night of unrefreshing sleep, one should advise eating very sparingly. Milk, bread, and the breakfast foods will be found sufficient. Tell your patient he must devote one day to the treatment and make up his mind to undergo rather heroic means without the use of drugs. In the first place he must dress himself as warmly as possible in good weather or the reverse. Heavy underclothes; sweater; heavy soled shoes (preferably old and with rubber heels); well fitting socks or stockings without seams; a warm cap or hat; heavy suit of clothes, and if in winter a short overcoat. A five mile run and walk is in order, walking along the sidewalk and running

across the streets. This distance should be covered in one hour's time. A light stick or cane will assist in giving the proper swing to the walk, which is The walking should be at top speed. One will find that a mile in twelve minutes may be averaged without extreme fatigue. The slowest mile will probably be the first and the best the last. city blocks are equal to a mile, so one can figure on a city map just the distance to be covered. The destination should be a turkish bath in winter and a bathing beach during the months of June, July, August, September, October, and possibly a part of November. The patient should remain from a half to one hour in the hot room of the Turkish bath with the temperature 145° F. He should drink just enough water to quench his thirst and no more. After shampoo he must take a cold shower and plunge, alternating between the steam room and the cold plunge, 60° F. Then he should finish his bath with a cold shower as cold as the water runs, and should cool off in the cooling room and dress very slowly. He must be careful not to perspire any more the rest of the day. Coming away from the bath he should walk a few blocks and remain indoors in an even temperature of about 72° F for the rest of the day. Upon awaking the following morning the patient will feel refreshed after a night of very refreshing sleep. There will be no laryngitis or bron-chitis present. The bowels will act better for this treatment and no medicine, as a rule, will be required. Less urine will be passed for a few days and a general feeling of well being will be present. The most important part of the treatment, I believe, is the forced exercise, as the Turkish bath itself will not accomplish the same result. The exercise with the cold plunge either in the sea or ordinary bathtub will answer very well, but the best treatment is the combined light diet, forced exercise, Turkish bath, and the cold plunge or shower. No acute coryza should last over one day when Nature's treatment is instituted.

The trouble with this form of treatment (and it is the only one) is that it is difficult to make our patients understand that it is not necessary to take drugs. They do like to drug, and we as physicians are to blame for this to a great extent. At times it is a little trying to get them to take the exercise, but this is less trouble than the dispensing with drugs. A placebo may be given at times, but it is hardly necessary when once the patient's confidence in the treatment is established. The easy treatment, such as hot drinks, drugs internally and locally, hot bath upon going to bed, etc., appeal to many patients, but the one word elimination should ever be in our mind in the treatment of this annoying ailment.

Dr. Walter G. Heriman, of Brooklyn, N. Y., remarks

The treatment of this condition, better called a symptom, is both prophylactic and active. As it is generally a terminal symptom following an infection of the nasal or adjacent passages, treatment to be successful must be instituted early, that is, before the mucous passages have become occluded.

Under prophylactic measures may be mentioned the wearing of silk or woolen underclothing during the entire year, especially in a climate like that of

New York city, as witness the last week in August of this year. Another factor which merits recognition is the constant irritation of the nasal passages by steam radiators, found in poorly ventilated houses and offices. This condition is best met by the daily application of an oily spray containing either oil of eucalyptus or menthol. Keeping the skin active by baths, etc., and sleeping with an open window at night should be encouraged; and above all, protective footwear should always be insisted upon, especially in persons easily chilled or afflicted with some form of nasal catarrh. Should there be any nasal defects present, such as a deflected sæptum, spurs, hypertrophied turbinates, adenoids, or polypi, they should receive appropriate surgical treatment. Under active treatment the tincture of aconite in gtts. 1/2 doses every two hours, repeated five to six times, will frequently relieve or moderate the congestion, thereby shortening the duration of the attack; to obtain the best results it must be given early. Some physicians prefer tincture of veratrum viride, but I think the former safer and equally efficient. either of the foregoing may be added the spirit of nitre, or the solution of ammonium acetate, thereby improving diaphoresis. The well known Dover's powder, gr. x, and quinine sulphate, gr. v, may be given at bedtime, followed by a warm drink (lemonade, whiskey, etc., according to the individual's particular scruples); this applies especially to business men who will not remain at home, and followed next day by a capsule containing acetphenetidin, gr. vii; monobromated camphor, gr. i; and quinine sulphate, gr. i; every three hours. Should the fulness over the forehead be severe, the quinine may be omitted. Should the patient be greatly annoyed in breathing, an application of adrenalin or cocaine to the nasal mucosa will often be of service.

The nasal chambers should be frequently sprayed with either Dobell's or Seiler's solution, followed by an oily spray of oil of eucalyptus and menthol, the latter being soothing and cooling, for which the

patient is often very grateful.

It must be remembered that the upper lip is frequently irritated by the nasal discharge; it is therefore advisable to suggest the application of cacao butter to the same. Steam inhalations of compound tincture of benzoin or oil of eucalyptus, a drachm of either to a kettle of hot boiling water, covering the head, save the face, will often relieve the tension markedly.

A saline purge should always be given, as it tends to drain the body fluids away from the congested area. Turkish baths may be suggested, provided there is no cardiac contraindication; while footbaths

should always be insisted upon.

As this condition is not always limited to the nose, the throat and the bronchial tubes may often be simultaneously involved; for the former the various gargles containing either potassium chlorate, boracic acid, fluid extract of hamammelis, etc., will often prove valuable. While the bronchitis is best treated by the relaxing expectorants in the early stage, ammonium chloride, syrup of ipecac, syrup of squills, substituting the stimulating expectorants in the later stages, the secretion being profuse, ammonium carbonate, syrup of senega, etc.

Many of these cases the physician never sees, in

fact the majority, the laity being bound by time honored family traditions to play the physician, bringing into requisition that great pacifier, the family medicine chest.

Dr. Lester R. Mellor, of Syracuse, N. Y., states:

As coryza is a congested condition of the Schneiderian membrane associated with more or less congestion of the mucous membrane of adjacent and contiguous structures and is therefore purely a vasomotor change in the mucosa in which there is dilatation of the superficial arterioles and capillaries, the ideal treatment would be to give such drugs, internally and locally, as would tend to reduce congestion and put the mucosa in a normal state. General treatment consists in so reguating the circulation as to diminish blood supply to this part by causing a general superficial dilatation of the capillaries of the body. In other words, an attempt to overcome the local vasomotor conditions. This is accomplished by the use of aconite in M 1/2 doses every one half hour for five to six doses, followed at bedtime by a hot mustard footbath or general bath, hot lemonade, and Dover's powders, grs. x. Patient is to cover up well to encourage a free diaphoresis, as this is most beneficial. This active treatment will terminate many beginning coryzas, but is of little use if the condition has existed for any length of time. Nevertheless, I have seen it do some good even in these

Locally the following will be found most useful: I, Cleansing nasal cavities with some alkaline solution. 2, Spraying cavities with adrenalin I in I0,000 in saline solution. This contracts the capillaries, blanches the surface, and lessens the discharge. As this action is but temporary, I use an oil spray composed of camphor and menthol, āā grs. x; in benzoinol, āi; sprayed on to a nasal mucosa. This gives membrane a coating of oil, the camphor and menthol exerts a cooling, anæsthetic effect upon the turgescent membrane, lessens the discharge, and keeps the nasal cavity free.

Dr. Max Baff, of Worcester, Mass., says:

Acute coryza is an inflammatory affection of the upper part of the air passages resulting from catching "cold," and is attended by a discharge from the nostrils and congestion of the mucous membranes of the eyes, nose, and throat.

The attack usually commences shortly after catching cold, more particularly after exposure to dampness and cold, and begins with a feeling of indisposition, sense of cold down the back or general chilliness, sense of weight in the forehead, headache, especially frontal, and drying of the nares and throat. This is what I call the stage of congestion, and it is during this time that we are sometimes able to abort the attack.

Treatment during this stage of the disease is to endeavor to remove the congestion from the head, and therefore our aim must be to cause a congestion of some other part of the body and thus remove the blood from the head. Hence have the patient place the lower extremities up to the knees in water, as hot as can be borne, containing a quantity of powdered mustard (about an ounce to each gallon of water) and to keep them in the water for at least

one hour—until the feet and legs assume a scarlet color.

An adjunct to this treatment in this stage is to secure additional congestion of some other part of the body, and this is easily obtained by having the patient take several glasses of very hot lemonade while soaking the feet as above described, and to take a saline laxative just before retiring.

The stage of congestion, if not aborted, will in a few hours be followed by the stage of mucous secre-

tion

In this stage there is present a discharge from one or both nostrils, watering of the eyes, pains in the face, soreness of the throat, and sometimes hoarseness, together with a dull aching pain all over the body. The treatment during this stage is mainly symptomatic. The patient must remain in the house till the disease entirely disappears, for complications are very likely to occur in this stage.

A powder containing acetphenetidin, gr. v, and calomel, gr. i, with or without sugar of milk, may be given every two hours until six are taken. This is the dose for an adult who has a sound heart.

The running of the nose is the chief discomfort that brings the patient to the doctor, and therefore it is up to the physician to combat this distressing This can best be accomplished symptom at once. by local treatment. Many doctors use snuffs containing morphine and bismuth subnitrate. I do not believe in snuffs, because I think, and also find, that the snuff will lie on top of the rapidly secreted mucus and not conme in contact with the mucous membrane. Therefore I recommend and use fluids, and the best solution to apply locally to the nostrils by a nebulizer is a two per cent. solution of cocaine. The frequency of the applications will depend upon the amount of discharge and nasal occlusion present. The cocaine instantly relieves the "blocking up" of the nares caused by the swollen mucous membrane, by removing the congestion, thus stops the secretion of mucus, and makes the breathing normal.

Atropine given internally will dry up the secretions of the nose, eyes, and throat, but then the patient will suffer from dryness of the larynx and bronchi and from constipation, etc.; in other words, it does as much harm as it does good. Camphor, menthol, opium, and the like are all very nice, theo-

retically, but practically do no good.

Dr. George Stevenson, of New York, writes:

A patient in the early stage of an acute coryza should take a hot foot bath, with mustard in it. He should go to bed, take two grains of calomel, in divided doses; Dover's powder, 5 or 10 grains, followed by a hot lemonade. The Dover's powder may be repeated in four hours if the patient is awake. The patient should be kept well covered, there should be no draught in the room, and the temperature of the well ventilated room should be kept at about 65° F. In the morning the patient should take one half bottle of magnesium citrate. This will often cure the patient in this stage.

During a later stage of an acute coryza, when the mucous membrane and tissues of the nose are swollen, soggy, and ædematous with exudation, the office practice is to apply a four per cent. solution of co-

caine to the nostrils by means of an atomizer, followed in five minutes by a cleansing wash, used in an atomizer, such as a diluted Dobell's solution, one part to five parts warm water. This should be followed by a spray containing menthol, gr. viii; camphor, gr. v; petrolatum fl, 3i. At home the patient may use the dilute Dobell's solution, followed by the spray of menthol, camphor, and petrolatum, every four hours.

Internally the patient should take a tablet con-

taining:

| 3 | Atropine sulphate,,gr. 1/600; |
|----|--------------------------------|
| | Strychnine sulphate gr 1, 240; |
| | Arsenous acid,gr. 1/240 |
| | Morphine sulphate,gr. 1/100; |
| | Quinine sulphate,gr. 1/10; |
| | Powdered camphor,gr. 1/4. |
| М. | S. Every four hours. |

If the patient comes for treatment having a profuse serous or mucopurulent discharge, the treatment should be cleansing and stimulating to the mucous membrane, and the patient should be given 2 to 4 grains of quinine sulphate three times a day.

The prophylaxis consists in avoiding climatic inequalities; dressing too warmly; having room excessively hot or cold; chest protectors, mufflers, etc.;

heavy overshoes.

If patient has polypi, deformed sæptum, or any form of obstruction to free nasal breathing, this must be corrected by proper surgical measures.

Dr. Samuel Moskowitz, of New York, remarks:

Acute coryza, otherwise known as acute rhinitis or acute cold in the head, is one of the most common conditions we see, not so much as medical men, but more as laymen. Everybody has it or has had it, but very few go to a physician for it.

At the onset of the trouble it begins by stuffiness of the nose, due to tumescence of the mucous membrane; then the best thing I have found in my practice is to take the same evening a hot drink, either tea or lemonade, sweetened to the taste, and a pow-

der containing:

When the bowels are irregular add to this prescription I grain of calomel. This usually causes a good deal of perspiration, and it is advisable to tell the patient to cover himself well. This is to be repeated the next night.

For its local action I find an excellent remedy in compound tincture of benzoin, 5i, to six glasses of boiling water, the steam to be inhaled three times daily. In a good many cases the powder prescribed

has acted almost specifically.

If after three days of this treatment there is no relief, which is quite uncommon except in those cases in which the patient is out and about, being exposed to changes in temperature, I prescribe:

| \mathbf{R} | Pulv. camphoræ,gr. ½; |
|--------------|--------------------------------|
| | Ext. beliadonnæ,gr. 12; |
| | Pulv. ipecacæ et opii,gr. iii; |
| | Quininæ sulphatis,gr. i. |
| | Fnt. chart. No. xx in caps. |
| Sic | One every three house |

oig. One every affect hours.

This relieves the extreme rhinorrhœa and the watering eyes, and also the slight cough which there may be.

As soon as the patient gets relief from the discharge from the nose, the capsules may be then taken three times or twice daily as indicated.

In all cases, where practicable, the patient should

be indoors and warmly dressed.

In the stubborn cases and those cases in which I elicit a previous history of rheumatism, I combine with the capsules salicin, gr. v to x.

Prophylaxis, after attack, is to see whether the patient has hypertrophied turbinates, sinus disease, adenoids, amygdalitis, etc., and have these treated

properly.

Sprays in the nose I have found useless, except where sleep is impossible on account of the stuffiness in the nose. I prescribe here a solution of adrenalin chloride, I in 5,000, to be used in an atomizer, at night. If we have bodily rest in these cases we accomplish a great deal.

(To be concluded.)

Therapeutical Rotes.

Scopolamine-Morphine and Chloroform Anæsthesia.—In Folia Therapeutica for October, 1908, Dr. H. Macnaughton Jones describes his method of administering scopolamine-morphine and chloroform to obtain anæsthesia, as follows: On the night before the operation (which takes place at 9:30 next morning, 1/100 grain of scopolamine and 1/6 grain of morphine are injected the last thing. On the morning of the operation this injection is repeated at 7 o'clock, after the bowel has been freely and thoroughly emptied. At 8:30 a. m. an injection of 1/100 grain of atropine and from 1/36 grain to 1/60 grain of strychnine is given; sometimes the atropine is omitted. The chloroform is administered by the Vernon Harcourt regulator.

Blackening of the Tongue by Hydrogen Dioxide.—Attention has been directed by M. L. Bizard (Les Nouveaux remèdes; The Lancet, October 31, 1908) to the phenomenon of black tongue as caused by the use of hydrogen dioxide as a mouth wash. He cites the case of a smoker who used a mouth wash daily for eight days consisting of a tablespoonful of hydrogen dioxide in half a glassful of warm water. A marked blackening was then found on the dorsal surface of the tongue, but on ceasing to use the mouth wash the coloration disappeared in a few days. The patient was in good health, except that an examination of the tongue showed that the lingual papillæ were hypertrophied. The same effect was produced in the case of two patients undergoing mercurial treatment by the injection of grey oil, who were in the habit of rinsing the mouth with hydrogen dioxide. It was at first thought that the color was due to the action of the hydrogen dioxide on the mercurial saliva, but hydrogen dioxide alone, as has been shown, may produce the same effect. It is remarked by the editor of The Lancet that, as hydrogen dioxide has now come into general use as a mouth wash, these observations are of great interest and value. Apart from the blackening of the tongue, which may result from too free a use of this preparation, the question arises whether the general em-

ployment of antiseptic mouth washes and dentifrices is advisable in healthy persons. Where decay is known to exist there is no doubt that a moderate use of antiseptic agents tends to prevent the spread of the invading organisms. But when the mouth is in a healthy condition it would seem preferable to rely upon cleanliness rather than on antiseptics. The bacterial flora of the mouth may contain organisms that naturally tend to preserve it in a healthy condition, but the continued use of antiseptics is calculated to destroy favorable as well as harmful bacteria.

The Treatment of Gout.—The specific remedy for painful gout is colchicum. As an application to the painful parts the following liniment on warm cotton is recommended in *La Clinique* for October 23, 1908:

The liniment should be mixed with an equal quantity of hot water and applied on absorbent cotton to the affected part, the whole being covered with oiled silk. The application is renewed every four hours.

On the second day of the attack the following mixture is prescribed for internal use:

| \mathbf{R} | Tincture | of | colchicum flowers, | |
|--------------|----------|----|---------------------|--|
| | | | digitalis, | |
| | | | fraxinus ornus, | |
| | | | cinchona, | |
| | | | belladonna, | |
| | inchure | of | olycyrrhizingtt. xx | |

M. et Sig.: Add one teaspoonful to four tablespoonfuls of water, and take one teaspoonful of the mixture every hour.

The dose should be diminished as the condition of the patient improves, and the medicine should be stopped entirely by the time sweating becomes profuse and diarrhoea sets in.

Treatment of Ulcerated Sore Throat.—Moure (La Clinique, September II, 1908) employs the following as a gargle, a teaspoonful of the solution being added to a glassful of lukewarm water:

| \mathbf{R} | Antipyrine, | | | |
|--------------|-------------|------|------|------------|
| | Resorcin, . | | | 3iss; |
| | Sodium be | | | |
| 3.5 | Glycerin, . | | | 3vi11. |

The following is recommended for use in an atomizer:

| \mathbb{R} | Morphine hydrochloride,gr. 3/4 to gr. iii; |
|--------------|--|
| | Phenol crystals,gr. viiss; |
| | Cocaine hydrochloride,gr. viss to gr. xv; |
| | Menthol,gr. xv; |
| | Glycerin, |
| | Distilled water, |
| Annua A | |

Dissolve the menthol in a small portion of alcohol, filter, and add the remaining ingredients.

Another prescription for the less painful forms of ulcerated sore throat is the following:

| 1≩ | Cocaine hydrochloride,gr. vi | iiss ; |
|----|------------------------------|--------|
| | Antipyrine, | |
| | Sodium bromide, | |
| | Spirit of peppermint, | cxv; |
| | Glycerin, | iss; |
| | Distilled water | ixvi. |

The spray should be administered three or four times a day before meals.

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NEW YORK, SATURDAY, NOVEMBER 14, 1908.

PROFESSOR MACCALLUM'S HARVEY LECTURE.

A number of commonly accepted ideas regarding fever are apparently without scientific foundation. according to Professor W. G. MacCallum. there is no greatly increased heat production, not nearly so much, for example, as follows active muscular work. And there is no considerable burning of the tissues. One of the main factors in the production of fever appears to be a disturbance in heat regulation, though there is also a moderate increase in oxidation processes and therefore in heat production.

It was astonishing to learn from Professor Ewing, who introduced the lecturer, that this was practically the first scientific presentation of the nature of fever made in New York since 1886, when Professor Welch took that as the subject of his Cartwright lecture. The very definition of the term fever is one of great difficulty, despite the fact that thousands of physicians use the word correctly many times daily. According to MacCallum, fever may be considered to be a reaction to a variety of injuries, characterized by a moderate increase in heat production, by changes in temperature regulation, and by changes in metabolism.

A study of fever at once brings us face to face with the interesting fact that the temperature of birds and mammals is almost independent of their environment, and is kept fairly constant. When the enormous difference which often exists between the

animal temperature and that of the environment is considered, we must marvel at the wonderful mechanism by which this constancy is maintained. There seems to be some general control of this function in the brain, although, according to MacCallum, the thermoregulating centre is not yet clearly established. It is not known whether the centre is affected directly by the temperature of the blood which bathes it, or whether it merely responds to nerve impulses from the periphery. Experiments on animals indicate that certain areas of the anterior portion of the corpus striatum lodge a heat centre.

In speaking of the normal temperature of animals, the lecturer spoke of the regular daily variation. It is astonishing to learn that in crows the fluctuation may amount to as much as 3° F. Some years ago this phase of the subject was studied by Benedict, who found regular daily variations also in man, though not so large as that just mentioned. He also found that the variations occurred at the same times, even when the daily routine of the persons was inverted so that they worked at night and slept by day. Even though the amount may not be very great, it is of the highest interest to know the source of the increased heat production. This is an intricate problem, and it is still not entirely solved. According to MacCallum, the main source first drawn upon is the stored carbohydrate (the glycogen), then the fat is used, and finally the proteid of the tissues. Experiments have also shown that the administration of carbohydrates in considerable quantities has a sparing action on the tissues. Gelatin appears to have a similar effect.

Certain figures presented by the lecturer regarding the amount of heat production by man under various conditions give a good idea of the need of food in fever. Thus, the amount of heat produced by an ordinary man, kept perfectly quiet, may be represented by twenty-one grammes of carbon dioxide hourly; it is higher after a meal, and highest after strong muscular exertion, amounting to 125 grammes or more. In a number of febrile conditions the figures were as follows: In erysipelas, thirty-six grammes in an hour; in pneumonia, thirtythree grammes; and in typhoid fever, twenty-one grammes. This would appear to bear out Lewis's contention that in typhoid fever the amount of food required is extremely small, for example, not much more than a pint of milk a day.

An interesting suggestion, though not a novel one, made by the lecturer was to the effect that the rise of temperature in the body had some beneficent action, affecting, for example, a destruction of the toxines producing the fever. On the other hand, nothing was said of the probable injurious effect produced by the temperature on various organs. We know that a cold sponge bath profoundly alters the mental condition of our patients in typhoid fever or pneumonia. Yet it is improbable that the sponging has any direct influence on the poisoning. It would have been interesting to learn what effect hydrotherapy and antipyretic drugs have on the febrile process. We know what happens to the temperature, but how about the other changes, the heat production, regulation, metabolism, etc.?

In studying the cause of aseptic fever, for instance, after severe surgical operations, Arthur Mandel found that there was a considerable increase in the excretion of the alloxuric bases, and that this increase quite generally paralleled the course of the temperature. At the same time there is a diminution in the excretion of uric acid, so that he rightly considers that there is an interference with the oxidative powers of the cells. That these xanthin bases were really productive of fever was shown by administering strong decoctions of coffee, which, of course, contained caffeine, trimethylxanthin. This produced a rise of temperature to 100.3°, which persisted for several hours. it has been shown that tuberculous patients may excrete considerably increased amounts of the purin bodies, Mandel suggests that these liberated purin bases may have a decided influence on the febrile temperatures observed in tuberculous disease. Is it possible that the outdoor life effects a more complete oxidation of these bodies, and thus reduces the amount of poisoning of the system?

Altogether, the speaker presented a great mass of data, most of which were exceedingly technical and not easily followed by his auditors. If we do not misunderstand the objects of these Harvey lectures, the results of the latest achievements in various departments of science are to be presented to physicians in broad outlines readily grasped. Medicine has grown to such vast proportions that even intelligent physicians cannot hope to do more than secure a clear general idea of what is going on in other departments than their own.

MEDICAL PRACTICE AND THE CHURCH.

A notable discussion has appeared recently in one of the newspapers, the New York Times, on the merits of the quasimedical activity of the Rev. Dr. Worcester, of Boston, and the Rev. Dr. Batten, of New York, each the rector of an Episcopal church. Ordinarily we deprecate the discussion of medical matters in the newspapers, for the medical contributors are apt to speak "over the heads" of general readers; and the lay commentators are prone to speak with an assurance born of profound ignorance. In this instance, however, the subject is

one that can readily be understood by educated persons who have not had a medical training, and we look upon it as eminently fitting that its consideration should have been taken up in a popular publication.

Up to the present time, the chief contributors to the discussion have been Dr. Joseph Collins, Dr. I. Leonard Corning, and Dr. M. Allen Starr. All these gentlemen are professed neurologists, and it is particularly to the neurological point of the medical circle that the Emmanuel Church "movement" is tangent. Dr. Collins opened the discussion in a letter to the editor of the Times. The tenor of Dr. Collins's letter was deprecatory of the "movement." It is impossible to deny the truth of the greater part of Dr. Collins's contentions, but we may rise above their pessimism. In particular, it may be remarked that Dr. Collins underrates the activity of the Episcopal Church in the establishment of hospitals and kindred institutions for the relief of the sick and injured in New York; St. Bartholomew's Clinic is by no means the sole or even the chief manifestation of that activity—witness, to mention only one, our magnificent St. Luke's Hospital. He appears also to ignore the immense medical work done under the auspices of the Church of Rome, the Presbyterian Church, the Methodist Church, and other Christian bodies, besides the Jews in their religious rather than in their racial capacity.

Dr. Corning's contribution is in the shape of an interview. In the main he sustains Dr. Collins's contentions, but with admirable conciseness of expression. He also points out forcibly some of the evils which may result from the movement, drawing his arguments largely from the consequences of similar movements in the past. Dr. Starr's letter rather favors the movement, though with such reservations that it appears to us that he has struck the juste milieu. As regards our own impression, we do not see in the movement anything subversive of the prerogatives of medical men in their daily work; the ecclesiastics, as represented by Dr. Worcester and Dr. Batten, seem to us to stand ready to cooperate with the medical profession, and not in the least disposed to antagonize it. As we understand them, the reverend gentlemen are disposed to the utmost to "render unto Cæsar the things that are Cæsar's."

THE PRIEST AND THE DOCTOR.

In pursuance of the subject dealt with in the preceding article, one of the wardens of St. Mark's Church, Mr. John Brooks Leavitt, in a letter published in the *New York Times* for November 9th, states that the medical profession and the clergy have "drifted into such antagonism that doctor and parson too often glare at each other over a dying

bedside, each regarding the other as an intruder, the clergyman thinking the doctor to be godless, and the latter looking on the former as a simpleton." This statement cannot have been founded on any very great array of facts, and surely, whatever an unregenerate doctor might do, a clergyman would refrain from glaring, though Mr. Leavitt charges the glaring to the two impartially.

What is the truth of the matter? To those who may be ready to admit that Warden Leavitt depicts a condition sufficiently general to give rise to serious concern we commend a sermon entitled The Relations of the Priest and the Physician, by the Rev. Arthur B. Conger, of Rosemont, Pa., published in this issue of the Journal. It is true that Mr. Conger says: "Please do not leave orders that we are to be excluded from the sick room." The general tenor of his sermon, however, makes it a safe inference, we take it, that priests are seldom excluded by the physician's direction from the bedside of persons seriously ill. Certainly it is very rarely that there can be any justification for thus excluding them, though there are instances in which a man may suppose himself to be at death's door, but erroneously. In a few of those instances the advent of a clergyman may confirm the sick man in his fears and actually turn the scale against his

In the generality of cases, we believe, the physician welcomes the priest, provided he comes at the proper time, and Mr. Conger quotes Dr. Mitchell (meaning Dr. S. Weir Mitchell, we presume) as having recently said that "the physician who in cases where a certain moral mandate was to be impressed upon the patient has never sought the aid of the clergyman must have missed some valuable assistance." Mr. Conger is careful to add that he entirely concurs in the opinion of one of our most distinguished physicians that "when a suggestion has to be made to a hypnotized subject it had better be made by a doctor than a priest."

We believe that there is great mutual regard of priests and physicians for each other. It comes out often in speeches by clergymen at medical banquets and in the almost invariable opening of important medical meetings with a prayer by a clergyman invited for the purpose. This regard of the clergy for physicians was further shown recently in an address, entitled Some Thoughts on the Medical Profession, delivered by the Very Rev. Dr. Joseph S. Glass, president of St. Vincent's College, at the opening of the present annual session of the College of Medicine of the University of Southern California and published in the October number of the Southern California Practitioner. "The physician, the teacher,

and the priest," says Dr. Glass, "—their object is to further the interests of humanity. No individual can afford to dispense with the services of any one of these three." It is surely true that cooperation rather than repulsion is manifested whenever the priest and the physician meet at the bedside of the sick. And so may it ever be.

AN AUSCULTATORY SIGN OF TWINS.

It seems that in their antenatal existence twins need not be possessed of "two hearts that beat as one," quite as two horses harnessed in a span do not necessarily trot in perfect unison. Indeed, it is upon this absence of exact synchronism, compared by him to the slightly irregular tread of the two horses, that M. M. E. Arnoux (Journal de médecine de Paris, October 3d) founds a new auscultatory sign of twin gestation. The sounds of the two feetal hearts, he says, are to be heard in their greatest intensity in the neighborhood of the mother's median line, rather nearer to the pubes than to the umbilicus. It is the lack of unison that establishes the presence of twins.

PALATABLE PREPARATIONS OF THE BROMIDES.

Practical pharmacists will be interested in the announcement from the Craig Colony for Epileptics, at Sonyea, N. Y., that a prize of \$25 will be awarded to the person who devises the best method of masking the taste of the bromides in a solution containing not less than ten grains of potassium or sodium bromide in a teaspoonful dose, and without impairing the value of the drug in any way. Contestants for this prize may send their formulas to Dr. W. P. Spratling, Sonyea, N. Y. The use of potassium or sodium bromide in continuous doses in the treatment of epilepsy appears to be a necessity, and the great difficulty is to present the drug in some palatable form, as patients acquire a great dislike to the taste of the salt after a prolonged period of use. Simple solutions of the bromides in water also cause gastric irritation, and numerous have been the means tried to prepare the drug in some form that would not repel by its taste or exert a disturbing effect on the stomach.

A Florentine physician has devised a method of preparing a fifty per cent. solution of potassium bromide which is suitable for hypodermic use, and it is frequently found necessary to administer the drug in this way in order to obtain quick results. To a three ounce solution of potassium bromide Dr. R. Rebizzi adds thirty grains of sodium sulphate and fifteen minims of carbolic acid, each of these

drugs being credited with a specific action. The carbolic acid is said to act as a local anæsthetic and at the same time maintain the sterility of the solution, while the sodium sulphate is supposed to facilitate absorption and favor the elimination of the carbolic acid. The combination seems an excellent one from a theoretical point of view, but we question whether injections of such a solution, directed, by the way, to be driven deep into the front part of the thigh, would be well borne if given oftener than once or twice a week. There is a suggestion here, however, for intending contestants for the prize offered by Dr. Spratling.

Obituary.

WALTER R. GILLETTE, M. D.,

of New York.

On Saturday, November 7th, in the sixty-eighth year of his age, Dr. Gillette died in the Roosevelt Hospital, of malignant disease of the intestinal tract, an affection which for many months had been sapping his bodily powers. Although he was a native of Philadelphia, practically all his life had been spent in New York. He was a graduate of the College of Physicians and Surgeons, of the class of 1862. He practised medicine in New York for several years, and lectured on obstetrics in the Medical Department of the University of the City of New York. He then became connected in a professional capacity with the Mutual Life Insurance Company as a coadjutor of the late Dr. Gustavus S. Winston. After serving the company for a number of years as a medical officer, Dr. Gillette was transferred to the business department and became the company's vice-president. In that capacity he showed himself exceedingly capable, but when the management of the life insurance companies of New York was recently made the subject of popular criticism and official investigation, Dr. Gillette was among those who suffered. Eventually, however, he was virtually exonerated by the Supreme Court, and it is certain that those who knew him intimately never doubted that he was innocent of the offenses charged against him. He was, indeed, an amiable and upright man.

Rems Atems.

Changes of Address .- Dr. M. Grant McGinnis-Jones, to 166 West One Hundred and Twenty-ninth Street. New

The Society of Physicians of Canandaigua, N. Y .-- A meeting of this society was held on Thursday, November 12th. The programme included a paper on Air as a Thera-

peutic Agent, by Dr. A. M. Mead.
Dr. Osler Not Elected.—The official announcement of the vote for the Lord Rectorship of Edinburgh University shows that Mr. George Wyndham received 826 votes, Mr. Winston Churchill 727 votes, and Dr. William Osler

Sleeping Sickness Commission.—Captain Percival Mackie, of the Indian Medical Service, has been selected by the Government of India to join this commission, which recently left England for Uganda, under the aus-pices of the Royal Society, and under the direction of Colonel Sir David Bruce, F. R. S., R. A. M. C.

The Society of Medical Jurisprudence, New York .--At the two hundred and sixteenth regular meeting of this society, which was held on Monday evening, November 9th, Dr. Robert T. Morris read a paper entitled A New Prospective Era of Medicine.

Royal College of Surgeons Opens a Wider Field for Women.—Resolutions have been adopted by the Royal College of Surgeons of England admitting women to examinations for the diploma in public health, licensure in dental surgery, and the fellowship.

dental surgery, and the fellowship.

A Tablet to the Late Dr. Carroll.—A bronze tablet to the memory of the late Dr. James Carroll was unveiled on Wednesday, November 11th, in the main building of the University of Maryland. Dr. William H. Welch, of Baltimore, delivered the principal address.

Rochester, N. Y., Academy of Medicine.—A regular meeting of this section was held on Wednesday evening, November 11th, under the auspices of Section II. The principal feature of the programme was a paper by Dr. Roswell Park, of Buffalo, entitled Some Recent Aspects of the Cancer Problem.

Medical Society of the County of Orleans N. V.

Medical Society of the County of Orleans, N. Y .-At the annual meeting of this society, which was held recently in Albion, N. Y., the following officers were elected: President, Dr. Charles Fairman, of Lyndonville; vice-president, Dr. George Post, of Holley; secretary and treasurer, Dr. John A. Dugan, of Albion.

Richmond, Va., Academy of Medicine and Surgery.—

A regular meeting of this academy was held on Tuesday, November 10th. A paper on Surgery in Tuberculosis was read by Dr. R. Tunstall Taylor, of Baltimore, and a paper

read by Dr. R. Tunstall Taylor, of Baltimore, and a paper on Surgical Affections of the Biliary Tract was read by Dr. A. Murat Willis. Dr. A. L. Gray opened the discussion.

The Madison County, N. Y., Medical Society.—At the annual meeting of this society, which was held recently in Oneida, N. Y., the following officers were elected: President, Dr. Charles H. Perry, of Oneida; vice-president, Dr. R. H. Ash, of Canastota; secretary, Dr. George W. Miles, of Oneida; treasurer, Dr. S. J. Wilson, of Oneida.

The Montreal League for the Prevention and Treatment of Tuberculosis.—A building, situated in the heart of the city, to be used for dispensary purposes, has been presented to this league by Lieutenant Colonel Burland, of Montreal. Colonel Burland has also made a gift of \$10,000

Montreal. Colonel Burland has also made a gift of \$10,000 to the league, on condition that it raises an endowment of a similar amount.

Franklin District, Mass., Medical Society.-The reguriankin District, Mass., Medical Society.—The regular bimonthly meeting of this society was held at Greenfield, Mass., on Tuesday, November 10th. Dr. Charles Moline, of Sunderland, read a paper on Tetanus, and reported two cases. Infantile Paralysis was the subject of papers read by Dr. C. L. Upton, of Shelburne Falls, and Dr. C. C. Messer, of Turners Falls.

The Medical Society of the Borough of The Bronx held a stated meeting on Wednesday evening, November 11th. Dr. John B. Huber read a paper entitled Modern Methods of Diagnosis in Tuberculosis and their Comparative Value, and Dr. William Loughran read a paper on Some Phases of Tuberculosis in Children. Officers for

1908 were nominated at this meeting.
Syracuse, N. Y., Academy of Medicine.—The following papers were read at a meeting of this academy which was held on Tuesday evening, November 10th: Cretinism —Result of Six Months' Treatment, and the presentation of the patient, by Dr. W. H. Maynard; Fracture—Discocation of the Shoulder, by Dr. D. M. Totman; Long Continued Infection in a Case of Appendicitis, by Dr. C. F.

Anniversary Address at the New York Academy of Medicine.—Major Charles Lynch, of the Medical Corps of the United States Army, late representative of the Medical Corps of the Army in Manchuria, will deliver the amiversary address at the New York Academy of Medicine on the evening of November 19th. The subject of the address will be Medical Service in a Modern Army in War as Exemplified by the Japanese Army in the Russo-Japanese

Infectious Diseases in Chicago.—During the week ending October 31, 1908, there were reported to the Department of Health 630 cases of infectious diseases, this being an increase of 74 over the preceding week. Of the being an interest of 74 over the precenting week. Of the total number of cases reported, 214 were of diphtheria, 177 of scarlet fever, 22 of measles, 16 of chickenpox, 23 of pneumonia, 87 of typhoid fever, 7 of whooping cough, 1 of puerperal fever, 72 of tuberculosis, and 11 of diseases of minor importance.

Philadelphia County Medical Society.-The Central Philadelphia County Medical Society—The Central Branch of this society met on Wednesday evening, November 11th. Dr. W. T. Dugan read a paper on The Uses and Abuses of Electricity in Medicine. Dr. F. R. Starkey read a paper on The Early Diagnosis of Carcinoma of the Stomach. Dr. Barton Cooke Hirst read a paper on the Operative Technique of Complete Laceration the Perinaum

New York Pathological Society.—The regular meeting of this society was held at the New York Academy of Medicine on Wednesday evening, November 11th. Dr. Francis Carter Wood reported a case of Adenomyoma of the Round Ligament; Dr. Herbert L. Celler reported a case of Gastrointestinal Pseudoleuchæmia; and Dr. Warfield T. Longcope, director of the Ayer Clinical Laboratory, Philadelphia, presented a study of cases of Hodgkin's Disease

Lymphosarcoma

The Health of Pittsburgh .- During the week ending October 31, 1908, the following cases of transmissible dis eases were reported to the Bureau of Health: Chickenpox. 12 cases, o deaths; typhoid fever, 29 cases, o deaths; scarlet fever, 48 cases, 2 deaths; diphtheria, 25 cases, 2 deaths; measles, 16 cases, 1 death; whooping cough, 1 case, 1 death; pulmonary tuberculosis, 23 cases, 10 deaths. The total deaths for the week numbered 153, in an estimated population of 565,000, corresponding to an annual death rate of

14.08 in 1,000 population

The Philadelphia Medical Examiners' Association.-At a stated meeting of this association, which was held on Tuesday evening, November 10th, the following papers were read: Mental Diseases from the Examiner's Standpoint, by Dr. Charles W. Burr; Relation of Brain Diseases to Life Insurance, by Dr. T. H. Weisenburg; Relation of Spinal and Vascular Diseases of the Nervous System to Life Insurance, by Dr. Daniel J. McCarthy; Func-tional Nervous Diseases with Relation to Life Insurance, by Dr. Charles S. Potts

Buffalo Academy of Medicine.-At a meeting of the Section in Pathology, which will be held on the evening of Tuesday. November 17th, the programme will include a paper on Darier's Disease ending in Multiple Skin Cancer, by Dr. Grover W. Wende; and a paper on Cancer and Sarcoma, by Dr. H. D. Walker, of Newburgh, N. Y.

A regular meeting of the Section in Medicine was held on Tuesday evening, November 10th. The principal feature of the programme was a paper by Dr. William C Krauss entitled The Postoperative Prognosis of Spinal

Cord Tumors.

Personal.—Dr. Frederic Brush, of Boston, has been appointed superintendent of the New York Postgraduate Medical School and Hospital. Before assuming his duties, however, Dr. Brush will devote some time to a study of postgraduate instruction and hospital administration in American medical centres several

Dr. William Osler has received leave of absence from Oxford University for one year, which he will spend on

the Continent.

Dr. Mazyck P. Ravenel, of Philadelphia, was recently appointed professor of bacteriology at the University of Wis-

Scientific Society Meetings in Philadelphia for the Week Ending November 21, 1908: Monday, November 16th.-Medical Society of the Woman's

Hospital.

Tuesday, November 17th.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

WEDNESDAY, November 18th.—Section in Otology, College of Physicians; Franklin Institute; Association of Clinical Assistants, Wills Hospital.

THURSDAY, November 19th.—Section in Ophthalmology, College of Physicians; Section Meeting, Franklin Institute: Southeastern Medical Society; Northeast Branch,

Philadelphia County Medical Society.
Friday, November 20th — American Philosophical Society.

Friday, November 20th—American Philosophical Society.

The Philadelphia Polyclinic and College for Graduates in Medicine.—The following are registered at this college: Dr. Albert Woomer, of Snyders, Pa.; Dr. Mortimer H. Jordan, of Birmingham, Ala; Dr. H. Moore Mace, of Catskill, N. Y.; Dr. Robert W. Dunlap, of Washington, Pa.; Dr. Alden B. MacDonald, of Sugar Grove, Pa.; Dr. C. F. Berwatz, of Pittsburgh, Pa.; Dr. H. J. Stockberger, of Greensburg, Pa.; Dr. B. A. Beale, of Driftwood, Pa.; Dr. C. Wilson, of Ithaca, N. Y.; Dr. F. J. Walz, of Pittsburgh, Pa.; Dr. Claud N. McKee, of Scott-

dale, Pa.; Dr. William Hertz, of Allentown, Pa.; Dr. W. P.

dale, Pa.; Dr. William Hertz, of Allentown, Pa.; Dr. W. P. Sawyer, of Nevada City, Cal.; Dr. William P. Orr, of Lewes, Del.; Dr. J. C. Brown, of Williamsport, Pa.; Dr. S. S. Smith, of Leesburg, Fla.; Dr. Leslie M. Westfall, Of Kansas City, Mo.; Dr. B. F. Miller, of Nampa, Idaho; and Dr. Anna M. Dunn Gordon, of Belaspore, India.

White River, Vt., Medical Society.—A meeting of this society will be held at the Junction House, White River Junction, Vt., on Tuesday afternoon November 24th. The programme will consist of a "symposium" on tuberculosis, and the various phases of the tuberculosis problem will be dealt with as follows: History of the Disease, by Dr. D. R. Chase; Report of the Tuberculosis ease, by Dr. D. R. Chase; Report of the Tuberculosis Congress of 1908, by Dr. William T. Smith; Feeding, Climate, Rest, etc., by Dr E. E. Deane; Home Treatment, Offmate, Rest, etc., by Dr. E. E. Drakt, Thombook by Dr. E. J. Fish; Sanatorium Treatment, by Dr. D. S. Drake; Surgical Treatment, by Dr. J. M. Gile; Spread and Restriction, by Dr. A. C. Bailey; Practical Conclusions, by Dr. O. W. Sherwin.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statistics of new cases and deaths reported for the two weeks ending November 7, 1908:

| | ()c | 1. 31- | | |
|--------------------------|--------|---------|--------|-----|
| | Cases. | Deaths. | Cases. | |
| Tuberculosis pulmonalis | 431 | 134 | 443 | 147 |
| Diphtheria | 321 | 21 | 291 | 16 |
| Measles | | 3 | 137 | 6 |
| Scarlet fever | | 6 | 143 | |
| Smallpox | | | | |
| Varicella | 81 | | 91 | |
| Typhoid fever | 85 | 19 | 5.3 | I 2 |
| Whooping cough | | 4 | 9 | 3 |
| Cerebrospinal meningitis | 9 | 5 | 5 | 2 |
| | | | | |
| Totals | 1,260 | 192 | 1,172 | 192 |
| | | | | |

Philadelphia Pædiatric Society .- The regular meeting of this society was held on Tuesday evening, November 10th. Dr. Theodore Le Boutillier exhibited several pa-tients with hereditary syphilis. Dr. A. P. C. Ashhurst reported a case of gastrostomy for impermeable stricture reported a case of gastrostomy for impermeable stricture of the œsophagus, and two cases of herniotomy for strangulated hernia in infants. Dr. J. H. McKee and Dr. J. H. Jopson reported three cases of imperforate rectum and anus, with operation. Dr. A. J. Kilmer read, by invitation, a paper entitled A Study of Blood in Pertussis. Dr. W. N. Bradley reported a case of congenital heart disease in an infant, and exhibited specimens. Dr. John Speese exhibited specimens from a case of congenitate hydronenbrosis. tal hydronephrosis.

Monthly Statement of Mortality of the State of New Jersey.—During the month ending October 15, 1908, there were reported to the Bureau of Vital Statistics 2,904 deaths from all causes. Of the total number of deaths 1,047 deaths from all causes. Of the total number of deaths 1,047 were of children under five years of age. The principal causes of death were: Typhoid fever, 34 deaths; measles, 1 death; scarlet fever, 18 deaths; whooping cough, 21 deaths; diphtheria, 34 deaths; malarial fever, 3 deaths; tuberculosis of the lungs, 248 deaths; tuberculosis, other than that of the lungs, 50 deaths; cancer, 144 deaths; cerebrospinal meningitis, 24 deaths; diseases of the nervous system, 351 deaths; diseases of the circulatory system, 307 deaths; diseases of the respiratory system (pneumonia and tuberculosis excepted), 129 deaths; pneumonia, 125 deaths; infantile diarrheea, 367 deaths; diseases of the digestive system (infantile diarrhœa excepted), 225 deaths; Bright's disease. 104 deaths; suicide, 35 deaths; all other causes, 594 deaths

Vital Statistics of New York .- During the week endvital Statistics of New York.—During the week ending October 31, 1908, there were reported to the Department of Health of the City of New York 1,166 deaths from all causes, as compared with 1,355 for the corresponding period in 1907. The annual death rate in 1,000 of population was 13,75; the death rate in the corresponding week in 1907 was 16.49. Of the total number of deaths 325 were of children under five years of age. There were 40 deaths from contagious diseases, I death from malarial diseases, 4 deaths from whooping cough, 134 deaths from pulmonary tuberculosis, 5 deaths from cerebrospinal meningitis, 18 deaths from bronchitis, 144 deaths from diarrheal diseases, 69 deaths from pneumonia, 70 deaths from bronchopneumonia, 16 deaths from suicide, death from homicide, and 61 deaths from accidents. There were 126 still births during the week. Six hundred and fifty-one marriages and 2,261 births were reported during the week.

The Pathological Society of Philadelphia held a stated meeting on Thursday evening, November 12th. tion to a number of card specimens presented by Dr. A. G. Ellis, Dr. C. B. Farr, Dr. John Speese, Dr. A. O. J. Kelly, and Dr. Howard T. Karsner, the programme included the following papers: Experimental Studies upon the Vitality and Virulence of the Tubercle Bacillus when Submerged in Water, by Dr. Randle C. Rosenberger; The Pathogenesis of Spontaneous Cerebral Hæmorrhage, by Dr. A. G. Ellis; The Types of Cerebral Hæmorrhages. with specimens illustrating the various types, by Dr. D J. McCarthy.

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, November 16th, at 8:30 o'clock. The programme will be as follows: I. Presentation of specimens and cases, and voluntary communications—II. A paper on Asiatic Cholera, by Dr. William H. Thomson.—III. Notes on the Bacteriology of Cholera, by Dr. Edward K. Dunham.-IV. A paper entitled Cholera in its Relation to Comnerce, by Dr. William T. Jenkins, formerly health officer of the Port of New York.—V. Discussion, to be opened by Dr. John B. Huber. The first of the special borough meetings of this association will be held in The Bronx on Mon-day evening, December 7th. Full particulars of the meeting will be issued later.

The Mortality of Chicago.—During the week ending October 31, 1908, there were reported to the Department of Health 541 deaths from all causes, as compared with 510 during the previous week and 508 for the correspond-510 during the previous week and 508 for the corresponding week in 1907. The annual death rate in 1,000 of population was 13,09. Of the total number of deaths 108 were of children under one year of age; 53 of children between one and five years of age; 35 of persons between five and twenty years of age; 217 of persons between twenty and sixty years of age; and 128 of persons over sixty years of age; and 128 of persons over sixty years of age; The principal causes of death were: Apoplexy, 15 deaths; Bright's disease, 45 deaths; bronchitis, 8 deaths; consumption, 54 deaths; cancer, 32 deaths; convulsions, 1 death; diphtheria, 15 deaths; heart diseases. convulsions, I death; diphtheria, 15 deaths; heart diseases 44 deaths; intestinal diseases, acute, 51 deaths; nervous diseases, 19 deaths; pneumonia, 58 deaths; scarlet fever, 14 deaths; suicide, 7 deaths; typhoid fever, 6 deaths; violence (other than suicide). 31 deaths; whooping cough, 2 deaths; all other causes, 149 deaths.

The Tri-Professional Medical Society of New York.
The twentieth stated meeting of this society will be held at the Hotel Astor, New York, on Tuesday evening, November 17th, at 8:15 o'clock. Cases and specimens will be presented as follows: Multiple Fracture of the Inferior Maxilla, by Dr. William J. Lederer; Gangrene of the Vulva, by Dr. Ross McPherson; Intestinal Obstruction complicating Extrauterine Pregnancy, by Dr. John M. Keyes; Fracture of the Tibia and Fibula, by Dr. Augustin H. Goelet; Radiographs of Unusual Injuries to the Shoulder Joint, by Dr. George M. MacKee. Dr. William I. Lederer will read a paper entitled The Relationship between Certain Systemic, Dental, and Buccal Disturbances, and among those who will take part in the discussion of this paper are Dr. D. B. Freundlich, Dr. W. D. Tracy, and Dr. G. M. MacKee. The Practical Value of Tincture of Iodine and Iodine Catgut in Major Surgery is the subject of a paper which will be presented by Dr. Walter T. Dannreuther. Dr. Augustin H. Goelet, Dr. G. K. Dickinson, Dr. G. Morgan Muren, and Dr. John M. Keyes will participate in the discussion.

New York and New England Association of Railway Surgeons.—The eighteenth annual meeting of this association will be held at the New York Academy of Medicine, on Tuesday and Wednesday, November 17th and 18th. The programme for the Tuesday morning session consists of a "symposium" on What are the Causes Leading to Railway Accidents and what Remedies can be Sug-Eight papers on the subject will be read, and a general discussion will follow. At the afternoon session the president, Dr. F. A. Stillings, of Concord, N. H., will deliver the annual presidential address. In the evening a reception and banquet will be held at Delmonico's. On Wednesday morning, at 9 o'clock, Dr. Howard Lilienthal will hold a clinic at Mount Sinai Hospital, and in the afternoon, at 2:30 o'clock, Dr. Andrew J. McCosh will hold a clinic at the Presbyterian Hospital. The officers of the association are: President, Dr. F. A. Stillings, of

Concord, N. H.; first vice president, Dr. J. M. Wainwright, of Scranton, Pa.; second vice president, Dr. C. A. Pease, of Burlington, Vt.; corresponding secretary, Dr. George Chaffee, of Brooklyn; recording secretary, Dr. C. B. Herrick, of Troy, N. Y.; treasurer, Dr. J. K. Stockwell, of Oswego, N. Y.

Society Meetings for the Coming Week: Monday, November 16th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn.,

of the Greater City of New York; Hartford, Conn., Medical Society.

Tuesday, November 17th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

Wennesday, November 18th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, November 19th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society (annual); Æsculapian Club of Buffalo, N. Y.
FRIDAY, November 20th.—New York Academy of Medicine

DAY, NOVEMBER 2011.—New York Academy of Medicine (Section in Orthopadic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society; Brooklyn Medical Society.

Public Health and Marine Hospital Service Exammations.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, Washington, D. C., on Monday, January 11, 1909, at 10 a. m., for the purp se of examining candidates for admission to the grade of assistant surgeon in the Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputa-ble medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The examination will be physical, oral, writen, and clinical. In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment that would disqualify them for service in any climate. The written examination begins service in any climate. with a short autobiography of the candidate, and consists of questions on the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and the natural sciences. The clinical examination is conducted at a hospital, and, when practicable, candidates are required to per-form surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority and after due of surgeon as grades occur in that grade. Assistant examination, as vacancies occur in that grade. Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000. and surgeons \$2,500 a year. Officers are entitled to furnished quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of \$30, \$40, and \$co a month, according to grade. All grades above that of assistant surgeon receive longevity pay, 10 per cent, in addition to the regu-lar salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual For further information, or for invitation to appear before the hoard of examiners, address the Surgeon General, United States Public Health and Marine Hospital Service, Washington, D. C.

Dith of Current Titerature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

November 5, 1908.

A Consideration of the Introduction of Surgical An-

A Consideration of the Introduction of Surgical Anaesthesia,
Sy William H. Welch.
Contribution to the Surgery of the Prostate. Prostatectomy in the Treatment of Prostatic Abscess of Gonorrheal Origin,
Sy Samuel Alexander.
Total Extirpation of the Lower Pharynx for Epitheliona, with Permanent Esophagostoma: Remarks upon the Surgical Treatment of Cancer,

Remarks Production of Reliables of Production of Cancer,

Remarks Production of Reliables of Production of Cancer,

Bursitis Subacromialis, or Periarthritis of the Shoulder Joint. (Subdeltoid Bursitis.) (To be continued),
The Serum Treatment of Epidemic Cerebrospinal Meningitis, with a Report of Twenty-two Cases, (Concluded).

Brother Taylor Fulton.

2. Prostatectomy in the Treatment of Prostatic Abscess of Gonorrhœal Origin.-Alexander describes his method of operation thus: The membranous urethra is opened by a median perineal incision. The floor of the membranous urethra is cut from the bulb to the apex of the prostate. prostatic urethra is dilated by passing the index finger through the wound and into the bladder. During this procedure the mucous membrane of the prostatic urethra, and in some instances the prostate itself, is split and an abscess is opened into the urethra. The wall of the prostatic urethra is then examined by touch. The opening of any abscess can be thus detected. The lateral lobes are then enucleated, separately, by breaking through the mucous membrane of the prostatic urethra with the The "line of cleavage" is followed, and finger. the lobe is separated from the bladder wall. middle isthmus of the prostate is broken at its junction with the lateral lobe. The lateral lobe is then free and is delivered through the perineal wound by means of a small lithotomy forceps. After the lateral lobes have been removed, the vesical orifice can be felt as a distinct ring which fits the end of the examining index finger. The hæmorrhage is never very severe. To control this he has adopted the following device: The finger is introduced into the perineal wound and the end of it hooked over the edge of the lower lip of the vesical orifice. flat forceps with a lock in the handle is then passed underneath the finger and the lower lip of the vesical orifice seized and the forceps locked; the finger is then withdrawn and gentle traction is made upon the forceps. This draws the vesical orifice toward the perinæum and compresses the prostatic plexus and causes almost complete cessation of the hæmorrhage. The bladder is then emptied of any clots it may contain and irrigated. The bladder is drained by a metal perineal tube. eight inches long and having upon the shaft a round diaphragm which, by means of a spring attachment, can be slid along the shaft of the tube, and will remain fixed where it is placed. The tube is put in place without the diaphragm, and the wound is packed with strips of folded iodoform gauze by means of long forceps. The hæmorrhage is thus efficiently controlled. The forceps is then removed. Long strips of folded gauze are then wrapped loosely about the tube as it emerges from the wound, so as to form a cushion; this should be thick enough to bring the surface of the cushion

level with the tuberosities of the ischium. The diaphragm is then put upon the tube and pushed firmly down upon this perineal cushion of gauze. A piece of rubber tubing four inches long is then put upon the end of the tube. The tube is held firmly in place and the dressings are applied and held in place by means of a three tail perineal bandage. The outer tails of this bandage cross one another in the perinæum, and the middle tail, which is split for the passage of the tube, is brought firmly over these and fastened in the middle line. The patient is put to bed and simple syphon attachment made to the tube. With the dressing properly in place the patient may turn upon his side. is practically no leakage along the tube. The dressing remains dry, and the tube causes little discomfort. The perineal tube is removed on the day following the operation. The packing is removed at the same time or on the day following, and the wound is then treated as a perineal section.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Nevember 7, 1908.

I. Technique of Abdominal Hysterectomy,

By ARTHUR E. HERTZLER. 2. Lumbar Puncture in Diagnosis and Therapeutics. Description of a Device for Manometric Estimation of Intraspinal Pressure, By George E. Ebright.

The Corset for Movable Kidney and Associated Visceral Ploses,

Phagocytic Immunity and the Therapeutic Injection of
Dead Bacteria in Endocarditis, By E. C. Rosenow.

Preliminary Report of the Anæsthesia Commission of
the American Medical Association.

Preliminary Report of the Anæsthesia Commission of the American Medical Association.

Methods of Administering Ether,
By O. J. CUNNINGHAM and H. C. ANDERSSON.

Nitrous Oxide Anæsthesia, By WILLIAM D. HAGGARD.

Chloroform Anæsthesia, By WILLIAM D. HAGGARD.

Local Anæsthesia. Extent to which Local Anæsthesia

Has Been Adopted in America,

Ry LAMES P. MITCHELL.

Io. Special Methods of Anæsthesia, By James P. Mitchell.

II. The Blood Changes Incident to Surgical Anæsthesia, with Special Reference to Those Induced by Nitrous

Oxide. A Clinical and Experimental Study.

By WALTER W. HAMBURGER and FRED E. EWING.

12. The Effects of Quebrachin on the Lungs,

By Horatio C. Wood.

13. Ear Symptoms of Cardiovascular Disease. With Special Reference to Low Pressure Cases,

By Louis Faugeres Bishop.

4. Endocarditis.—Rosenow says that the blood culture in endocarditis is the best means of making an early diagnosis. It should always be made for the identification and study of the infecting organism as well as for prognostic reasons. accidents, the greater the virulence the more grave the prognosis. The therapeutic injection of dead bacteria in endocarditis has very little influence on the course of the disease until late in the course, when there is a temporary improvement following the injections. A very close relation exists between the biological character of these organisms and their ability to produce endocarditis in the class of cases he observed. The organisms isolated, while of practically no virulence to animals and susceptible to phagocytosis on cultivation, appear to immunize themselves against the antibodies produced by the host, and thus to overcome the resistance of the latter.

5. Anæsthesia Commission Report.-The anæsthesia commission submits three recommendations regarding general anæsthics. I. That for the general practitioner, and for all anæsthetists not specially skilled, ether must be the anæsthetic of choice-ether administered by the open or the drop method. 2. That the use of chloroform, particularly for the operations of minor surgery, be discouraged, unless it is given by an expert. 3. That the training of skilled anæsthetists be encouraged; and that undergraduate students be more generally instructed in the use of anæsthetics. The commission believes that the further use of nitrous oxide combined with air or oxygen, in major surgical operations, is promising.

6, 7. Anæsthesia.—Cunningham and Andersson speak of the methods of administering ether, mentioning the closed, the open or drop method, and the semiopen method, the mechanical administration, rectal etherization, the nitrous oxide-ether, and the nitrous oxide-oxygen-ether combination. They state that the drop method is a very popular one. It is practically safe, while its simplicity makes it the method of choice for the inexperienced. Its shortcomings of perfection are sufficiently important to demand consideration. It produces great refrigeration. Whatever heat is taken from the inspired air by the vaporization of the ether is in turn taken from the lungs, as the exhalation is always at practically body temperature, regardless of the temperature of the inhalation. If refrigeration is a factor in the production of postanæsthetic pulmonary complications, the open or drop method, which is the most efficient of all methods in extracting heat from the patient, would seem to invite the occurrence of postanæsthetic pulmonary involvement. If refrigeration adds to shock, the open or drop method would, regarding the production of shock, head the list of all the methods of administering ether. It produces incomplete diffusion of ether vapor and air because of the close proximity of the application of the liquid ether to the face. Unduly large amounts of ether are required because of the waste of ether from its vaporization by the exhalation. Longer time is necessary to induce anæsthesia. Modern anæsthesia has already reached the stage where refinements of methods are necessary, when skilled anæsthetists are available. That a method possesses no serious obstacles is not enough. Modern surgeons and anæsthetists demand a method of administering ether which overcomes certain minor and too often neglected objections, which are of more or less importance regarding the safety and pleasantness of ether anæsthesia. It may be ventured that hereafter general anæsthesia will not be considered as a whole, but its various stages dealt with according to their obviously different requirements, and that this is to be accomplished by sequences of various anæsthetics administered with an apparatus which is both accurate and practical, and by men whose entire time is given to this branch of the profession.—Haggard reviews the advantages and disadvantages of nitrous oxide. The advantages are: Quickness of action, absence of uncomfortable sensations to the patient, almost immediate recovery, absence of lung complications, absence of danger to the kidneys, absence of postanæsthetic vomiting. Improbability of subsequent fatty degeneration of the kidneys, liver, and heart. It is to be preferred especially when there is a disease of those three great organs, and for the patients who have previously had unpleasant experiences with the other anæsthetics-such experiences as aggravated postoperative vomiting. The disadvantages are: It is not suitable for fat, plethoric, and alcoholic patients. Its zone of anæsthesia is within somewhat narrow limits. Slight lividity and occasional talking occur. We cannot always secure the requisite skill for its successful administration, nor the required quantity of gas, and the proper apparatus. The cost is not inconsiderable. From one to two cylinders of one hundred gallons each are needed for an hour's administration. Contraindications for its use are: It should not be employed for patients with dilated hearts or for those with extremely bad hearts, whether with valvular or myocardial disease. It should not be used in case of narrow or abnormal air passages, of enlarged lymph nodes, goitres, or enlarged tonsils and adenoids.

11. Blood Changes Incident to Surgical Anæsthesia.—Hamburger and Ewing have made such observations. They state that in nitrous oxide anæsthesia the hæmoglobin is not permanently reduced nor is anæmia produced; hæmolysis is not increased; and the changes in the readings of the hæmoglobin and erythrocytes are transient and of no surgical significance, and are most likely to be explained on the basis of capillary stasis. The production of reduced hæmoglobin is not a result of the anæsthetic itself, but is due to the accompanying asphyxia. The changes in coagulation time are not constant, but in general there is an increase in the time required for clotting most marked about the third day. In an analysis of the blood changes incident to ether anæsthesia in a series of experimental observations they find that the hæmoglobin is slightly reduced and therefore a slight anæmia is produced; hæmolysis is not materially increased; the changes in hæmoglobin and erythrocytes are to be explained on the basis of blood inspissation. It causes a marked decrease in the coagulation time, most marked from the seventh to tenth days. In an analysis of the blood changes incident to chloroform anæsthesia in a series of experimental animals, they find that the hæmoglobin is reduced, and therefore an anæmia is produced; hæmolysis is increased; it causes a slight decrease in the coaguiation time, most marked in the seventh to tenth days. In a comparison of the three anæsthetics from the standpoint of the blood changes they conclude that nitrous oxide causes no permanent effects of any significance; that ether causes more harmful changes (slight anæmia and marked decrease in coagulation time); that chloroform causes the most harmful results (hæmolysis and production of distinct anæmia).

MEDICAL RECORD.

November 7, 1908.

- Notember 7, 1908.

 1. The Development of the Legal Relations Concerning the Insane, with Suggestions for Reform,
 By Allan McLane Hamilton,
 2. Operative and Nonoperative Fibroid Tumors of the Uterus,
 By Frank De Witt Resse.
 3. Bituminous Coal Smoke: Its Chemistry and Effects on the Health of Man and Plants, Works of Art and Commerce,
 By John W. Wainwright,
 Chronic Ottiis Media Purulenta, By Alfred Wiener,
 Fracture and Dislocation of the Neck, at the Sixth Cervical Vertebra, in a Man of Sixty. Recovery,
 By George Hermert Williams.
 6. Important Flat Foot Facts; for Assimilation and Dissemination,
 By Edward A. Tracy.

1. Suggestions for Reform in the Legal Relations Concerning the Insane.-Hamilton suggests certain measures and makes the following recommendation: There should be obligatory information of the commissioner in lunacy in regard to the existence of all cases of insanity. Though the commissioner in lunacy may have power to license private institutions, he should also be empowered to formulate additional requirements which would put some of them on a much higher standard than they occupy at present. Commitments are chiefly to be looked upon as reinforcements by the judge of the persuasions exerted by the friends, physician, and family of the patient, and should be resorted to only when the latter cannot be persuaded to go to the asylum. Everything should be done to make the appeals of committed patients available. There should be severe punishment for the suppression of letters, or interference in any way with the alleged lunatic's rights. There should be material reform in the attitude of the law regarding capacity and criminal responsibility, insane acts in them-selves, in any relation they may have, receiving more weight than heretofore. There should be a departure from conventions in old and arbitrary definitions. Special insane acts should be studied with reference to the crime itself in a way they have not been up to this time. The attitude of the courts should be much more charitable to the medical witness than it is to-day, the intelligent medical man being put in possession of all the facts in the case and not being obliged to answer restricted questions which place him in a false position, and which are deficient in the presentation of the facts. In all matters involving the determination of capacity or responsibility the medical man should be required to prepare a brief which should form the basis of his cross examination, and this, if necessary, must be supported by extraneous evidence which has received the sanction of the court as to heredity, previous history, and facts communicated by others.

2. Tumors of the Uterus.—Reese says that dysmenorrhora should be considered a symptom when appearing in any period of a patient's life, justifying a thorough examination of the pelvic organs to ascertain the cause of the pain and its removal if possible. A clear diagnosis and some positive indication for removal of uterine fibroid should be ascertained before surgical interference is resorted to. Mixed tumors of the uterus should always be removed as soon as diagnosticated. Simple fibroid tumors should never be attacked surgically, unless in exceptional cases, because they are amenable to constitutional and local treatment.

3. Bituminous Coal Smoke.—Wainwright observes that there are four sets of particles formed in smoke: (1) Carbon particles which escape unconsumed from the burning hydrocarbons giving off the soot; (2) tar vapors; (3) steam; (4) small particles of dust mechanically carried up the chimney by the draft. The proportion in which the four occur in the smoke is entirely dependent upon the condition of the surface of the fire. When the fuel is first put on, tar vapor and steam only escape from the fire below, with particles of complete and incomplete combustion, among which are carbon thonoxide. As the heat works upwards through the

recently added fuel, the products of distillation from the coal catch fire and are partially burned, the result being that the deposited carbon or soot also forms a portion of the smoke, while as the fire burns clearer and clearer and the upper portion becomes incandescent, practically nothing but the products of complete combustion find their way up the chimney. The gases issuing from a chimney consist, firstly, of invisible particles made up for the most part of gases which exist in the atmosphere in such minute quantities as to be capable of doing but little harm. This is true only of gases from ordinary fires and does not refer to the fumes from the chimneys of chemical works, which are capable of doing great harm. Besides these invisible gases, as has been shown, there is the visible portion, consisting for the most part of minute particles of carbon, which are not entirely pure, but contain a certain amount of sticky, tarry matter. Without doubt, the existence of a smoky atmosphere has an influence in increasing mortality. One effect of a smoky atmosphere, even worse than that of breathing the vitiated air, is to be found in the direct effect in causing people to keep their windows shut in towns, and so breathe the even more vitiated atmosphere within. It has for some time been recognized that one of the conditions most favorable to consumption is to be found in defective ventilation. It has been asserted that in suppressing smoke we deprive ourselves of a powerful disinfectant, which, when in the atmosphere that we breathe in crowded cities, tends to guard us against contracting infectious diseases, especially of the nose, throat, eyes, and lungs. This theory is, of course, discredited, for, as a matter of fact, such infectious diseases are more prevalent in large manufacturing centres than elsewhere, and statistics show this to be in a large measure due to a coal smoke ladened atmosphere. A smoky atmosphere, by its exclusion of light, its content of acid and irritating particles suspended in it, is harmful to the tissues of the nose, throat, eyes, and especially the lungs and air passages, whether in a healthy or other condition; aggravates the discomfort of those suffering from all forms of heart disease; increases the distress of those who have nervous complaints; lowers the tone of general health; is a peril to the aged; diminishes buoyancy of spirit, as well as reducing still further an already lowered resistance to disease. What relative part with pathogenic germs smoke plays in causing this class of diseases it is hard to calculate, but it is safe to say that, working together, the danger to health and life is largely increased.

BRITISH MEDICAL JOURNAL.

October 24, 1908.

I. The Examination and Certification of Mental Patients,
By J. Nell.

2. Cats as Plague Preventers, By A. BUCHANAN.
3. A Case of Implantation of the Ureters into the Rectum for Extroversion of the Bladder in a Woman, by a Modified Peters's Operation, By R. L. KNAGG.
4. Brewis's Appliance for Use after Colotomy.

By J. Ingram.

(Seventy-sixth Annual Meeting of the British Medical Association.)

Section of Tropical Diseases.

5. Discussion on Tropical Absects of the Liver,
Introduced by Sir R. H. CHARLES.

Section of Dermatology.

By A. GARCEAU. A Case of Mycosis Fungoides, Treatment of Lupus Vulgaris by Unmodified Sun Rays, By J. G. TOMKINSON,

The Treatment of Lupus Vulgaris,

By G. H. LANCASHIRE. A Method of Treatment of Hypertrichosis by the X (). By H. Noire. Rays. Bullous Eruptions in Children, By J. L. Bunch. TO Diseases of the Domesticated Animals Communicable to II.

By L. ROBERTS. By F. GARDINER. Man, 12. Occupation Dermatitis,
13. Isolation of the Klebs-Loeffler Bacillus in Eczematous
and Bullous Eruptions,
By A. Eddowes.

14. Experimental Urticaria (a Demonstration),
By T. C. GILCHRIST.

Section of Laryngology, Otology, and Rhinology.

15. Discussion on the Diagnosis of Intracranial Complications of Ear Disease,

By C. A. BALLANCE. 16. The Nature and Treatment of Atrophic Rhinitis,

2. Cats as Plague Preventers.—Buchanan states that the duration of plague in India depends on the time it will take before it is generally recognized that the cat is the best plague preventer. The question of plague or no plague is a question of Nature's balance between cats and rats. We may assist by using traps and poison, but can never hope

to compete with the cat.

5. Tropical Liver Abscess. - Charles maintains that there is a tropical liver, with its special ætiology, as a definite disease, distinctive from the congestive liver trouble of temperate climes, and that, as the causes for it become continuous, the effects on the viscus become more permanent, and these causes are most generally due to high temperature and chill, dietetic errors—qualitative and quantitative-alcohol, the abuse of exercise, and its opposite, the inactive life, malaria, dysentery, and diarrhœa. In short, those most likely to lead to degenerative changes, and those most dangerous to a degenerated organ. The capacity of the liver to deal with toxic products ingested depends on its integrity, the amount of deleterious matter absorbed and its quality. Recent researches point to the view that the amœba is not causative of acute dysentery, and is only found, as a rule, in association with other organisms. Its presence is neither concomitant with a definite train of symptoms, nor does it produce a specific type of stool. Its presence is secondary to other microorganisms. Wenyon's observations go to show that there is an amœba which is to be found in the human intestine, both in health and in disease, and which reproduces asexually in the intestine and sexually in cysts, which contain two, four, or eight nuclei, according to the stage of development. These cysts escape to the exterior and transmit the infection to other hosts. amœba is not peculiar to man. Rogers's conclusions regarding tropical liver abscess are as follows: 1. Further experience with ipecachuana in the presuppurative stage of amæbic hepatitis fully confirms his contention that tropical liver abscess can thus be easily prevented. 2. Four fifths of amœbic liver abscesses are free from bacteria and cocci when first opened, or post mortem if previously unopened. 3. In cases of tropical liver abscess proving fatal after the open operation, infection with staphylococci is almost invariably found. The great majority of patients examined at the time of being dressed subsequently to the drainage show a similar infection, which it is almost impossible to prevent in damp, hot climates. 4. Post mortem evidence shows that half of the patients, being fifty per cent, of the total operation cases, dying subsequently to the abscess being opened, conditions are found which almost preclude hope of recovery. In the remaining half of the patients, single or practically single abscesses are found, which afford good hope of recovery under approved methods of treatment. 5. By means of the flexible sheathed trocar liver abscesses may be drained and repeatedly irrigated with quinine solution without the admission of air, with probably better results than the present Calcutta mortality of about sixty per cent. 6. The ipecachuana treatment should always be used after operations for liver abscess, to cure any latent amœbic dysentery and prevent further abscess formation.

12. Occupation Dermatitis.—Gardiner's paper is based on a series of 187 cases of occupation der-The affection occurs more commonly in the later than in the earlier years of life, and is most prevalent during the summer. Among the male patients laborers, miners, painters, joiners, and rubber workers headed the list; among females, housewives, laundresses, and rubber workers. The most frequent causes seemed to be soap and washing materials, moisture and mud, varnishes and paints, alkalies and acids, and naphtha. The parts most commonly affected were the hands alone. In eleven cases the dermatitis was universal. Most of the patients were in good general health. Certain conditions of the skin were predisposing factors. Marked seborrhæa was noted in forty-two cases, and hyperidrosis in twenty-three. Thick sebum is a suitable nidus for germ growth, and renders the extension of an existing dermatitis more probable. Treatment consists in removal of the irritation as quickly as possible, and the application of soothing remedies. Means must then be employed to harden up the skin. Patients often refuse to wait until all the ervthema has subsided before returning to work, and so relapses are very common. The eruption is often made worse by the use of patent remedies. Soaps are the actual provocatives in many cases, and in others aggravate an existing der-

16. Atrophic Rhinitis .- Adam states that the presence of sinusitis should be presumed in every case of atrophic rhinitis, until it is definitely ex-He regards atrophic rhinitis as the end stage of hyperplastic purulent rhinitis for the following reasons: I. Sinusitis, which is so often present, is a hyperplastic process. 2. Sections of hyperplastic cases show changes characteristic of atrophy. 3. Turbinal tissue from cases of chronic sinusitis shows the early changes of atrophy. 4. Inferior atrophy often occurs with middle hyper-Hypertrophy never goes on to atrophy, hyperplasia does. Consanguinity appears in about half the cases. Ozæna is not an essential feature of the disease. Abel's bacillus is the cause of what is erroneously regarded as the specific fœtor, but is not the cause of the disease. The author insists on the importance of treating purulent rhinitis in children, especially when following eruptive fevers. Treatment of sinusitis often results in cure of discharge and fector. Once sinusitis is eliminated, injection of paraffin, solid by preference, often practically cures; it should be preceded by massage. But solid paraffin is often not retained; liquid paraffin is apt to cause thrombosis.

LANCET

October 24, 1908.

Heredity in Relation to Disease (Harveian Oration),

2

Heredity in Relation to Disease (Harveian Oration),
By J. A. ORMEROD.
By G. A. GIBSON.
Sanitation in India,
Notes of a Case in Which Nine Confinements were
Terminated Variously: (1) By the Natural Powers;
(2) by Symphisiotomy; (3) by Induction of Labor
and Forceps; (4) by Forceps alone; and (5) by
Cæsarean Section,
Some Points about Puncture of the Brain,
Some Points about Puncture of the Brain,
Notes on 670 Operations Performed under Spinal Anges-

Notes on 679 Operations Performed under Spinal Amesthesia (Cocaine or Stovaine) by Tuffier's Method,

By Dr. SABADINI.

6. Spinal Anæsthesia.—Sabadini's paper, which is based on 679 operations performed under spinal anæsthesia with cocaine or stovaine, goes to show that the method is entirely free from danger, and that the objections which have been urged against it are without foundation. He has never imposed spinal cocainization on his patients, always giving a general anæsthetic when desired. The cases comprised operations of every degree of severity; resection of ribs, hydatid cysts of the liver and peritonæum, strangulated hernia, abscess of the liver, wounds of the abdomen and viscera, and a large proportion of operations on the genital organs, both male and female. The patients' ages varied from fifteen to ninety-three years, so that age in itself is not to be regarded as a contraindication. The operations were always low down-i. e., below the level of the umbilicus, anæsthesia extending upwards as a rule to within two fingers' breadth below the mammæ. To insure diffusion of the cocaine the patient is kept in Trendelenburg's position for ten minutes. The failures to obtain satisfactory anæsthesia amounted to about eleven per cent. Most resistance is shown by alcoholic and nervous subjects. Between the fifth and the fifteenth minute after injection the immediate effects manifest themselves; they are pallor, sweating, nausea, vomiting, and very occasionally marked apprehension. In a very few cases epileptoid tremor of the lower limbs and fatal syncope occur. The writer has never seen an instance of the latter grave accident. Pathological conditions which absolutely prohibit the use of cocaine are advanced cachexia, bilateral nephritis with scanty urinary secretion, myocarditis, pericarditis with effusion, and noncompensated cardiac affections. The only two untoward consequences at a later period are headache and rhachialgia. Patients subject to migraine seem more prone to postoperative headache; it can often be obviated by withdrawing fifteen to twenty grammes of cerebrospinal fluid before injecting the cocaine. Arthritic and alcoholic subjects, especially if suffering from arteriosclerosis, are especially liable to headache after spinal anæsthesia. Rhachialgia is alleged by some observers to be a sign of meningeal irritation, but although a few patients complained of pain in the spine it never amounted to positive inconvenience. The author has never met with a single instance of medullary mischief. His

conclusions regarding cocaine anæsthesia are as follows: 1. Spinal cocainization is absolutely free from danger. 2. Spinal cocainization, by Tuffier's method, may be employed from ten to fifteen years of age up to extreme old age for all operations on parts below a line running horizontally across two fingers' breadth below the breasts, or we may take the eighth rib as a limit. 3. The drawbacks alleged against the method can be minimized by attention to the points referred to to such an extent as to render them quite negligible in view of the advantagesviz., absolute safety, suppression of operative shock. etc. 4. It is an excellent mode of inducing anæsthesia which has been unjustifiably decried, and deserves to be practised under suitable conditions. The author has employed stovaine in 108 cases in patients between eighteen and seventy-one years of age in doses from five to ten centigrammes. On the whole, stovaine anæsthesia seemed to be preferable to cocaine, and the writer concludes: 1. That spinal stovainization is an excellent mode of inducing anæsthesia which may be employed without danger from fifteen years to an advanced age. 2. A dose of from five to ten centigrammes affords good anæsthesia which may last one and a half hours. 3. The constitutional disturbances are slight and never interfere with the performance of the surgeon's duties, and they seem to be less frequent with stoyaine than with cocaine. The only serious drawback is the comparative frequency of urinary retention (fortyfour out of 146 cases), lasting from one to several

LA PRESSE MEDICALE.

September 19, 1908.

Hebotomy or Symphyseotomy? Study of the Comparative Value of These Two Operations,

By CYRILLE JEANNIN.

2. The Action of Stained Bacteria,
By F. DAELS and R. DEVLOO.

Hebotomy or Symphyseotomy?—Jeannin concludes that pubiotomy is superior to symphyseotomy for the following reasons: I, It substitutes an osseous for an articular wound; 2, the technique is easy and the operation is performed in a less dangerous zone; 3, immediate accidents are less frequent and remote accidents are much more rare; 4, the mortality, both feetal and maternal, is much less; 5, in case of repeated intervention the operation can be performed on the opposite side.

2. Action of Stained Bacteria. - Daels and Devloo present some interesting results of their experiments made by centrifuging cultures of various bacteria, staining them with methyline blue or fuchsin and injecting them, usually into the vitreous

of a rabbit.

By LAFFORGUE.

Anæthesia with Ethyl Chloride. Its Practical Realiza-By H. VENNIN. tion with a Simple Apparatus,

Death of Ascitics after Paracentesis.-Perrin, after a study of the accidents which may follow paracentesis for ascites, which he classes in five principal categories, viz., serous anæmia, icterus gravis, hæmorrhages of the abdominal wall, hæmorrhages of the digestive canal, and cardiac dilatation

a vacuo, comes to the following conclusions: I, In every case of cirrhosis the physician should rigidly insist on the proper diet and treatment and not waste time with half measures. 2, In every case of puncture for ascites the condition of the heart should be investigated, and when indicated a preventive cardiac tonic treatment instituted. the elements of prognosis should be weighed in each particular case. 3. A small trocar should be used, the dorsal decubitus should be maintained, and a very firm bandage should be placed about the body immediately and kept in place for a week or longer if the patient gets up. The place of election should be at the junction of the middle and outer thirds of the umbilicoiliac line. 4, After the operation the patient should not be left, but should be closely watched in order to be able to institute in time any medication which may be necessitated by the occurrence of any of the before mentioned accidents. 5, It is good professional prudence to mention to a member of the patient's family that the operation is not always successful and to advise how the case permits the possibility of this or that complication.

3. Anæsthesia with Ethyl Chloride.-Vennin presents an apparatus which has the advantages of securing an atmosphere very rich in the active vapor and at the same time permits the minimum dose of the drug to be used.

LA SEMAINE MEDICALE September 23, 1908.

The Second Congress of the International Society of By F. LETARS. Surgery By PROFESSOR R. DE BOVIS. Uterine Hypoplasia,

September 30, 1908.

The Surgery of Cancer at the Beginning of the Twentieth By F. LEJARS. Century, October 7, 1908.

1. Report of the First International Congress of Urology, By ACHARD.

2. Second Congress of the International Society of Sur-

gery.
The Twenty-first French Congress of Surgery.

BERLINER KLINISCHE WOCHENSCHRIFT. September 21, 1908.

The Action of Thyreoid Material,
By F. Kraus and H. Friedenthal.
The Treatment of Experimentally Produced Nagana with Mixtures of Atoxyl and Thioglycolic Acid,

By E. FRIEDBERGER. Concerning the Behavior of the Serum of Scarlet Fever Patients in Wassermann's Reaction of Syphilis,

By FRITZ HÖHNE. Serum Reactions in Scarlet Fever,
By E. Seligmann and F. Klopstock.

Diagnostic Value of Local Tuberculin Reactions.

By A. ERLANDSEN. By Luigi Panichi. Observations Concerning Tremor,

The Signification of Diseases of the Optic Nerve in the Early Stage of Multiple Sclerosis, By Schley. 7.

A Contribution to the Ætiology of Diabetes Mellitus, By L. Bleibtreu.

A Case of Perforation of an Aneurysm of the Aorta into the Superior Vena Cava, By G. Kieseritzky. Treatment of General Diseases with Air Currents,

By MAX HERZ.

11. Concerning Idiosynerasics, By EDUARD HESS

12. Modern Theories Concerning the Action of Inorganic Medicaments, By T. A. MAASS.
The Water Jet Air Pump in the Service of Medicine, especially in Suction Treatment, By ARTHUR STRAUSS.

2. Treatment of Experimentally Produced Nagana. Friedberger finds that atoxyl, which

does not possess the power of killing tryanosomata in the test tube, obtains such a power through the addition of thioglycolic acid, and that the tympanicide power of such a mixture slowly increases. The freshly prepared mixture is not poisonous to the mouse, but after standing it acquires poisonous properties. After a mouse has been infected with nagana, even after it has carried tryanosomata in its blood for several days, the parasites can be removed by means of this mixture, yet, because of the greatly poisonous character of older mixtures, he recommends that mixtures more than two or three days old should not be employed. From his results thus experimentally obtained he suggests that this mixture might be tried in the sleeping sickness and perhaps in syphilis.

6. Tremor.—Panichi has studied the single contractions of the heart by means of Mosso's ergograph, and shows by illustrations the distinctive tremor met with in multiple sclerosis. His conclusions are that the peculiar type of the ergographic curve does not show itself in the individual contractions during fatigue, that the individual character shows itself on the contrary constantly during pathological processes, and that the ergographic curve brings into evidence the segmentary tremor in the single contractions in patients who are suffering

from multiple sclerosis.

7. Diseases of the Optic Nerve in the Early Stages of Multiple Sclerosis.-Schley declares that affections of the optic nerve are not only frequent in multiple sclerosis, but that they often precede by a longer or shorter time the appearance of other symptoms of the disease. The clinical symptoms are extremely varied, as are likewise the ophthalmoscopic changes. When such troubles appear as the first symptoms of multiple sclerosis the diagnosis is extremely difficult; among the conditions to be excluded are syphilitic neuritis, toxic neuritis from a variety of poisons, tumor of the brain, and, if the nerve looks normal, hysteria.

8. Ætiology of Diabetes Mellitus.—Bleibtreu reports two cases of diabetes mellitus in which pathological conditions in and about the pancreas were

demonstrated.

11. Idiosyncrasies.—Hess considers idiosyncrasies as racial and individual. The former, he thinks, can be ascribed to climate, geographical, and other appreciable influences; the latter he is unable to explain, but leaves it as a problem to the future.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT September 22, 1908.

Senility and Forensic Medicine, By A Nervousness and Nutrition in Children, By ASCHAFFENBURG. By SIEGERT.

Primary Tuberculosis of the Intestine in Adults, By FISCHER.

Epithelisation of Granulating Surfaces by Scarlet Red By KRACKA. Ointment.

The Fear of Tonsil Operations, By HOPMANN.
The Treatment of Diphtheria during the Years 1900 to 1908 in the Augusta Hospital at Cologne, By Berlin. Meningococci Sepsis, By Lifbermeister.

Recurrences in Croupous Pneumonia, By BUNGART.
Disturbances of the Conduction of Stimulus to the

By Mosbacher. 10. Congenital Syphilis and Progressive Paralysis,

II. Dangers in the Use of the So Called Acetic Essence (Eighty per cent. Acetic Acid), By BLEIBTREU.

12. Transportable Barracks That May Be Taken to Pieces,

13. Concerning the Certainty of the Histological Diagnosis of Tumors as a Basis for Radical Surgical Intervention. By Roysing.

14. Atropine Treatment of Ulcus Ventriculi,

By YON TABORA.

15. The Practical Importance of the Opsonic Index in
Tuberculosis,
By TURBAN and BAEK. Tuberculosis,

16. Cystoserum Prophylaxis and Pneumonia Infection,

2. Nervousness and Nutrition in Children .-Siegert finds the nervousness of children of the well to do to be dependent more or less on food containing a disproportionate amount of proteid matter and too few vegetables.

4. Epithelisation of Granulating Surfaces by Scarlet Red Ointment.-Kracka reports excellent results by the use of scarlet red ointment in combination with epithelial grafts on granulating surfaces. The ointment is thus prepared: Scarlet red is dissolved in chloroform and triturated until all the chloroform is evaporated, and is then mixed with sufficient yellow petrolatum to make an eight per cent. ointment.

5. The Fear of Tonsil Operations.-Hopmann declares that all tonsils which cause disturbance should be radically removed under general anæsthesia. Such an operation carefully performed is not more offensive and dangerous than the usual procedures for extirpation of the tonsil which, as a rule, result in, or have in view, only a partial re-

moval of the tonsils.

7. Meningococci Sepsis. - Liebermeister reports a case of this rare affection and states that only one other case is recorded in literature. symptoms are given as a hectic, irregular fever, pains in the joints, tension of the masculature, slight stupor, euphoria, emaciation, sometimes an eruption like roseola, hypostases in the lungs, all symptoms such as we are accustomed to see as accompanying symptoms of true epidemic meningitis.

11. Dangers in the Use of the So Called Acetic Essence.—Bleibtreu reports three cases of poisoning with Essigessenz, an eighty per cent. solution of acetic acid, one of which proved fatal. The patient who died had drunken two teaspoonfuls of the concentrated essence. Autopsy showed a severe burning of the œsophagus, trachea, and mucous

membrane of the stomach.

13. Histological Diagnosis of Tumors as a Basis for Radical Surgical Intervention .- Rovsing reports two cases in which amputation was recommended because of the histological diagnosis of the presence of tumors and declined by the patients who later made good recoveries, and proved that amputation was unnecessary. The conclusion drawn is that absolute reliance should not be placed on the histological diagnosis in doubtful cases.

ANNALS OF OPHTHALMOLOGY.

July.

1. Abscess in the Zygomatic Fossa,

By MATTHIAS LANCKTON FOSTER.

2. A New Applantation Ophthalmotonometer, By Edward B. Coburn.

3. The Import of Opsonins in the Eye,
By Professor zur Nedden.
4. Report of a Case Showing Manifest Canal of Cloquet,
By August C. Maisch.

5. Diseases of the Iris and Ciliary Body, By MATTHIAS LANGKION FOSTER reports a case in which a woman of middle age awoke one morning with pain in her left cheek and eye, some swelling of the side of her face, and some congestion of the eyeball. Two days later she was unable to open her mouth, and the physician who was called in could not force her jaws apart. This physician incised her gums above her badly decayed teeth, but found no pus. A day or two later the swelling of the side of the face and the protrusion of the eyeball had become great and were not lessened by the flow of pus that now appeared from the incision in the gum. About three weeks later incisions were made deep into the orbit in four places, but no pus found, and the accessory sinuses explored without result. A day or two after these operations pus appeared from the incision on the nasal and lower side of the eyeball, but this did not affect the protrusion of the eye. Later an abscess near the outer canthus was opened and a probe introduced led along the margin of the orbit to the nasal bone. Two months and a half after the onset of the trouble an exploratory operation in the orbit revealed a localized periostitis. Some five months later another operation revealed an opening through the sphenomaxillary fissure that led into an abscess cavity in the zygomatic fossa. This was curetted and cleansed, and the patient made a good recovery. Foster points out the difficulties that attend the diagnosis of this very rare condition, calls attention to the extremely misleading results of the earlier interventions in the orbit, all of which seemed to indicate that the focus of inflammation was to the nasal side of the eyeball, while in reality it was to the temporal side, and ascribes its ætiology to the lodgment of pathogenic organisms in the fossa, brought there from a neighboring carious tooth by the blood or lymph channels.

I. Abscess in the Zygomatic Fossa.-Foster

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBER-CULOSIS.

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908.

(Continued from page 912.)

Immunization against Tuberculosis.-Dr. A. CALMETTE and Dr. C. GUÉRIN, of Lille, said that in 1906 and 1907 they had published a series of papers which showed that it was possible to produce a marked resistance to artificial tuberculous infection by way of the digestive tract in young as well as in old animals. The resistance was obtained by feeding the animals with fine emulsions of bovine tubercle bacilli, virulent or modified by heating them to 70° C. In cattle a single ingestion of virulent bacilli usually sufficed to produce an infection so slight that, after reacting to tuberculin for one, two, or three months the animals ceased to react and became capable of resisting the large and repeated doses of tubercle bacilli which infected the control animals for more than a year. Animals "vaccinated" by this method continued to harbor virulent living bacilli in their mesenteric lymph nodes, which were capable of infecting guinea pigs for three

months. Later the animals got rid of the bacilli, which could not be found after a period varying from four to six months. If at the latter time the animals were tested by intravenous inoculations with strong doses of virulent bovine bacilli (five milligrammes), simultaneously with control animals of the same age, it was found that the controls always developed an excessively rapid granular tuberculosis, which proved fatal in from four to six weeks; while the "vaccinated" animals maintained every appearance of perfect health for at least eight months. Following this, and all at once, the immunity of these animals disappeared, as shown by the fact that some of them suddenly presented tuberculous lesions in various localities. Those that did not show lesions when killed were found to have mediastinal and bronchial lymph nodes which contained living bacilli that were virulent to guinea pigs, even though there were no other microscopic tuberculous lesions. It was evident, therefore, that the bacilli introduced into the veins of "vaccinated" animals were not absorbed. This fact explained the occurrence of living virulent bacilli in the bronchial and mesenteric lymph nodes of the cattle "vaccinated" by von Behring's method. So long as the animals harbored the bacilli they could not be considered to be really "vaccinated." They merely possessed a special resistance against fresh tuberculous infection, a resistance which was in every respect comparable to that which Koch first observed in tuberculous guinea pigs that had received subcutaneous injections of a second dose of virus. The second inoculation produced a local abscess which soon emptied itself, and the ulceration which followed healed while the first infection continued to produce its effect more slowly. The same resistance could be obtained by intravenously injecting healthy cattle with large doses of tuberculin two or three times at intervals of six or ten days. Animals prepared in this way reacted to the second or third injection as though they were tuberculous. If after the last injection of tuberculin an intravenous injection of five milligrammes of virulent bovine bacilli was administered, and healthy control animals were simultaneously subjected to the same treatment, the controls were attacked with a very rapid granular tuberculosis which proved fatal in from five to six weeks, while animals prepared by previous injections of tuberculin merely presented very slowly progressing tuberculous lesions. The same phenomena were observed in cattle already affected with spontaneous tuberculous lesions, and reacting to tuberculin. The intravenous injection of bacilli was never followed by the appearance of acute granular tuberculosis in those animals. There was no doubt, therefore, that tuberculous animals, and healthy animals prepared by previous large doses of tuberculin, possessed incomparably greater resistance than animals that were new to the intravenous test inoculation. It was evident that cattle vaccinated intravenously with human bacilli, or subcutaneously with bovine or human bacilli, and animals treated by introducing capsules containing cultures of tubercle bacilli under the skin, acquired, by an identical mechanism, a marked resistance to tuberculous infection. Cattle prepared in such a manner preserved the ap-

pearance of perfect health for a variable length of time; they often lost their power of reacting to tuberculin, but they were, nevertheless, carriers of tubercle bacilli, and were capable of contracting a chronic form of tuberculosis. It could not be said, therefore, that this was a true immunity. Similar observations had frequently been made in human beings. It was well known that a local suppurative lesion occurring in a consumptive improved the patient's condition and considerably increased his resistance; conversely, persons in whom pulmonary tuberculosis followed a rapid course had rarely suffered previously from suppuration of lymph nodes, bones, or cutaneous structures, except those in whom ill advised surgical operations might have produced a blood infection. It was recalled that certain clinicians maintained that they had obtained genuine improvement in tuberculous patients by a subcutaneous inoculation of cultures of virulent bovine bacilli or dead bacilli or cultures of human bacilli modified by being passed through the body of a cold blooded animal. The experimental facts above referred to were calculated to a certain extent to justify their assertions. Such a mode of treatment, however, was to be condemned, particularly since we possessed in tuberculin an equally efficient and less dangerous remedy by which the same object could be obtained.

Experiments in Immunization against Tuberculosis.—Dr. Julius Bartel, of Vienna, said that the behavior of tubercle bacilli that had entered the body through natural channels indicated a protective action against the infection on the part of the cells of the organs, and especially of the lymphocytes. In the test tube, it was possible, by the aid of the various organs, especially the organs of a lymphatic nature, to render virulent tubercle bacilli nonvirulent by confining them for some time within the organs at a temperature of 38° C. This was true of human as well as of bovine bacilli. In the course of attempts to produce immunity on this principle, animals had been successfully immunized against an infection which proved fatal to the control animals. Hence the attempt to utilize this action of the component cells of the organs on the tubercle bacilli as the basis of immunization against

action of the component cells of the organs on the tubercle bacilli as the basis of immunization against tuberculosis had proved successful.

A Contribution to the Study of Tuberculous Immunity.—Dr. JULES COURMONT and Dr. A. LESIEUR, of Lyons, said that opinions were divided as

to whether the reinoculation of tuberculosis at another point on the body of an animal that was already tuberculous would give a positive or a negative result. In their work for the purpose of throwing some light upon this subject, in which guinea pigs were used, they employed very virulent bovine bacilli, introducing them by the transcutaneous method of inoculation. If a guinea pig which had been tuberculous for from thirteen to twenty days was inoculated under the skin, the glandular reaction was feebler than it was in the control animals; but such results were not conclusive. When two transcutaneous inoculations were made at intervals of two weeks the reinoculation was negative; no local lesion was produced; the lymph nodes did not become tuberculous; they were scarcely hypertro-

phied; and they were never caseous. No general

effect was produced in the spleen or elsewhere. On the other hand, if the animals were allowed to live, the first inoculation ran its normal course, was accompanied by general lesions, and ultimately killed the animal. This proved that a lesion in the course of evolution prevented the development of a second inoculation. The experiments suggested the question as to the immunity to reinfection of a human being in the course of the evolution of a tuberculous infection.

Immunity Produced by the Inoculation of Increasing Numbers of Bacteria, Beginning with One Living Organism; its Therapeutic Application.—Dr. GERALD B. WEBB and Dr. W. W. WIL-LIAMS, of Colorado Springs, and Professor M. A. BARBER, of the University of Kansas, said that the attempts to produce lasting immunity against tuberculosis by the inoculation of dead tubercle bacilli or their products had not proved satisfactory, On the other hand, the inoculation of attenuated organisms had given some evidence of the production of a true immunity. The fact that probably sixty per cent. of all autopsies on human beings showed healed tuberculous lesions suggested the existence of a relative degree of acquired immunity to tuberculosis. They described the technique, perfected by Professor Barber, by which one organism could be selected from a culture and injected into an animal. They began their experiments with this form of vaccine by using anthrax bacilli in mice. The first dose given consisted of one thread of three organisms, and the dose was gradually increased up to 500 threads. In that way they produced immunity in mice to anthrax bacilli. They then employed the same technique for the production of immunity to tubercle bacilli in guinea pigs. They gave the animals one tubercle bacillus and gradually increased the number to over 10,000 bacilli at a dose, without producing tuberculosis in the animals. They then employed the method for the treatment of rabbits previously rendered tuberculous by feeding them with tubercle bacilli, with good results. Similar therapeutic tests had been made on human patients with results that were encouraging, but about which it was still too early to make very positive statements.

Tuberculins and the Measure of their Activity. -Dr. A. CALMETTE, of Lille, said that Koch's old tuberculin consisted of a simple glycerinated extract of bouillon cultures sterilized by heat and concentrated on the water bath down to one tenth of its original volume, then filtered through thick paper or a Berkefeld filter. It unfortunately contained a large quantity of albumoses, peptones, and salts of glvcerin, in addition to the secretory products of the tubercle bacilli. These foreign substances produced a temporary rise of temperature in nontuberculous subjects, thus masking the effects due to the tuberculin itself. This defect was overcome by mechanically crushing the dried bacilli and then separating the soluble from the insoluble products by washing with slightly alkaline water, thus producing the tuberculins known as TO and TR. Other tuberculins had been produced by various workers by treating the cultures with varying chemical substances, isolating a long list of products, "tuberculocidin," "tu-berculoplasmin," "tuberculosin," etc. These substances did not seem to possess the same physiological and therapeutic properties as the old tuberculin. Denys and Buden employed a culture filtered through a Chamberland candle, and still other workers produced a simple aqueous extract of bacilli without glycerin.

These various products showed the desire on the part of experimenters to obtain a substance that would have all the advantages of the old tuberculin without its disadvantages. The reader described a tuberculin which he had produced, known as tuberculin CL, which was so pure that it could be introduced into the veins of a healthy animal in large doses without producing an elevation of temperature. If the large doses used, fifty milligrammes, were repeated three times at intervals of from six to ten days, the animal was observed in from five to twelve hours after the third injection to react by a rise of 1.8° to 2.5° of temperature, just as if it were tuber-Following this phenomenon, the animals became highly resistant to artificial tuberculous infection. The intravenous injection of a dose of virulent bovine tubercle bacilli sufficient to produce an acute miliary tuberculosis in control animals in from four to six weeks merely resulted in a chronic, slowly progressing tuberculosis in an animal prepared with a previous injection of the tuberculin. product, tuberculin CL, was obtained by centrifuging entire cultures of the bovine bacillus in vacuo and at a low temperature. The product was then filtered in order to separate the bodies of the microorganisms, precipitated three times with alcohol and ether, redissolved in water, and dialyzed until all the precipitants and salts had been completely eliminated. The colloid substances which remained on the dialyzer were then again precipitated with alcohol and ether. and dried in vacuo. The active substance, therefore. was not modified by being subjected to heat or to chemicals aside from the precipitation with alcohol and ether. The activity of this product could be judged by comparing its action with that of any of the other tuberculins, or by the method of direct inoculation into the brain of a healthy guinea pig. By the latter method 0.8 of a milligramme sufficed to kill a healthy animal—one tenth as much as was required of the old tuberculin. The tuberculin CL was very well borne by patients, and those physicians who had used it therapeutically had obtained excellent results. It did not cure the disease, but it did delay its progress and seemed to give the person infected some additional resistance to its progress. The best results were obtained with a very small amount, 0.001 of a milligramme, as a primary dose, which was gradually increased until 0.3 of a miligramme was finally given. The injections were given at ten to twelve day intervals, so as to avoid a reaction of more than half a degree centigrade. It was considered wise to keep track of the opsonic index during the course of the treatment with this product, and to see that it was at least maintained at the same level after as before the beginning of the treatment. The tuberculin CL possessed an affinity for the lipoids that were almost constantly contained in the serum of tuberculous patients. The tuberculin was indicated for the determination of the affinity of the patient's serum for the secretory products of the tubercle bacilli, as well as for the diagnosis of the

The Therapeutic Value of the Tuberculins .-Dr. SAMUEL BERNHEIM and Dr. P. BARBIER, of Paris, said that the endeavors to discover a specific remedy for tuberculosis might be divided into those that sought to produce an active immunity, which necessitated a defensive reaction on the part of the patient with the production of antibodies, and those that endeavored to produce passive immunity, which did not require a reaction on the part of the patient, since the antibodies were already furnished to him. They believed that the future outlook for the usefulness of serum therapy in a chronic affection like tuberculosis was extremely doubtful. The methods of active immunization, on the other hand, held out more hope of success. They were divisible into, first, the inoculation of cultures of virulent or attenuated organisms, tuberculins; and, second, the inoculation of the soluble products of the organisms, toxines. The authors had made a critical study of seven different tuberculins, and as a result they concluded that there was great necessity for a prudent and methodical employment of the product. The reason for the failure of the old tuberculin was that it was employed in too large doses, so that dangerous reactions were produced. All recent authors were agreed that every appearance of reaction should be avoided. The small doses used at the beginning of the treatment should be very gradually raised, so that the immunization of the organism should progress by "mithrydatism," as Sahli called it. They believed that the opsonic method of Wright allowed one to observe exactly the degree of immunization that the patient had reached and the intensity of it. The method of determining the opsonic index was considered a valuable guide in deciding questions of doses. The chance of success in the treatment of tuberculosis with tuberculins depended upon the state of the resisting power of the patient. The opsonic method was considered to be of great value in the estimation of this power. The tuberculins which contained the intracellular toxines of the bacilli were probably the ones which would possess the most active immunizing proper-

Dr. ROBERT KOCH, of Berlin, said that it was possible to produce immunity in bovine animals by repeated inoculation. Although the animals were thus rendered immune, their lymph nodes contained active tubercle bacilli for a long time, and it was injudicious to slaughter them and use them for food. He was skeptical concerning the results of attempting to produce immunity in human beings by the inoculation of living bacilli, and he warned the profession against raising too much hope concerning the therapeutic value of this method. He had originally said that it was impossible to inject one tubercle bacillus, but after having seen the demonstration of the method of Professor Barbier he had been convinced, and expressed high praise of the ingenuity of the method.

Dr. É. A. TRUDEAU, of Saranac Lake, N. Y., said that to his mind it was a question whether the resulting condition of the system of those animals that had received inoculations of living bacilli was really one of immunity. He agreed that the bacilli lived in the tissues for a long time. There was some hope that a practical method would be found in the

future for producing immunity. Formerly, in his laboratory, "vaccines" were produced by attenuating the organisms after approved methods. The single bacillus inoculation was very ingenious and very interesting. In his experience he had never succeeded in obtaining results from "vaccination" after infection.

Dr. M. J. Rosenau, of Washington, said that anaphylaxis or supersusceptibility had a most important bearing upon susceptibility and immunity. The tuberculin reaction was an example of anaphylaxis. Upon applying the tuberculin test, a reaction at once was evidence that the patient was in the best condition to resist the infection, and that a local focus of the disease would probably not spread. It was an indication of power to produce a cure within the body of the individual showing it.

(To be continued.)

Petters to the Editors.

STATE EXAMINATIONS IN CHEMISTRY.

To the Editor:

Springfield, Ill., October 31, 1908.

I have no desire to prolong the discussion of the examination questions of the Illinois State Board of Health with Dr. W. G. Tucker, professor of chemistry in the Albany Medical College. The keynote of Dr. Tucker's remarks in the New York Medical Journal of October 17th has been that State examining boards should mould their questions according to the dictum of teachers of chemistry-of which he is one-and it is clear that he regards the board which fails to so frame its questions as hopelessly and irretrievably wrong. It is obvious that a controversy, however extended, between one who is confirmed in the belief that he is one of the elect, to dictate, and a body which this gentleman believes to be acting wisely only when following his counsel, could never reach a satisfactory conclusion.

Furthermore, I am not particularly desirous of discussing questions in chemistry with a gentleman who first maintains that a certain oxide of potassium called for in the examination questions of the Illinois State Board of Health has no existence, and who, when confronted with evidence that it certainly does exist, naively remarks that it is not mentioned in a dictionary which he possesses—apparently unconscious of the ludicrousness of the spectacle of a man who has taught chemistry for thirty years attempting to negate a chemical body simply because he is unable to find it in a dictionary he happens to own.

Aside from satisfying Dr. Tucker—which seems hopeless—there are one or two points of general interest in his letter which appeared in the Journal for October 17th. In this letter Dr. Tucker admits that questions similar to those with which he finds fault in the Illinois questions—and which he says are not a fair test of the qualifications of the medical candidate—are to be found in the examinations of the State of New York. He explains, however, that the New York examination overcomes this difficulty by asking more questions than the candidate has to answer. Just how the applicant

manifests his chemical education by the questions he does not answer is beyond the reach of ordinary comprehension. It will be noted that Dr. Tucker has carefully refrained from any criticism of these questions.

In straining at the proverbial gnat—in a studious effort to pick flaws in my communication—Dr. Tucker has quibbled over the technical meaning of the terms "formula" and "equation"—in which he may be technically correct—and has overstepped the bounds of courtesy in splitting hairs on English words. It was seemingly impossible for Dr. Tucker to fathom my meaning unless I meant "synonym" when I said "analogue." If he will lay aside his Watts and take up his Century for a moment, Dr. Tucker will find that I meant exactly what I said when I employed "analogue" to indicate "a word

corresponding with another."

Overlooking the fact that reformation, like charity, should begin at home, Dr. Tucker has journeyed across the Alleghenies to criticise alleged faults which might be found far nearer to his own doorpost. He has branded examining boards as "independent, impatient with interference, and arbitrary' because such boards have not at once abandoned all established methods to fall in line with the views of himself and his fellows. He has charged these boards with dealing with chemical fictions because they spoke of things which had not come within the range of his personal information or the covers of his dictionary. He declares that the members of his own limited pursuit should act as counsel and censors for examining bodies, failing to realize that a State may desire to determine through its own officers what sort of product the teachers turn out. He excuses his unfounded assertions upon the defects of a dictionary, and answers back with wearying quibbles over the niceties of verbal differentia-He assails me with the stinging indictment that, if I am not wrong, I am certainly ungram-

Reforms in medical examination have progressed rapidly during the past few years and are still progressing. But if examining boards should attempt to conform with the views of all those who designate themselves competent to dictate in such matters, the conditions would change from those which are reasonably satisfactory, if in some ways faulty, to a state which would be hopelessly chaotic.

Still, the Illinois State Board of Health will always welcome, as it has in the past, any suggestions or criticisms concerning the administration of the medical practice laws of Illinois, coming from medical men of this State. Many such suggestions have been tendered to the board, and some of those which have been adopted have contributed not a little to the efficiency of the service. The requirement of a properly authenticated photograph of the applicant, to insure identification—a requirement in which Illinois was the pioneer—was adopted at the suggestion of an Illinois physician who attended one of our examinations, while the "Illinois method" of properly crediting the candidate for his years of practice had its origin in a similar source. The character of the Illinois questions has been criticised more than once, but there has never been an unfavorable comment from Illinois physicians or

teachers as to the questions in chemistry—and Illinois is credited by those of reasonable judgment with many teachers of unusual ability and attainment. The first strictures and complaints have come from the far off Hudson.

Dr. Tucker has admitted that the Illinois questions, to which he takes exception, could doubtless be answered by "recent graduates and men fresh from the study of general chemistry"; but he reminds me that many men who appear for examination have been practising medicine for years, and it is upon these that he feels the questions work a hardship. He ignores the fact, of which he is possibly not aware, that Illinois makes due allowance for the years of practice of applicants for licensure, by a method which has received the hearty approval and commendation of the New York Medical Journal and other medical periodicals throughout the United States. Here I might ask Dr. Tucker what special provisions of credit the New York State Board of Medical Examiners makes for the older practitioners, for whose welfare he is so solicitous. Yet Dr. Tucker advises us that State boards which do not take the older practitioner into consideration need to be reformed, and he promises that reformation as an absolute certainty!

Recalling Dr. Tucker from his career in the field of foreign missions to other conditions in his own State which merit the attention of those of true missionary and reformatory spirit, it may be remarked that in the Empire State an osteopath sits on the State Board of Medical Examiners and grades the papers on physiology of the graduates of all of the New York medical colleges-including the Albany Medical College. No doubt this gentleman is qualified to perform the duties assigned to him—but an osteopath rating physicians' papers! Shades of Æsculapius, of Samuel Hahnemann, too -of the fathers of the New York medical profession-and then some! And this in the Empire State, in which it is not deemed meet or proper that the governor should appoint the State Board of Medical Examiners, and where, with infinite wisdom, the control of the practice of medicine is vest-

ed in the State University!

And if this were not enough, the professor of ophthalmology of the Albany Medical College may, almost any day, be called in consultation by an "optometrist," who, but a year ago, was a vendor of spectacles, but who now proudly displays a license granted to him by the sovereign State of New York,

and which was his for the asking.

The subject of reciprocity might well occupy a part of Dr. Tucker's consideration. He, in common with all members of the faculties of the New York medical colleges, must desire that their graduates, who have qualified before the New York State Board of Medical Examiners, be permitted to practise, without further examination, in any other State in the Union. If this salutary state of affairs could be established, it would become quite unnecessary for the physicians and teachers of New York to look with so much concern upon the examination questions of other States. Yet, through its arbitrary and indefensible position, the New York State Education Department makes it necessary for the New York licentiate to submit to examination in al-

most every State in which he may wish to practise. For some years past, the Regents of the State University have been empowered by law to enter into reciprocal relations with other States, but until recently they have steadfastly refused to avail themselves of this authority. Only within the past two years has New York reciprocated with any State west of the Alleghenies, and the first steps in this direction were taken with the greatest reluctance and unwillingness.

In his thirst for reform, it might be helpful for Dr. Tucker to recall the admonition of the Scripture, and to devote his energies to the beam in the medical eye of the Empire State, rather than to the

mote in the eyes of others.

JAMES A. EGAN.

*** Watts's Dictionary of Chemistry, as all chemists are aware, is not a mere defining dictionary. It is really a cyclopædia of chemistry, and it is quite reasonable to question the existence of any compound which is not mentioned in a recent edition of the work.

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Medical Greek. Collection of Papers on Medical Onomatology and a Grammatical Guide to Learn Modern Greek. By Achilles Rose. New York: Peri Hellados Publication Office, 1908. 12mo. pp. 262.

Dr. Rose is well known as an energetic and persevering advocate of the use of the Greek language in the formation of new scientific terms. In that contention he has the support of all scholarly members of the medical profession, but, like most reformers, he carries his propaganda to extremes, seeking to uproot terms which, faulty though they may be, have become too firmly established to be superseded, and deriding some formations which have been regarded as legitimate ever since we have

had a medical onomatology.

It is particularly hopeless, we think, for him to advocate the use of modern Greek pronunciation. If Dr. Herbert Krüger's exposition of that pronunciation, as translated by Rose (pages 247 et seq.), is correct, a language that for beauty and adaptability has commanded the admiration of the world has no sounds corresponding to those of our long a and long o, while η , t, ω , and ω are all pronounced like the English ee; that is, it is prodigal in characters, but miserly in sounds. However, Dr. Rose's efforts are reasonably sure, we hope, to result in some improvement of our present terms.

A Textbook of Operative Surgery, Covering the Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery. Designed for Practitioners and Students By Wigger Store Bushlay, M. D., Phar. M., Junior Surgeon, Touro Hospital, New Orleans; late Surgeon to Manhattan State Hospital, New York, etc. Third Edition, Greatly Enlarged. Containing 854 Illustrations. Philadelphia and London: W. B. Saun ders Company, 1908. Pp. 1206. (Price, \$6.50.)

This last edition of Dr. Bickham's very meritorious work is decidedly augmented in volume, but the book is not yet unduly large. The text is trustworthy and admirably clear, and the illustra-

tions, as before, are most excellent; Miss Fry's vivid drawings still pervade the volume, and Mrs. Farnsworth has contributed a number of exceedingly praiseworthy illustrations. We can only regret that it has been thought necessary to employ such excessively glazed paper. We believe that the cuts would have shown well on paper less trying to the eye. It is highly probable that many more editions of this admirable work will be called for.

A Manual of Midwifery. By Thomas Watts Eden, M. D., C. M. (Edin.), F. R. C. P. (Lond.), F. R. C. S. (Ed.), Obstetric Physician with Charge of Out Patients and Lecturer on Practical Midwifery and Gynæcology, Charing Cross Hospital, etc. With 42 Plates and 236 Illustrations in the Text. Second Edition. Chicago: W. T. Keener & Co., 1908. Pp. xii-555. (Price, \$3.50.)

Though the present edition of Dr. Eden's work bears evidence of careful revision, and though some portions of the text have been amplified, the book is not materially increased in size. It is still a convenient and very valuable condensed textbook of

obstetrics.

Diseases of the Eye. By S. Stephen Mayou, F. R. C. S., Late Hunterian Professor, Assistant Surgeon, and Pathologist, Central London Ophthalmic Hospital, etc. With 119 Original Illustrations and 8 Color Plates. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1908. Pp. xii-388.

Mayou has aimed to give students and practitioners a short, practical manual dealing more fully with external diseases and the commoner affections of the eye than with rare fundus conditions, and making a choice, for the reader, in methods of treatment, operations, and theories of disease. The result is a very readable and instructive manual. The illustrations are, in the main, excellent, particularly the black and white semidiagrammatic sketches of typical fundus changes and extraocular diseases. The reproductions of microscopical sections are on too small a scale to be readily intelligible. The discussion of disorders of motility is more than usually terse and clear, and the chapters on examination routine and on the typical ophthalmic operations are worthy of special mention.

Mikroscopie und Chemie am Krankenbett. Für Studierende und Aerzte bearbeitet. Von Professor Dr. H. LENHARZT, Direktor des Eppendorfer Krankenhauses in Hamburg. Fünfte, wesentlich umgearbeitete Auflage. Mit 85 Textfiguren und 4 Tafeln in Farbendruck. Berlin: Julius Springer, 1997. (Through G. E. Stechert & Co.) Pp. 405. (Price, \$2.25.)

This book appeared for the first time in 1893, and has since then seen four editions. The present edition has been brought up to date. Of very great value are four bacteriological tables in color, which are as natural as such microscopic colonies can be reproduced. When examined with a magnifying glass, the fineness of the illustration and the distinguishing features of the bacilli are even more pronounced. They represent twenty-one different kinds of bacteria, among them a very good illustration showing the *Spirocheta pallida*.

The text of the book is divided into six parts, with an introduction treating of the use of the microscope and an addendum giving in condensed form microscopical examinations of the secretions of the mammæ and of the vagina, of the products of abortions, and of cow's milk. Part i deals with the vegetable and animal microorganisms; part ii

with the examination of the blood; part iii with the sputum; part iv with the secretion of the mouth, stomach, and intestines; part v with the urine; and part vi with fluids obtained by puncture. Good black and white illustrations help the reader to understand the text.

The Principles and Practice of Gynacology. For Students and Practitioners. By E. C. Dudley, A. M., M. D., Ex-President of the American Gynacological Society; Professor of Gynacology, Northwestern University Medical School, etc. Fifth Edition, Revised and Enlarged. With 431 Illustrations and 20 Full Page Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1008. Pp. 13-17, 10, 200 Febiger, 1908. Pp. 13-17 to 806.

Dr. Dudley has so condensed certain parts of this standard treatise as to enable him to introduce considerable new matter without greatly increasing the size of the book. There are two entirely new chapters. One of them, an Introduction, is taken from the author's presidential address before the American Gynæcological Society, delivered in 1905. The other is on incontinence of urine in women. He objects to the formation of a bar by the injection of paraffin, intimating that it does not give good results and declaring that it endangers life by giving rise to pulmonary embolism. He describes an ingenious operation by advancement of the distal portion of the urethra, which he attaches in the neighborhood of the clitoris. He says that he has performed it many times with almost uniformly gratifying results.

Dr. Dudley's work is deservedly a favorite with the profession, and this new edition will be welcomed.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Intestinal Autointoxication. By A. Combe, M. D., Professor of Clinical Pædiatry at the University of Lausanne (Switzerland); Chief of Clinic for Children's Diseases; President of the Swiss Pædiatric Society. Together with an Appendix on the Lactic Ferments with Particular References of the Children Professor of the Children Prof ence to their Application in Intestinal Therapeutics. By Albert Fournier, formerly Demonstrator at la Sorbonne, Paris. Only Authorized English Adaptation. By William Gaynor States, M. D., Clinical Assistant, Rectal and Intestinal Diseases, New York Polyclinic, etc. With Eighteen Figures in the Text. Four of which are Colored. New York: Rebman Company, 1908. Pp. xviii-461. (Price, \$4.)

Médicaments microbiens. Bactériothérapie. vaccination, sérothérapie. Par les docteurs Metchnikoff, Sacquépée, Remlinger, Louis Martin, Vaillard, Dopter, Besredka, Wassermann, Leber, Dujardin-Beaumetz, Salimbeni, Calmette. Avec 26 figures dans le texte. Paris: J. Baillière et fils, 1909. Pp. xii-400.

Obstetrical and Gynæcological Nursing. By Edward P. Davis, A. M., M. D., Professor of Obstetricis in the Jefferson Medical College, Philadelphia; Obstetrician to the Jefferson Hospital, etc. Third Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 436. (Price, \$1.75.)

pany, 1908. Pp. 430. (Price, \$1.75.)

Refraction of the Eye. By Harry C. Parker, M. D., Clinical Professor of Ophthalmology, Indiana University School of Medicine, Indianapolis, etc. With One Hundred and Six Illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 201. (Price, \$1.25.)

A Textbook of Diseases of Women. By Charles B. Penrose, M. D., Ph. D., Formerly Professor of Gynæcology in the University of Pennsylvania; Surgeon to the Gynæcoan Hospital, Philadelphia. With Two Hundred and Twentyfive Illustrations. Sixth Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 550. (Price \$2.55.) (Price, \$5.25.)

Transactions of the Thirtieth Annual Meeting of the American Laryngological Association, held at Montreal, Canada, May 11, 12, and 13, 1908. New York: Published by the Association. Pp. 421.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending November 6, 1908:

| Smallpox | United | States. | | |
|-----------------------------------|--------|------------|-------|------------|
| Places. | | | Case | s. Deaths. |
| California-Berkeley | Oct. | 3-10 | I | |
| California-San Francisco | Oct. | 10-17 | | |
| District of Columbia | Oct. | 10-17 | | |
| Illinois—Chicago | Oct. | 17-24 | | |
| Kansas-Wichita | Oct. | 10-17 | | |
| New York-New York | Oct. | 10-17 | | |
| Ohio-Cincinnati | | 6-13 | | |
| Washington-Spokane | Oct | 10-17 | | Imported |
| Wisconsin-La Crosse | Oct | 10-17 | | |
| Smallb | ox—For | | | |
| CeylonColombo | Sent. | 5-19 | 31 | 1 |
| Denmark-Copenhagen | Sent. | 19-26 | | , |
| France-Paris | Sept | 26-Oct. 3 | | |
| India-Rangoon | | 12-19 | | 2 |
| Indo-China-Saigon | Sent | | | 3 |
| Italy—Palermo | | 12-26 | | 3 |
| Mexico Myarado | | | | , |
| Mexico-Tlacotalpan | Oct | 24 | 13 | Present |
| | | | | Tresent |
| Mexico—Vera Cruz Peru—Callao | Sent | 26 Oct 2 | | |
| Peru-Lima | | | | |
| Russia—Moscow | | | | _ |
| Russia—Woscow | Sept. | 19-20 | 10 | 7 |
| Russia—St. Petersburg | Эсрь. | -9 Oct | 10 | |
| Turkey—Constantinople Yellow F | Sept. | 20-001, 1 | | - 4 |
| | | | | |
| Brazil—Manaos | | | | 4 |
| Brazil—Para | Sept. | 20-001. 10 | - 4 | 4 |
| France-St. Nazaire | | | | 0 |
| Martinique-Fort du France | | | 8 | 1 |
| | aFore | | 6 | *1 |
| China-Hongkong | | | | |
| India—Rangoon | | | | Present |
| Japan-Kokura | | | | Present |
| Japan-Moji | Sept. | 23-29 | 15 | |
| Russia-General | sept. | 26-Uct. 3 | 3,251 | 1.571 |
| Straits Settlements-Singapore. | Sept. | . 5-12 | | 4 |
| | e-Fore | | | |
| Chile—Iquique | Oct. | 5 | 1 | |
| Egypt—General | Uct. | 7-13 | 7 | 5 |
| India-Rangoon | Sept. | 12-19 | | 5 |
| Indo-China-Saigon | | | | 1- |
| Peru-General | Sept. | 22-28 | 21 | 1.2 |
| Peru-Callao | Sept. | 22-28 | 3 | |
| Peru-Lima | Sept. | 22-28 | | -4 |
| | | | | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 28, 1908.

ANDERSON, JOHN F., Passed Assistant Surgeon. Granted seventeen days' leave of absence from November 5, 1908.

BAILEY, C. W., Acting Assistant Surgeon. Granted four-teen days' leave of absence from October 21, 1908. CARRINGTON, P. M., Surgeon. Leave granted October 6,

1908, for six days, amended to read four days, en route to join station

COMFORT, N. C., Pharmacist. Reassigned to duty, Quaran tine Service, Philippine Islands, to date from February

7. 1008. CREEL, R. H., Passed Assistant Surgeon. Directed to reor temporary duty in the Hygienic Laboratory, November 1, 1908.

EAGER, J. M., Assistant Surgeon General. Detailed to represent the Service upon the Committee on Revision of

the Nomenclature of Diseases, American Public Health Association.

ELDREDGE, M. B., Pharmacist. Granted seven days' leave of absence from October 24, 1908, under paragraph 210, Service Regulations.

GRIMM, R. M., Assistant Surgeon. Directed to proceed to Chicago, Ill., and report to medical officer in command of Marine Hospital for duty and assignment to quar-

IRWIN, FAIRFAX, Surgeon. Upon being relieved by Surgeon R. M. Woodward, directed to proceed to Arundel Cove, Md., and report to commanding officer of the

Revenue cutter Snohomish for duty.

Kerr, J. W., Assistant Surgeon General. Granted two days' extension of leave of absence from October 23, 1908.

LAVINDER, C. H., Passed Assistant Surgeon. Directed to proceed to Columbia, S. C., upon special temporary

Lyall, Robert, Acting Assistant Surgeon. Granted five days' extension of leave of absence from October 17,

days extension of factors of the state of th

to duty at Immigration Station, Ellis Island, N. Y., to date from March 12, 1908.

NAULTY, C. W., Jr., Acting Assistant Surgeon. Granted three days' leave of absence from October 19, 1908.
ONUF, B., Acting Assistant Surgeon. Granted twenty-seven days' leave of absence from November 1, 1908.
PREBLE, PAUL, Assistant Surgeon. Directed to report to the

medical officer in command at Marine Hospital, Baltimore, Md., for duty and assignment to quarters.

RIDLON, JOSEPH R., Assistant Surgeon. Directed to report to the medical officer in command at Marine Hospital, Stapleton, N. Y., for duty and assignment to quarters. Robinson, D. E., Passed Assistant Surgeon. Granted one

month's leave of absence from November 5, 1908. SMITH, F. C., Passed Assistant Surgeon. Directed to report for temporary duty in the Hygienic Laboratory,

November I, 1908. Sweet, E. A., Passed Assistant Surgeon. Leave of absence for two months from August 18, 1908, amended to read two months from August 25, 1908. Granted one month's leave of absence from October 25, 1908, on account of sickness

Wertenbaker, C. P., Surgeon. Detailed to represent the Service at the meeting of the Virginia State Medical Society at Richmond, Va., October 22, 1908.
WILLIAMS, L. L., Surgeon. Directed to proceed to Boston, Mass., and assume command of the Service.

Woon, CHARLES E., Assistant Surgeon. Upon arrival of Assistant Surgeon R. M. Grimm at Chicago, Ill., directed to proceed to Baltimore, Md., and report to the commanding officer of the Revenue cutter Seneca for

Woodward, R. M., Surgeon. Upon being relieved by Surgeon L. L. Williams, directed to proceed to Detroit, Mich., and assume command of the Service.

Appointments.

Dr. Paul Preble commissioned (recess) as Assistant Surgeon in the Public Health and Marine Hospital Service, October 20, 1908.

Dr. R. M. Grimm commissioned (recess) as Assistant Surgeon in the Public Health and Marine Hospital Service,

October 20, 1908.

Dr. Joseph R. Ridlon commissioned (recess) as Assistant Surgeon in the Public Health and Marine Hospital Service, October 20, 1908.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Cal., November 9, 1908, for the purpose of making a physical examination of a captain and a lieutenant of engineers of the Revenue Cutter Service. Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers of the Medical Corps of the United States Army for the week ending November 7, 1908:

DUTCHER, B. H., Major, Medical Corps. Arrived at Platts-burg Barracks, N. Y., for duty.

EBERT, R. G., Lieutenant Colonel, Medical Corps. Granted leave of absence for ten days.

LA GARDE, L. A., Lieutenant Colonel, Medical Corps.
Granted leave of absence for one month.

LAMSON, THEODORE, Captain, Medical Corps. Leave of ab-

sence extended one month. LE HARDY, J. C., First Lieutenant, Medical Reserve Corps.

Relieved from temporary duty at Fort Casey, Wash., and ordered to return to his proper station, Fort Lawton, Wash.

Morse, C. F., Captain, Medical Corps. Granted leave of absence for one month, to take effect about November 23, 1008

PATTERSON, R. U., Captain, Medical Corps. Relieved from duty in command of Company A, Hospital Corps, and ordered to report to the commanding general, Army

of Cuban Pacification, for assignment to duty,

Albort, E. M., Captain, Medical Corps. Assigned to duty
as commanding officer, Company A, Hospital Corps,
and ordered to proceed to Fort D. A. Russell, Wyo.

Navy Intelligence:

Official list of changes in the stations and duties of officers of the medical corps of the United States Navy for the week ending November 7, 1908:

BOGERT, E. S., Jr., Surgeon. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to the Marine Recruiting Station, New York, N. Y.

BUCHER, W. H., Surgeon. Granted sick leave for three months, when discharged from treatment at the Naval Hospital, Las Animas, Colo.

DESSEZ, P. T., Passed Assistant Surgeon. Detached from the South Dakota and ordered to the Pacific Fleet, will be from Son Exempleshed.

sailing from San Francisco about December 5th.
Norton, O. D., Surgeon. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to the
Naval Recruiting Station, New York, N. Y.
Stepp, J., Passed Assistant Surgeon. Detached from the

Denver and ordered home to await orders.

Von Wedekind, L. L., Surgeon. Detached from the Ala-

bama and ordered to the South Dakota.

Births, Marriages, and Deaths.

Married.

AUFHAMMER-Corey.-In Downingtown, Pennsylvania, on Monday, November 2d, Dr. Charles Howard Aufhammer and Miss Ada B. Corey.

Heiman—Henry.—In Baltimore, Maryland, on Wednesday, November 4th, Dr. Jesse Heiman, of Syracuse, New York, and Miss Louise Henry.

HIGGINS—MULVEY.—In Philadelphia, on Wednesday, October 28th, Dr. Joseph F. Higgins and Miss Mary Irene Mulvey.

Lawson—Love.—In Washington, D. C., on Saturday, November 7th, Dr. James Francis Lawson and Miss Lula Emma Love.

Died. BILLE.-In New Orleans, Louisiana, on Tuesday, October 27th, Dr. Waldemar Bille, aged seventy-three years.
CALLAHAN.—In Boston, on Thursday, October 29th, Dr.
Joseph Thomas Callahan, of Woburn, Massachusetts, aged

thirty-five years. CORCORAN.-In Brooklyn, on Thursday, November 5th,

Dr. Walter J. Corcoran, aged fifty-two years.
Davis.—In Colonia-Pachico, Mexico, on Friday, October 23d, Dr. Samuel T. Davis, of Lancaster, Pennsylvania.
Doherty.—In Chicago, on Tuesday, October 27th, Dr.

DOHERTY.—In Chicago, on Tuesday, October 27th, Dr. David Joseph Doherty, aged fifty-eight years.
FOWLER.—In Brooklyn, on Friday, October 30th, Dr. Chauncey B. Fowler, aged sixty years.
GILDAY.—In New York, on Thursday, November 5th, Mrs. Walter C. Gilday, wife of Dr. Walter C. Gilday, aged thirty-three years.

hirty-three years.

GILLETTE.—In New York, on Saturday, November 7th,
Dr. Walter R. Gillette, aged sixty-seven years.

JACKSON.—In Fall River, Massachusetts, on Tuesday, October 27th, Dr. John H. Jackson.

KOHLER.—In New Holland, Pennsylvania, on Saturday, October 31st, Dr. John B. Kohler, aged fifty-seven years.

October 31st, Dr. John B. Kohler, aged fitty-seven years. LEWIS.—In Fayetteville, Arkansas, on Sunday, November 1st, Dr. F. L. Lewis, aged sixty-seven years.

MACGILL.—In Frederick, Maryland, on Thursday, October 30th, Dr. Lloyd T. MacGill, aged seventy-nine years.

O'NEILL.—In Syracuse, New York, on Wednesday, November 4th, Dr. John O'Neill, aged twenty-three years.

PARKER.—In Chicopee, Massachusetts, on Thursday, October 20th, Dr. Francis E. Parker, aged thirty-eight years.

REHFUSS.—In Philadelphia, on Saturday, October 31st,

Dr. Emil G. Rehfuss, aged forty-seven years.

REHFUSS.—In Philadelphia, on Saturday, October 31st, Dr. Emil G. Rehfuss, aged forty-seven years.
Sahin.—In Kansas City, Missouri, on Sunday, November 1st, Dr. Almer L. Sabin, aged fifty-seven years.
Steickler.—In Colorado Springs, Colorado, on Monday, October 26th, Dr. William M. Strickler, aged seventy years.
VARY.—In Chicago, on Wednesday, October 28th, Dr. William E. Vary, aged eighty-one years.

New York Medical Journal

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WHOLE No. 1564.

Mectures und Addresses.

THE NATURE OF CARCINOMA IN GENERAL, AND THE EARLY DIAGNOSIS OF GAS-TRIC CARCINOMA.*

> By JAMES M. ANDERS, M. D., LL. D., Philadelphia,

Professor of Medicine and Clinical Medicine of the Medico-Chirurgical College; Consulting Physician to the Jewish Hospital;
Consulting Physician to the Widener Home for Crippled Children, Etc.

While it may appear to my hearers to have been inexpedient to select a subject which has been the theme of inquiry by so many men of mark, no one can, for a moment, impugn its absolute worthiness and transcendent practical interest and importance.

From the standpoint of treatment, it is all important that an early recognition of gastric carcinoma be rendered feasible and practicable. The treatment has been rescued from mere empiricism by the art of surgery, but clinicians have in the past been unable to demonstrate its existence in the incipient stage. The writer is of opinion that more substantial progress in the clinical study and investigation of this disease, especially from an ætiological viewpoint, would occur if a definite hypothesis as to its nature were more universally adopted.

A theory, if it were applicable to all the known facts bearing upon the cancerous process in general, would attract a host of followers and most probably lead to the discovery of important fundamental truths, as well as to correct generalization regarding the pathogenesis of the disease. Such a theory would naturally stimulate thought and investigation, but it would as naturally fall to the ground as soon as confronted by real contradictory evidence, or, in other words, upon being found to be defective. This matter of the crystallization of the thought and investigations concerning carcinoma into one har-monious theory would result in advancement and achievements in the way of practical results hitherto unparalleled.

Recent personal observation joined with certain theoretical considerations have led to the conviction that all the ascertained facts relating to gastric carcinoma harmonize with the microbic theory of disease. The clinical and pathological phenomena observed are clearly referable to a common origin, a bacillus or parasite. Indeed, many experimentalists have taken cognizance of this truth and taken their bearing accordingly, so that eminently satis-

factory expositions of the general subject are to be found in recent medical literature. Unfortunately, however, the medical profession is still confronted with a mass of conflicting views and hypotheses.

It must not be understood from a mere statement of the general proposition that we have definite proof of its accuracy, for, if that were true, it would at once pass beyond the realm of hypothesis into that of established fact. It has been well said that astronomy is everlastingly indebted to the Newtonian hypothesis of gravitation, and chemistry no less to the atomic theory. A proper conception of these fundamental truths constituted the basis of a working hypothesis, whose results fairly revolutionized science. It is earnestly to be hoped that a rational system of investigation be widely adopted in the study of carcinoma; this should be produced and fastened upon with energy to supersede the variable methods in vogue at date of writing. am not promulgating any new idea, but merely attempting to indicate the necessity for the formulation of a safe, acceptable theory with a view to bringing about concentration of professional effort and energies. What is needed, then, to reduce the problems involved to rigid scientific scrutiny is general and united action.

I would here briefly state a series of facts, which show that the disease under consideration and microbic diseases as a class are identical as to cause and operation. These are: (1) Successful transplantation of malignant tumors in mice, rats, and dogs (Hanan, Loeb, and others). (2) Contagiousness of carcinoma in human beings as shown by transference of the virus by means of instruments, e. g., carcinoma developing along the track of the trocar which has been used to relieve ascites in hepatic carcinoma. (3) By artificial selection, the virulence and transmissibility of a given strain can be increased (Ehrlich). (4) Toxines which are most probably bacterial are generated in carcinoma. (5) Presence of Plimmer's bodies, and of a spirochæta, which is more plentiful in the actively growing portions of the tumor. (6) The ability to immunize mice with a serum and to cause resorption of small tumors in some cases (Jensen, confirmed by Ehrlich). (7) The discovery in a certain fungus of the intermediate host of the protozoan parasite of carcinoma, and the power to inoculate with cultures grown on the mucor racemosus with the production of malignant tumors, which seem to be identical with those described by Jensen; their malignant character confirmed by the microscope, by their transmissibility, by transplantation of cells to other individuals

of the same species, and by the development of me-

"The address in medicine, read before the Pennsylvania State Medical Society, September 15, 1908.

tastases (Schmidt) (1). (8) An actively growing mouse tumor can at times be transplanted to rats, where it will grow luxuriantly for a week or ten days until antibodies are formed, when growth ceases and it becomes necrotic and is sloughed off or is absorbed; such rats are immune to subsequent inocu-(9) Experimental evidence that immunity is secured in certain affected animals by the development of some immunizing substances which enable the organism to resist carcinoma either temporarily or permanently (spontaneous cure). (10) General and local reactions occurred in cancerous patients following the injection of killed pure cultures of the parasites; the reaction was absent in healthy subjects (Schmidt). (11) A cage has been shown to be the source of infection of upward of sixty cases of tumors in white mice. Moreover, in certain breeding establishments carcinoma occurs endemically (Gaylord and Clowes, and others). (12) The prevention of transmission by contagion through sterilization of cages in which infected rats had been kept (Gaylord and Clowes) is highly suggestive. (13) Loeb calls attention to the endemic occurrence of carcinoma of the inner angle of the eye among cattle on a ranch in Wyoming, while neighboring ranches were practically free from the disease. (14) Epidemics of carcinoma in certain towns and the peculiar distribution of cancerous cases in certain (15) So called "cancer houses" for human beings have probably been proved to be a source of infection (Loeb, Borrel). (16) The combination of the characteristic pathological changes, including metastases and the clinical symptoms and course, points strongly to the infectious nature of carcinoma. (17) Autolysis of a recurrent carcinomatous nodule of the breast (Simon), and improvement in general health and strength from the use of injections of anticancer serum in inoperable carcinoma of the breast, pancreas, and pylorus (v. Leyden).

The foregoing results of observations by different competent investigators, who have labored with sustained earnestness of purpose, strikingly confirm the hypothesis here promulgated. There are a number of diseases which are universally regarded as infectious because the contagion is known to be there, e. g., measles, smallpox, but the specific germs have not as yet been isolated. Moreover, the profession now universally recognizes the existence of predisposing factors in the causation of carcinoma. These are previous injury or ulcerations or abrasions of the skin and mucous surfaces.

In this connection the views of Mayo Robson concerning the influence of such cutaneous and mucous lesions as precancerous states are significant. He writes: "In certain situations precancerous conditions can be readily recognized; this especially applies to the tongue, lips, larynx, uterus, and the skin, suggesting strongly that cancer is a new implantation on a prepared ground; probably, if we could only find it, every cancer, whether external or internal, follows on a precancerous condition, such as cancer of the gallbladder on ulceration produced by gallstones, cancer of the stomach on chronic gastric ulcer, epithelioma of the penis on irritation under a phimosis, cancer of the bladder on papilloma or on ulcers due to calculi, and cancer of the rectum and colon on stercoral or other ulcers" (2).

Surely, the field of investigation under discussion is fertile and promising for the future and one that should stir the energies of all investigators in search of truth, of all things upon earth the most precious. Incidentally, it might be justly argued that the facts transmitted to us as the outcome of the prolonged studies of the observers cited above indicate the necessity for the enforcement of isolation and sterilization in the treatment of human cancer cases.

EARLY DIAGNOSIS OF GASTRIC CARCINOMA.

The greatest strides made in recent times in the recognition of early cases of gastric carcinoma have been limited to the laboratory and surgical phases of the subject. The clinical significance of the laboratory findings, however, differs according to different observers; they are not to be isolated from the symptoms and course of the disease, but judiciously balanced and compared with the clinical characteristics and the steady progression with occasional slight remissions of the disease. Chase says: "Those who suppose that a positive or negative diagnosis may be made on the strength of the chemical examination of the gastric juice, should at once disabuse themselves of this idea."

The grouping of features which renders a given case suspicious is not constant. The closest scrutiny of all the symptoms, signs, and laboratory findings, as well as the most judicious balancing of the data entering into the previous history by an eminently skilful diagnostician, is an absolute necessity before a probable diagnosis can be reached.

The general practitioner who fails to avail himself of an expert medical opinion in cases in which he has the slightest reason to suspect this disease, is scarcely alive to his responsibilities and obligations to his patients. It is deplorable, but nevertheless true, that carcinoma cases are too often permitted to reach an advanced stage before expert services, usually surgical, are sought after. Touching the infrequency of early diagnosis, a lack of thorough, systematic study at short intervals is also a factor that plays an influential part. The practitioner should recognize an added necessity for early diagnosis; to wit, while radical extirpation or partial gastrectomy is advisable in early cases and offers promise of more or less aid, late operations, too often undertaken, almost invariably serve to hasten death. Much has been said in recent medical literature, not without cause, about useless gastric surgery; it is in a measure, at least, the result of too little time being allowed for carrying out medical means of diagnosis. In this connection Stone (3) pertinently remarks: "There probably will continue to be found much wisdom in the old adage, which refers to making haste slowly, for otherwise surgery will suffer the reaction which always accompanies the less careful diagnosis of cases in the enthusiasm of prospective cure."

Regarding the anamnesis, it is to be recollected that there is often a discoverable element of relationship existing between gastric carcinoma and ulcer. If there is a clear history of previous ulcer, this fact bears tremendously upon the case, and should tend to strengthen the slightest ground for suspicion in the mind of the examiner. The so called precancerous stage is now easily recognized

in a considerable proportion of the cases. From the operating theatre and deadhouse come reliable recent statistics to the effect that carcinoma develops from chronic ulcer in upwards of one half of all

It is not my purpose, however, to show the frequency of this carcinomatous implantation upon ulcer, an aspect of the question that has been dealt with by others, notably by my distinguished colleague, Rodman (4), but rather to emphasize the importance of its recognition and urge either extirpation or gastroenterostomy whenever ulcer proves rebellious to medical treatment. More lives are thus savable than by operation, however early performed in the course of carcinoma. Before leaving this branch of my subject, it should be pointed out that Mayo and Franklin (5) found "in an experience of 1,112 duodenal and gastric operations, only one instance in which carcinoma had developed upon the base of a duodenal ulcer. That carcinoma of the duodenum, however, is rare no longer admits of a rational doubt.

The early symptoms in cases of carcinoma originating in ulcer display certain distinctive peculiari-Now that the frequent association of the two processes, carcinoma and ulcer, is well recognized, the symptomatology of carcinoma, especially that portion pertaining to the laboratory findings, requires recasting. When malignant degeneration of a gastric ulcer sets in, both dietetic regulations and medicinal treatment at once fail to relieve the subjective symptoms, which, therefore, persist and become aggravated with the progress of the case. Pain is apt to increase in intensity, and it may either continue to exacerbate into distinct paroxysms or radiate to the thorax (ribs) and upper lumbar region. A dislike, or even loathing, for food develops almost as soon as the cancerous process commences. Hyperchlorhydria is present and may be pronounced; on the other hand, achlorhydria is perhaps oftener found, and, if known to have been preceded by hyperchlorhydria, becomes at once of the utmost diagnostic importance.

Hæmatemesis may occur early, and recur at more frequent intervals, particularly occult bleedings, in carcinoma grafted upon ulcer. The general features likewise undergo modification; there ensues progressive wasting, anæmia, and debility, which should early arrest the attention of the clinician. According to my observation, the complexion soon assumes a somewhat muddy hue.

The foregoing changes in the clinical picture should excite suspicion of beginning carcinoma and lead to exploratory operation. It should be emphasized that the wasting is not invariably progressive and the same is equally true of the anæmia. In a case under my cate recently a gain of five pounds in bodily weight was noted and maintained for a period of three months; this was followed by rapid emaciation and death at the end of two months. The carcinomatous nature of some cases, which presented all of the classic features of gastric ulcer, is sometimes first revealed by an examination of the growth following operative intervention. Clinicians must in future concern themselves with the subject of the prevention of carcinoma through the timely removal of this potent, predisposing factor; it is due

the public to receive the benefits of our accumulated knowledge in this respect.

The mode of onset of gastric carcinoma as an idiopathic affection presents a somewhat different clinical picture, though variable in different cases according as it involves the pylorus, cardia, or fundus of the organ. In this form the principal subjective complaints are too vague and indefinite to be of diagnostic service. If, however, anorexia and pyrosis develop somewhat abruptly and lead to loss of weight and vigor and early anæmia, gastric carcinoma should be thought of and further observations both from the clinical and laboratory side should be promptly made. Epigastric pain is present in about eighty-five per cent. of cases; it is dull and boring in character, more continuous and less subject to exacerbations than in ulcer, as a rule, and more severe than in chronic gastritis. In carcinomatous stenosis of the pylorus the pain may soon become cramplike in character due to peristalsis. Although far from common, pain may be reflected to the left subscapular region. Strictly, pain rarely becomes sufficiently marked to attract attention during the incipient stage of the disease.

the pylorus, leading to rapid stenosis, but not, as a rule, until after pain has persisted for a considerable period, hence is of less diagnostic importance than the latter symptom in the incipient stage. Neither is it so characteristic with regard to frequency of occurrence, and the character of the vomitus, as at a later stage when large amounts of offensive decomposing material are ejected. It is to be recollected, however, that evidence of gastric stagnation, even though of moderate degree, is one of the few cardinal symptoms of the beginning of this grave

Occasional vomiting may be noted in carcinoma of

disease. In carcinoma of the cardia, mere regurgitation of solid food, almost immediately after it is ingested, is highly significant and it is associated with rapid wasting, anorexia, pyrosis, decided early anæmia, and loss of vigor. The vomiting of blood occurs in about one third of the cases, but hæmatemesis is not an initial symptom, being due to ulceration of the new growth, and hence practically valueless for diagnosis of early cases, particularly in the scirrhous variety.

Among instrumental aids to the early recognition of gastric carcinoma, the Röntgen rays take a prominent place. By this means an expert can ascertain not only the size and position of the stomach to a nicety, but also the degree of motility, the amount of accumulated gas, and any retention of food that may be present. More than this, the Röntgenologist can detect the presence of a new growth often before it can be palpated. Such studies have been made by a number of investigators, prominent among whom are Holzknecht, Jonas (6), and Pfahler (7).

To an expert a new growth makes itself evident by a change in the contour of the stomach wall; by disturbances of the peristaltic waves at certain points; at times by rigidity and contraction of the stomach wall; by adhesions which prevent the free motility of the stomach when the abdominal walls are contracted, or when the position of the patient is changed; and, finally, in some cases, by obstruction to the passage of food.

A brief narration of a case in my service in the

wards of the Medico-Chirurgical Hospital, Philadelphia, will serve to illustrate this method of investigation.

The patient, Mr. J. B., aged sixty-seven, was admitted May 7, 1908. For a year previously he had suffered from nausea and occasionally vomiting, which occurred soon after taking food. In the middle of December, 1907, he began to vomit blood streaked mucus, the emesis being usually preceded by pain. He complained of constant eructations of gas, and had lost thirty pounds in weight in six months. Gastric analysis showed no free hydrochloric acid, but a trace of combined hydrochloric acid. Neither lactic nor butyric acids were present. There was no abdominal tenderness and no palpable tumor, but the area of gastric

tympany was much diminished.

The x ray examination, made by Dr. G. E. Pfahler, showed the stomach to be extremely small, not holding showed the stomach to be extremely shall be over ten ounces. The food passed out of the pylorus as fast as it entered at the cardiac orifice, showing that the pylorus was abnormally patulous. The stomach was situated abnormally high; could not be moved by the muscular contractions of the abdomen; could not be distended, and showed no peristaltic waves; all of which conditions indicated that the walls of the stomach were rigid and adherent and most probably infiltrated with carcinoma. The first six inches of the duodenum were found to be dilated; this was thought to be produced probably by either adhesion or infiltration of the duodenum. An exploratory operation performed three days later by Dr. W. L. Rodman confirmed the above findings. A duodenojejunostomy was performed.

I need not refer to palpable tumor, believing as I do that this belongs to a more advanced stage than that which is being considered in this discussion. It is true, unfortunately, that sufferers from gastric carcinoma often fail to present themselves to a physician for examination and treatment until tumor and most of the other characteristic features are in evidence

Gastric lavage may prove a valuable diagnostic aid in cases in which stagnation occurs early, enabling, as it does, the clinician to determine the character of the retained stomach contents, which in carcinoma often show decided evidences of decomposition. A physical examination often reveals early epigastric rigidity, a sign of decided importance. Ackerman and Gompertz (8) have found on microscopical examination that, in stagnation of the fasting stomach contents, Oppler-Boas bacilli replace lactic acid and sarcinæ. The precise worth of this test in early cases is unknown, but is most probably inconsiderable. Of greater diagnostic value is the detection of pus cells on microscopical examination of the gastric contents. In the first stage of the form of gastric carcinoma under consideration, free hydrochloric acid is diminished, but is not absent until nearly or all of the cardinal features put in an appearance, or at a much later period of the disease.

A progressive decline in the percentage of free hydrochloric acid for a month or longer, as determined by an analysis of the stomach contents at intervals of a few days, is strongly corroborative of this disease. In this connection, the importance of the work of Benjamin Moore (9), who first showed that diminished secretion of free hydrochloric acid also occurs in carcinoma located in other organs than the stomach, can not be overrated. Diminished gastric acidity is further noted in many noncancerous conditions, so that carcinoma of the stomach exercises no specific influence on the acid secreting power

of this organ.

It is to be emphasized, however, that the reduction

in the percentage of free hydrochloric acid is more striking and more constantly progressive in gastric carcinoma than in other conditions. Traces of lactic acid may be present in incipient malignancy, but, as a rule, this substance is first detectable long after the close of this stage of the affection.

Occult blood in the stomach contents and stools, which does not occur in healthy subjects, is almost uniformly present in this disease, but, according to personal experience, not so constantly as could be desired in the early stages. Occult hæmorrhages also occur, though less frequently, in gastric ulcer and in simple hyperchlorhydria. The foregoing facts go to show that occult bleedings when present possess mere confirmatory value in early diagnosis.

Gastroscopical examination has been advocated for the early detection of carcinoma of the stomach. Chevalier Jackson (10) offers gastroscopy as a substitute for an exploratory operation in cases in which the patient declines to submit, "or in which the surgeon or the physician considers a simple procedure almost free from risk preferable to operative ex-Unfortunately, there is still a large and ploration." unexplorable area by this means, although the fundus and the pyloric ends can be brought within range of the gastroscope by the assistance of an expert abdominal manipulator. While the results thus far obtained from gastroscopy are decidedly meagre, its usefulness could be greatly increased as the result of increased skill and practical knowledge. The blood manifests no distinctive features in the earlier stages. With the progress of the disease, certain findings, such as an unusually low color index, marked reduction of the erythrocytes and leucocytosis, in which the polymorphonuclear cells are especially increased, are in evidence.

Certain ætiological factors deserve to be taken into account. Heredity can be traced in about ten per cent, of the cases. While the influence of heredity is undoubted in some instances, its potency as a causative factor is often overemphasized by medical writers. It should not be held to exercise a causative influence in a given case, unless multiple cases have occurred among the ancestors.

Age is a well established, predisposing cause, seventy-five per cent. of 2,038 cases analyzed by Welch having occurred between the fortieth and seventieth years. On the other hand, the disease is far from uncommon prior to the thirtieth year, e. g., in 2.8 per cent, of Welch's series of cases (quoted above), and 2.5 per cent. in 1,069 cases collected by Osler and McCrae (11). Again, there are valid records of six cases, at least, before the tenth year.

While I think practitioners, as a class, should guard against the mistake of attempting to arrive at an early positive diagnosis before requesting surgical aid, it is undeniably true that the services of the expert diagnostician are required first and foremost to detect the clinical indications on which a reasonable suspicion may be founded. Indeed, one of the most important means at our disposal with which to clear the diagnosis of dubious cases, and one not to be lightly regarded, is surgical exploration. W. J. Mayo has well said: "A suspicion of cancer of the stomach, which can not be dissipated by known methods within a short time, should lead to exploration." Of 313 operative cases, he found KNOTT: IRON.

that only twenty-six had been diagnosticated early enough to permit of radical extirpation. This fact alone should tend to stimulate clinicians to the greatest activity in their efforts to detect the earliest clinical manifestations on which a probable diagnosis or a justifiable suspicion calling for surgical inter-

vention, can be based. In the presence of the following grouping of features and conditions, or even a majority of the same, an exploratory operation should be advised to be followed by radical extirpation in case the new growth be encountered: (1) If the patient's age is between the forty-fifth and seventieth years, the period of life in which carcinoma develops in the majority of cases. (2) If slight or moderate indications of secondary gastrectasis exist, confirmed by x ray and physical examinations. If the chemical examination repeatedly during the course of three or four weeks shows marked subacidity or absence of hydrochloric acid and particularly if lactic acid be also found. (4) If there is wasting without other assignable cause or causes, and moderate anæmia with low color index and possibly leucocytosis. (5) If the condition resists treatment for several weeks. (6) If epigastric rigidity is present. (7) If a constant positive blood reaction is given by the stools with good motor functioning on the part of the stomach and neither free hydrochloric nor lactic acid be present (Osler).

Carcinoma should, however, not be made to cover mere groups of gastric manifestations. There must be a close and systematic scrutiny of individual symptoms and a subsequent correlation of the same, and to this end the services of an expert diagnostician are required. The study of these cases must be conducted on broad lines and the various refined diagnostic methods before referred to, e. g., x ray examination, chemical tests, microscopical studies, and the like, must never be omitted.

While the laboratory and other tests may prove nothing, they are of confirmatory value if systematically repeated. Moreover, chemical examinations of the stomach contents are to be repeated systematically at intervals of a few days for a couple of weeks or even months, in which case they may, if the results are fairly uniform, support and strengthen the inferences to be drawn from the rational symptoms and signs, thus forming a grouping of features upon which incipient carcinoma may be justly suspicioned. The tests must be made by one who has expert knowledge of the subject of laboratory methods and technic, one who is also a careful, trustworthy worker. It would be unwise to attempt to establish a time limit for making a diagnosis; this period must be variable for individual cases depending on many circumstances, e. g., differences of regional selection of the new growth, the pathologic variety of carcinoma present, and the like, but it should not exceed four to six weeks as a

Again, since there is no assemblage of diagnostic features that enable the clinician to recognize with certainty the early organic changes in carcinoma of the stomach, he must, nevertheless, before proceeding to a final judgment, attempt a careful and painstaking differentiation from other gastric affections, e. g., gastric ulcer, chronic gastritis present-

ing symptom groups bearing a more, or less close resemblance to carcinoma.

Finally, an early diagnosis by medical methods in the present state of our knowledge is out of the question, but it is practicable, save only in cases marked by extreme latency, to assume the existence of strong suspicions by weighing the available facts and data. Under these circumstances, delay in the matter of requesting the application of surgical means is inexcusable in view of the amenability of incipient malignancy to surgical art, in some cases, at least.

- I. Münchener medizinische Wochenschrift, xxvi, No. 10, and Journal of the American Medical Association, April
- 2. Mayo Robson. Cancer of the Stomach, p. 50. 3. American Journal of the Medical Sciences, October,
- 1907.
 4. How Frequently Do Gastric Ulcers Become Carcinomata? Read before the American Surgical Association,
- at Richmond, Va., May 4, 1908.
 5. American Journal of the Medical Sciences, October,
- 1007, p. 521. 6. Moritz Perles. Die radiologische Diagnostik der intra-und extraventrikularen Tumoren und ihre specielle zur Frühdiagnose des Magencarcinoms, Verwertung Vienna, 1908.
- 7. Journal of the American Medical Association, De-
- cember 21, 1907.

 8. Diagnostic Value of the Microscopical Examination

 Medical Record, April of the Fasting Stomach Contents. Medical Record, April
- 9. Proceedings of the Royal Society, 1905, lxxvi, p. 138, and Biochemical Journal, 1906, i, p. 274; Journal of the American Medical Association, March 2, 1907.

 10. Gastroscopy, Medical Record, April 6, 1907.

 11. New York Medical Journal, April 21, 1900. p. 581.
 - 1605 WALNUT STREET.

Original Communications.

IRON:

Metallic and Magnetic, Physical and Philosophical; Its Place in Mythology, in Demonology, in Astrology, in Medical and Surgical Therapeusis.

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The other most conspicuous physical characteristic of the mineral loadstone is, of course, its polarity; and it is difficult to conceive how it can have successfully escaped the notice of all the natural philosophers and practical navigators of the Mediterranean borders down through all the centuries of their radiant classical enlightenment, although we are told there is but one extant classic phrase which can possibly be forced, or twisted, into a "magnetic polar" reference; the Hic ventus jam secundus est cape modo versoriam of Plautus. It need hardly be added that the majority of literary critics and historians of science do not accept the view that the "versoriam" of the early classic really referred to a ship's compass; while the average many are content to leave the credit of the invention of the mariner's "carde" with the Chinese, and the semiinspired few would claim the recognition for the all knowing Solomon of having (in common with every other existing item of human knowledge, physical and metaphysical) adapted his inspired familiarity with the properties of the loadstone to the enrichment of his kingdom, the beautification of his metropolis, and the ultimate glorification of the God of Israel. For—did he not send forth his ships on a three years' voyage unto Ophir, and how could an ocean pilgrimage which occupied so long a period be successfully conducted without the aid of a mariner's compass???

A curious mediæval idea which must have originally been evolved in this connection, was correborated by the famous Spanish Jesuit, Eusebius Nierembergius; and is thus noticed (and commented on) by Sir Thomas Browne: "that the body of man is magneticall, and being placed in a boate, the vessell will never rest untill the head respecteth the north; if this be true, the bodies of Christians doe lye unnaturally in their graves, and the Jews have fallen upon the natural position, who in the reverence of their temple, do place their beds from north to south."

The physical peculiarity manifested in the mutual influence of the mineral loadstone and the metallic iron must have strongly impressed the observant "Father of Medicine" himself, who refers to it in the forcible phrase: λίθος δστις τὸν σίδηρον άρπάξει (lapis qui ferrum rapit). And his great apostolic exponent (Claudius Galen) uses the almost correspondingly emphatic verb Eductiv. The language of Aristotle, on the other hand, displays the descriptive moderation which characterizes the sage philosopher: λίθος ὅστις τὸν σίθηρων κινὲι (lapis qui ferrum movet.) And his master, the "divine" Plato, refers to it in language of wondering appreciation: θεία δὲ δύναρις, ή σε χίνει, ώσπερ ἐν τῆ λίθο, ήν; Εθριπιδής μὲν Μαγνήτιν ἀνόρασεν, όι δὲ πόλλοι. Ηραχλείav. Significantly distinctive, too, of theological hyperbolization is the term used in the descriptive reference of St. Augustine: mirabilem ferri raptorem; while the more philosophically critical St. Thomas Aquinas refers to the loadstone in language more suggestive of the manner of the immortal Stagirite. who was his acknowledged master in logical discrimination as well as in metaphysical method. The tendency to modern innovation regarding the physical theories and descriptions so long preserved by the protection of authority is rather significantly indicated in the words of the "Father of Modern Philosophy": Præterea magnes trahet ferrum, sive potius magnes & ferrum ad invicem accedunt, neque enim ulla ibi tractio est. This view of Descartes was much more emphatically enunciated by Cabeus: Nec magnes trahit proprie ferrum, nec ferrum ad se magnetem provocat, sed ambo pari conatu ad invicem confluent. Similar to these views was that of the "Father of Magnetism" himself, who names the phenomenon coitio (Gilbert, De Magnete, 1600); and describes it (as Sir Thomas Browne approvingly observes) as "not made by any faculty attractive of one, but a syndrome and concourse of each; a coition alway of their vigours, and also of their bodies, if bulke or impediment prevent not, and therefore those contrary actions which flow from opposite poles or faces, are not so properly expulsion and attraction, as sequela and fuga, a mutuall flight and following." And this latter critical and accomplished knight errant of "truth and right" versus antiquity and authority also

points out that: "Concordant hereto is the assertion of Doctor Ridley, physition unto the emperour of Russia, in his Tract of Magnetical Bodies; defining magneticall attraction to be a natural incitation and disposition conforming unto contiguitie, an union of one magneticall body with an other, and no violent haling of the weak unto the stronger."

Although the celebrated author of the Religio Medici could himself be very credulous when cogitating on matters divine-or rather, let us say, diabolical—as is well shown by his emphatic opinions on the reality of witchcraft and the existence of a personal devil, his knowledge and teaching on the subject of the Magnet were far in advance of those of his junior medical-and hypercritical-contemporary, Gideon Harvey; who, also, had taken all knowledge for his province. So he judiciously corrects the classic fable, repeated so gravely by Pliny and by Serapion, of its pulling ships to pieces (or to the bottom of the sea, directly) by attraction of their iron nails and bolts; also the stories of the influence of the diamond on a needle touched therewith, and on a magnetic pole which it was used to screen. The former of these had been stated by the famous natural magician, Baptista Porta, to be quite similar to that of the loadstone; while the latter effectively neutralized the attraction. And both statements are contradicted by Browne, although he does not indicate the very probable origin: that the classic adamas (equivocally) referred to the magnet in some authors, and to the diamond in others. He also corrects the mediæval misstatement of Lælius Bisciola, to the effect that "if unto ten ounces of loadstone one of iron be added, it encreaseth not unto eleven, but weights ten ounces still: a relation inexcusable"; that of "Beda his relation of the loadstone that attracted onely in the night"; and rules out the "inexcusable" suggestion of "Franciscus Rueus, a man of our own profession, who "is fain to salve as impostures of the Devill" some of those "traditionall qualities." He also rejects the statement of Paracelsus "that if a loadstone be annointed with mercuriall oyle, or onely put into quicksilver, it omitteth its attraction forever" (a statement which had been respectfully recognized by Gideon Harvey); and the fascinating fables which had been so long received regarding the magnetic suspension of the tomb of Mahomet, of the statue of Arsinoe, of that of Bellerophon's horse, and of the chariot in the temple of Serapis.

In the remote prescientific ages, when hygienic sanitation was still nonexistent, when physiological and pharmaceutical chemistry had still many centuries to wait before birth, and when man's murderous enmity to man was more (superficially) evident than in our present generation, disease and injury were treated by an unlimited variety of the respective products of the "three kingdoms of nature." Every remarkable mineral product was accorded a place in the therapeutic armamentarium; and, in accordance with its unequalled pecularities, the loadstone found special recognition. Harvey arranges the clinical capabilities thereof in the third compartment of his quatenary classification of its properties:

They are either mechanical, nautical, medicinal, or fabulous. Its mechanical properties of attracting iron: nautical, of inclining or moving towards the north pole, and

thereby of directing mariners in steering their course, of which more anon; medicinal, of adstriction and stenching blood. Ætius, lib, iii, tetrabl. cap. 25, gives us this account of its medicinal vertues: The Magnete or Herculean stone hath the same vertues which a blood stone hath: They say that it doth asswage the pains of the gout in the feet and in the wrist, if held in the hand. This is fabulous, but if applied being mixt with other ingredients in a plaster, it doth really give ease in some kinds of gouts. Serap. lib. de Simpl. part. 2, cap. 384, commends the magnete for curing wounds befaln by a venomous weapon; it is to be powdered and mixt with other oyntments and applied to take a dose of it internally until the venom is purged away by stool. Parey, lib. vii, Chir., cap. 15, attributes a very memorable cure of a bursted belly to it. Fabr. Hildan, Cent. 5. Observ. Chir. 21. Obs., rehearses a famous cure luckily done by it by the advice of his wife (at a dead lift, I suppose) upon a merchant, who was tormented with a miserable pain in one of his eyes caused by a little piece of steel that was accidentally pierced into it. All kind of anodynes were applied, but to purpose, at last the loadstone was thought upon, which he caused to be held near to the eye, whereby it was soon

In contrast to the remarkable reputation of the loadstone as an external application is the comparatively unfavorable estimate of its functional powers when administered internally. The great medical lexicographer, Dr. James, of "fever pow-der" fame, tells us (1745) that: "The loadstone is found in many parts of Europe, and for the most part in iron mines; but the best are those which come from the East Indies and Ethiopia. It is, undoubtedly, a kind of iron ore; and, in some places in Germany, they actually extract the iron it contains: When exposed in the focus of a great burning glass, it likewise manifestly discovers iron. . . . The loadstone is not used inwardly in physic, though Galen says it has the same virtues as the bloodstone; and, also, mentions its purgative virtue, and recommends it, on that account, in dropsies. Dioscorides proposes that it be given in the quantity of three oboli, to evacuate gross melancholy humours. Some think it possessed of a deleterious quality, which is denied by others; but I imagine the poisonous quality is to be understood of that kind of magnes mentioned by Theophrastus, which I take to be a kind of native litharge.

In commenting on the fourth class of the properties of this mineral, Gideon Harvey proceeds to state that:

The fabulous properties of this stone are of losing its attractive virtue by the apposition of a diamond; of curing wounds at a distance, for which purpose it is added to Bombasts sympathetical oyntment; and of preserving youth, for which end they say the King of Zeylan causes his victuals to be dressed in magnete dishes.

And James, already quoted, observes in the same connection:

The true loadstone, externally used, is drying, astringent, and consolidating. It is an ingredient in the emplastrum manus dei, emplastrum divinum, emplastrum nigrum, and emplastrum stypticum of Charas. Geoffroy.

It is of an astringent quality, and stops bleeding; being burnt, it expels gross and atrabilious humours, but it is seldom used. Schroder. It is prescribed in hernias. Hoffman. Paracelsus makes it an ingredient in a plaister prepared, not only for extracting the head of an arrow from the human body, but all manner of dirt and filth whatever. Dale.

The unique properties of loadstone had, in accordance with the promptings of some of the fundamental instincts of human nature, been a source of

continuous stimulation to experiment, and inquiry, and hypothesis, ever since its first discovery. Many of the resulting facts and surmises were critically discussed by the accomplished author of the *Religio Medici*. That enterprising crusader against popular error tells us that:

We conceive the earth to be a magneticall body. A magnetical body, we term not only that which hath a power attractive, but that which seated in a convenient medium naturally disposeth it self to one invariable and fixed situation. And such a magnetical vertue we conceive to be in the globe of the earth; whereby as unto its naturall points and proper terms it disposeth it self unto the poles, being so framed, constituted and ordered unto these points, that those parts which are now at the poles, would not naturally abide under the æquator, nor Green-land remain in the place of Magellanica; and if the whole earth were violently removed, yet would it not forgoe its primitive points, nor pitch in the east or west, but return unto its polary position again. This is probably that foundation the wisdome of the Creator hath laid unto the earth, and in this sense we may more nearly apprehend, and sensibly make out the expressions of Holy Scripture, as that of Ps. 93:I. Firmavit orbem terræ qui non commovebitur, he hath made the round world so sure that it cannot be moved: as when it is said by Job, Extendit aquilonem super vacuo, &c. Hee stretcheth forth the north upon the empty place, and hangeth the earth upon nothing. And this is the most probable answer unto that great question, Job 38, where-upon are the foundations of the earth fastened, or who laid the corner stone thereof? Had they been acquainted with this principle, Anaxagoras, Socrates, and Democritus had better made out the ground of this stability: Xenophanes had not been faine to say it had no bottome, and Thales Milesius to make it swim in water.

After discussion of its cosmic polarity, Browne refers in some very interesting paragraphs to the characteristic power of attraction displayed by the loadstone, and indicates the fallacies of some of the popular "tenents" to which such peculiarities had given rise:

"For perceiving its secret power to draw unto it selfe magneticall bodies, men have invented a new attraction to draw out the dolor and paine of any part. And from such grounds it surely became a philter, and was conceived a medicine of some venereall attraction, and therefore upon this stone they graved the Image of Venus according unto that of Claudian, Venerem magnetica gemma figurat. Hither must wee also referre what is delivered concerning its power to draw out of the body bullets and heads of arrows, and for the like intention is mixed up in plaisters; which course although as vaine and ineffectuall it be rejected by many good Authors, yet it is not me thinks so readily to bee denyed, nor the practice of many ages and physitians which have thus compounded plaisters, thus suddenly to be condemed. "Here he refers approved." denly to be condemned, . Here he refers, approvingly, to the reported "cure also of heurnias or ruptures in (i. e., Ambroise Paré); and to "the methods also of curation lately delivered by Daniel Beckherus, and approved by the professors of Leyden in the tract de Cultivoro Prussiaco, 1636, that is of a young man of Sprucéland that casually swallowed downe a knife about ten inches long, which was cut out of his stomach and the wound healed up. In which cure to attract the knife to a convenient situation, there was applied a plaister made up with the pow-der of loadstone." In his comment, he does not neglect to point out that Libavius, one of the foremost chemical experts of his generation, had been led to "condemne, as vaine and altogether unusefull" this use of magnetic plasters; and also that such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus (the recognized for the such was the teaching of Gillbertus). nized father of magnetic science), and so "lately Swick-ardus in his Ars magnetica." Here our author proves that he had, himself, tested the respective values of the contra-dictory assertions: "Their reason is, because a loadstone in powder hath no attractive power; for in that forme it omits his polary respects, and looseth those parts which are the rule of its attraction: wherein to speake compendiously, if experiment hath not deceived us, we first affirme, that a loadstone in powder omits not all attraction. As we have made triall in the emplastrum de minio, with

halfe an ounce of the masse, mixing a dram of loadstone, for applying the magdaleon or roale unto the needle it would both stir and attract it; not equally in all parts, but more vigorously in some, according unto the mine of the stone more plentifully dispersed in the masse." And his final summing up on this question is: "Now though we affirme not the plaisters wholly ineffectual, yet shall we not omit two cautions in their use, that therein the stone be not too subtily powdered; for it will better manifest its attraction in a more sensible dimension; that where is desired a an a more sensine dimension, that whether it were not better to relinquish the powdered plaisters, and to apply an entyre loadstone unto the part: And though the other be not wholly ineffectuall, whether this way be not more powerfull, and so might have been in the cure of the young man delivered by Beckerus.

But it is from the invention of "a new attraction," which was used by popular imagination to decorate the natural one, that the same author would account for "what is let fall by Ætius, that a loadstone held in the hand of one that is podagricall doth either cure or give great ease in the gout. Or what Marcellus Empericus affirmeth, that as an amulet it also cureth the head-ach, which are but additions unto its proper nature, and hopefull enlargements of its allowed attraction." And even more emphatically does our author reject the very mediæval opinion "delivered by some that a loadstone preserved in the salt of a Remora, acquires a power to attract gold out of the deepest wells. Certainly a studied absurdity, . . ." Also the "shrewd quality" which "Dioscorides puts upon it" in his statement that he "discovers the incontinence of a wife by placing the Loadstone under her pillow, for then shee will not be able to remaine in bed with her husband"; the "Lithomancy or divination from this stone, whereby . . . Helenus the Prophet fore-told the destruction of Troy"; the anæsthetic virtue of "the loadstone of Laurentius Guascus the Physitian . . . wherewith as Cardane delivereth, whatsoever needles or bodies were touched, the wounds and punctures made thereby, were never felt at all"; and the much less fascinating quality (also attributed to it by Dioscorides) which made it so useful to burglars: "theeves, saithe he, having a designe upon a house, doe make fire at the foure corners thereof, and cast therein the fragments of Loadstone, whence ariseth a fume that so disturbeth the inhabitants, that they forsake the house and leave it to the spoyl of the robbers.'

But a sadly-yet it may well be added, hopefully -instructive lesson in the vanity of scientific prophesy is afforded by Browne's rather confident opinion-and prediction-regarding the curious speculative anticipation of a magnetic telegraph, to which I have also shown a reference, in a quotation from Gideon Harvey. The learned and devout author of the Religio Medici discusses this subject with an evidently keen interest; and his remarks can, I venture to think, hardly fail to arrest the attention of the earnest student of human opinion and of scientific progress-even in our enlightened

twentieth century.

The conceit is excellent, and if the effect would follow somewhat divine, whereby we might communicate like spirits, and conferre on earth with Menippus in the Moone; which is pretended from the sympathy of two needles touched with the same loadstone, and placed in the center of two Abccedary circles, or rings with letters described round about them; one friend keeping one, and another the other, and agreeing upon an houre wherein they will

communicate. For then, saith tradition, at what distance of place soever, when one needle shall be removed unto any the same. But herein I must confesse my experience can finde no truth; for having expressly framed two circles of wood, and according to the number of the Latine letters divided each into twenty three parts, placing therein two stiles or needles composed of the same steele, touched with the same Loadstone, and at the same point: yet of these two, whensoever I removed the one, although but at the distance of halfe a spanne, the other would stand like Her-cules pillars, and if the earth stand still, have surely no motion at all. Now as it is not possible that any body should have no boundaryes, or as we terme it Sphere of its activity, so is it improbable it should effect that at distance, which nearer hand it cannot at all performe.

Againe, the conceit is ill contrived, and one effect inferred, Againe, the concerts in Contrived, and one effect interred, whereas indeed the contrary will ensue. For if the removing of one of the needles from A to B should have any action or influence on the other, it would not intice it from A to B, but repel it from A to Z: for needles excited by the same point of the stone doe not attract, but avoyd each other, even as these also do, when their invigorated

extreams approach unto one another

Lastly, were this conceit assuredly true, yet were it not a conclusion at every distance to be tryed by every head: yet being no ordinary or Almanack businesse, but a prob-Jeme Mathematicall, to finde out the difference of houres in different places; nor doe the wisest exactly satisfie themselves in all. For the houres of severall places anticipate each other, acording unto their longitudes, which are not exactly satisfied to the control of the actly discovered of every place, and therefore the triall hereof at a considerable intervall, is best performed at the distance of the Antæci; that is, such habitations as have the same meridian and equall parallel, on different sides of the equator; or more plainly have the same longitude, and the same latitude unto the south, which wee have in the north. For unto such situations it is noone and midnight at the very same time.

To the statement of such objections logically propounded, as they undoubtedly are, in the light of the fullest scientific attainment of that period, he appends a further illustrative one derived from associations of a directly professional nature—and couched in a tone of slyly sarcastic humor, while displaying a rare mastery of the varied associations of the science of physical experiment with that of surgical practice.

And therefore the Sympathie of these needles is much of the same mould, with that intelligence which is pretended from the flesh of one body transmuted by incision into another. For if the Arte of Taliacotius de Curlorum Chyrurgia per incisionem, a permutation of flesh or transmutation be made from one mans body into another, as if a piece of flesh be exchanged from the biciptall muscle of either parties arme, and about them both, an Alphabet circumscribed upon a time appointed as some conceptions affirme, they may communicate at what distance soever. For if ntme, they may communicate at what distance soever. For it the one shall prick himself in A, the other at the same time will have a sense thereof in the same part; and upon inspection of his arme, perceive what letters the other points out in his owne; which is a way of intelligence very strange, and would require the Arte of Pythagoras; who could read a reverse in the Moone

Those readers who are familiar, as all should be, with the works of the contemporary author of Hudibras, will at once recall the lines which contribute their testimony to the vividness of the impression with which the practice of the famous Italian apostle of rhinoplastic surgery had titillated the imaginations of both literary and medical men in that generation:

> So learned Tatiacotius, from The brawny part of porter's bum, Cut supplemental noses, which Would last as long as parent breech; But when the date of Nock was out; Off dropp't the sympathetic snout.

The idea of telepathic sympathy (and of antipathy) was very much in the air, indeed, in that generation, as in some preceding ones; and may perhaps be regarded as one of the symptoms of the hankering after the mysterious, the unknowable, and the unattainable, which has accompanied humanity in all its wanderings since the original exile from the Garden of Eden. Dr. Fludd (Robertus de Fluctibus) refers to the case of an Italian nobleman, of whose nasal appendage the major portion had been sliced off in a duel, and who induced a slave, by promise of freedom and a reward, to permit the formation of a wound on his arm, to the margins of which the stump of the amputated nose was secured by stitches. When union had taken place, a nose shaped piece was cut out from the flesh (and investing skin) of the arm, and duly dressed. The operation was perfectly successful. The emancipated slave went to Naples, and died there, and at the moment of his death gangrene of the transplanted portion of the nose set in. The patient was then advised to have a piece of his own arm utilized. Encouraged by the result of the previous operation, he agreed, and the result was a lifelong success. The operation described and figured by Taliacotius was of the latter form.

On the subject of the therapeutical properties of the loadstone—both for internal administration and external application—and some others specially correlated thereunto, Browne expresses his opinions more explicitly and precisely than he usually does on facts or questions that are chiefly or wholly associated with professional matters—on which he is, as a rule, peculiarly reserved. With regard to its immediate effect on the alimentary canal we are

informed that:

Unto the ferreous and mineral quality pertaineth what Dioscorides, an ancient writer and soldier under Anthony and Cleopatra, affirmeth, that halfe a dram of loadstone, given with honey and water, proves a purgative medicine, and evacuateth grosse humors; but this is a quality of great uncertainty, for omitting the vehicle of water and honey, which is of a laxative power itselfe, the powder of some loadstones in this dose doth rather constipate and binde, than purge and loosen the belly. And if sometimes it cause any laxity it is probably in the same way with iron and steele unprepared, which will disturbe some bodies, and worke by purge and vomit. And therefore what it delivered in a book ascribed unto Galen that it is a good medicine in dropsies, and evacuates the waters of persons so affected: It may I confesse by siccity and astriction afford a confirmation unto parts relaxed, and such as the hydropically disposed, and by these qualities it may be useful in hernias or ruptures, and for these it is commended by Ætius, Ægineta and Oribascus, who only affirme that it contains the virtue of Hæmatiteus, and being burnt was sometimes vended for it.

In curious contrast to the anæsthetic properties ascribed to at least one specimen of loadstone by the mystically medical and weird visionary, Jerome Cardan, we find that an opinion of local malignancy was "delivered by some, that wounds which are made with weapons excited by the loadstone contract the malignity and become of more difficult cure; which, nevertheless, is not to be found in the incisions of chyrurgions with knives and lances touched, which leave no such effect behind them." It, would almost seem that the original exponent of this opinion had been inspired by a perverse ambition of furnishing an opposite pole to his magnet—in the special meridian of his therapeutic domain!

And a corresponding contradictory criticism is offered on the strange monstrosity of physical opinion which endowed this mineral with toxic proper-"Hitherto must we also referre that affirmative which sayes the loadstone is poyson, and therefore in the list of poysons we finde it in many authors; but this our experience cannot confirme. and the practice of the King of Zeilan clearly contradicteth, who as Garcias ab Horto, Physitian unto the Spanish viceroy delivereth, hath all his meat served up in dishes of loadstone, and conceives he preserveth the vigor of youth." This tendency of humanity to attribute supplemental and auxiliary virtues to mysterious substances, especially those of remote and unknown origin, was also illustrated by the crediting of corresponding preservative powers to China dishes when these were first imported into the Occident.

Whether observation of the unique peculiarities of this variety of iron ore was the original directive agency in leading to the discovery and metallurgy of elemental iron is a question which we cannot, of course, hope to be able to answer satisfactorily, either now or at any future date. Nevertheless. the transition of the point of view from mineral to element affords an opportunity for contemplative digression which presents many points and aspects of peculiar interest in the present state of physical and of philosophical science. The philosophical historians of the gradual evolution of human opinion in the contemplation of matters physical have pointed out the fewness and unchangeableness of the "species of objects" in the heavens above, of the existence of which the evidence of human sense was unable to testify. The sun, the moon, planets, and fixed stars became symbolic of unchanging stability, in appearance and periodic movement. The appearances of the meteors of the air, with its ever changing clouds and its sudden and violent storms, were diversified to an incalculable degree. creatures of the waters, and those of the earth, on and beneath its surface; its plants and its animals, its fossils and its minerals, were still more variously and more intricately diversified. Accordingly:

If we regard the different manners of their production, their mutual influence in altering, destroying, or supporting one another, the orders of their succession seem to admit of an almost infinite variety. If the imagination, therefore, when it considered the appearances in the heavens was often perplexed and driven out of its nautral career, it would be much more exposed to the same embarrassment, when it directed its attention to the objects which the Earth presented to it, and when it endeavored to trace their progress and successive revolutions. To introduce order and coherence into the mind's conception of this seeming chaos of dissimilar and disjointed appearances, it was necessary to deduce all their qualities, operations, and laws of succession, from those of some particular things with which it was perfectly acquainted and familiar, and along with which its imagination could glide smoothly and easily and without interruption. But as we would in vain attempt to deduce the heat of a stove from that of an open chimney, unless we could show that the same fire which was exposed in the one lay concealed in the other, so it was impossible to deduce the qualities and laws of succession observed in the more uncommon appearances of Nature from those of such as were more familiar, if those customary objects were not supposed, however disguised in their appearance, to enter into the composition of those rarer and more singular phenomena. To render, therefore, this lower part of the great theatre of Nature a coherent spectacle to the imagination, it became necessary to suppose, first, that all the strange objects of which it consisted were made up

out of a few, with which the mind was extremely familiar: and secondly, That all their qualities, operations, and rules of succession, were no more than different diversifications of those to which it had long been accus-

tomed, in these primary and elementary objects.

Of all the bodies of which these inferior parts of the universe seem to be composed, those with which we are most familiar are the Earth, which we tread upon; the Water, which we every day use; the Air, which we constantly breathe; and the Fire, whose benign influence is not only required for preparing the common necessaries of life, but for the continual support of that vital principle which actuates both plants and animals. These therefore were by Empedocles, and the other philosophers of the Italian school, supposed to be the elements, out of which, at least, all the inferior parts of Nature were composed. The familiarity of those bodies to the mind, naturally disposed it to look for some resemblance to them in whatever else was presented to its consideration. . . The heat, observed m both plants and animals, seemed to demonstrate, that Fire made a part of their composition. Air was not less necessary for the subsistence of both, and seemed, too, to enter into the fabric of animals by respiration, and into that of plants by some other means. The juices which circulated through them showed how much of their texture was owing to water. And their resolution into Earth by putrefaction discovered that this element had not been left out in their original formation.

Such was the original genesis of the theory of elements, according to the above well informed sketch drawn by a writer of the eighteenth century, who thus proceeds to a consideration of their leading attributes:

The qualities, too, by which we are chiefly accustomed to characterize and distinguish natural bodies, are all of them found, in the highest degree in those Four Elements: The great divisions of the objects, near to the surface of the Earth, are those into hot and cold, moist and dry, light and heavy. These are the most remarkable properties of bodies; and it is upon them that many of their other most sensible qualities and powers seem to depend. Of these, heat and cold were, naturally enough, regarded by those first inquirers into nature, as the active; moisture and dryness as the passive, qualities of matter. It was the temperature of heat and cold which seemed to occasion the growth and dissolution of plants and animals; as appeared evidently from the effects of the change of the seasons upon both. A proper degree of moisture and dryness was not less necessary for these purposes; as was evident from the different effects and productions of wet and dry seasons and soils. It was the heat and cold, however, which actuated and determined these two otherwise inert qualities of things, to a state either of rest or motion. Gravity and levity were regarded as the two principles of motion, which directed all sublunary things to their proper place; and all these six qualities, taken together, were, upon such an inattentive view of nature, as must be expected in the beginnings of philosophy, readily enough apprehended to be capable of connecting together the most remarkable revolutions, which occur in these inferior parts of the universe.

The influence of these properties was: "Each of those four elements, had, in the system of the universe, a place which was peculiarly allotted to it, and to which it naturally tended. Earth and water rolled down to the centre; the air spread itself above them; while the fire soared aloft, either to the celestial region or that which was immediately below it. When each of those simple bodies had thus obtained its proper sphere, there was nothing in the nature of any one of them to make it pass into the place of the other, to make the fire descend into the air, the air into the water, or the water into the earth; or, on the contrary, to bring up the earth into the place of the water, the water into that of the air, or the air into that of the fire. All sublunary things, therefore, if left to themselves, would have remained in an eternal repose. The revolution of the heavens, those of the sun, moon, and five planets, by producing the vicissitudes of day and night, and of the seasons, prevented this torpor and inactivity from reigning through the inferior parts of nature; inflamed by the rapidity of their circumvolutions, the element of fire was liberated, and forced violently downwards into the air, into the water, into the earth; and thereby produced those mixtures of the different elements which kept up the motion and circulation of the lower parts of nature; occasioned sometimes the entire transmutation of one element into another, and sometimes the production of forms and species different from them all; and in which, though the qualities of them all might be found, they were so altered and attempered by the mixture as to be scarcely distinguishable." Such were the ideas of universe and of element, of matter and of spirit, in those days of self torturing introspective effort towards the attainment of truth.

A really curious fact with regard to iron is that the therapeutic history of this metallic element seems to reach almost as far back into the shades of remote antiquity as does that of its military and domestic uses. Surviving testimony goes to show that the Greeks employed it at the siege of Troy; not only in the construction of weapons and machines of war, but therapeutically—as a local application to wounds, on account of its known healing (hæmostatic and astringent?) properties. language of the elder Pliny-as quaintly Englished by Philemon Holland, Doctor of Physicke-we are told that: "The very rust of yron also is counted medicinable; for so Achilles is said to have treated Telephus; but whether the head of his speare were iron or brasse, of which he used the rust, I doe not certainly know. Certes, he is paynted thus: With his sword scraping and shaking off the rust into the wound." Modern readers will, I dare say, incline -preferringly-to the belief that the said rust was

More remarkable still is the fact that the tonic properties of iron were recognized in Greece in the remote ages of its fabulous antiquity. We learn from Apollodorus that Melampus used it—successfully, too—to restore the failing virility of Iphikles: "he is said to have directed *I*. to take the Rust of a Knife, and drink it in Wine, ten days together, in order to procure him Children." (James.)

The opening sentences of Pliny's account of iron are, as very usual with him, mainly philosophic:

Yron, a mettal which we may well say is both the best and the worst implement vsed now in the world; for with the helpe of yron we break up-and ear the ground, we plant and plot our groues, we set our hortyards and range our fruitful trees in rewes; we prune our vines and by outting off the superfluous branches and dead wood, we make them euery yere to look fresh and yong againe; by meanes of yron and steele we build houses, hew quarries, and cut in stone, yea, and in one word, wee vse it to all other necessary vses of this life. Contrariwise, the same yron serueth for wars, murders, and robberies, not onely to offend and strike therewith in hand, but also to reach and kill afarre off, with diures sorts of darts and shot; one while discharged and sent out of engines, another while lanced and flung by the force of the arme; yea, and sometime let flie with wings: and this I take to be the wickedest intention that euer was deuised by the head of man; for to the end that death may speed away the faster to a man, and surprise him more suddenly, we make it to flie as a bird in the aire, and to the arrow headed at the one end

with deadly yron, we set feathers at the other: whereby it to be imputed to the nature of it, but to the vnhappy wit

Such has been the reflection of every philanthropic philosopher, down through all the centuries of recorded time, whenever his thoughts were directed toward a solution of the problematic query: "Why man was made to mourn?"!

And the same gossipy, and apparently most credulous, "authority" on the therapeutic science and practice of those classical (and preclassical) ages gives us, as usual, a very clearly sketched and detailed picture of the collective knowledge, or opinion, of his own (and earlier) times, in connection with matters "martial":

As touching the vertues thereof, it is clensing, exiccatiue, and astringent; it recouereth the haire in places despoiled thereof, if they be annointed therewith in the forme of a liminent; being reduced into a salue with wax and oile of Myrtles incorporate together, many vse it for roughnesse about the eie-lids; the pimples also breaking forth all ouer the body. For shingles and S. Antonies fire, it is singular good to apply it in an vnguent with vinegar; likewise it killeth scabs, and healeth whitflawes of the fingers, and the excrescence or turning vp of the flesh about the roots of the nails, if linnen rags wet therein be applied conveniently. The same conveyed vp in wooll after the manner of a pessary into the natural parts of women, staieth the immoderat flux both of whites and reds. The rust of yron tempered in wine, and wrought together with Myrrhe, is good for a greene wound: put thereto vinegar, and then it helpeth the piles and swelling bigges of the fundament. A liniment made with it, mitigateth the pain of the gout.

As touching the skales of yron that flie from the edge or point of any weapon wrought in the smiths forge: they serue in the same cases that the rust doth, and haue the like effects, saue only this, that they haue greater acri-monie, and work more eagerly: in which regard they are emploied about the repressing of the flux that falleth into watering eies. But marke this one thing: Yron being that which woundeth most and sheddeth bloud, yet the skales that come from it, stanch the same: a property they haue besides to stop the flux in women: and being applied to the region of the spleene, they do open the obstructions thereof, and ease other infirmities incident thereto: the running hæmorrhoids they represse, and such vicers as are given to spread farther and corrode as they go. Reduced into a fine powder and gently strewed vpon the eye-lids, they are good for the accidents thereto belonging. But the principal vse of them, and for which they are most commended, is in a certain liquid plaster called Hygremplastrum; which serueth to mundifie wounds, vicers, and fistulæs; to eat away all callosities, and to incarnate and ingender new flesh about bones that are perished. And this is the receit of that composition: Take of the scouring Tuckers earth the weight of two oboli, of brasse six drams, of the skales of yron as much, and no lesse of wax, incorporat all these according to the art in one sextar of oile. But in case there be need to mundifie any sores, or to incarnat, there would be put thereto some plain cerot besides.

The above extract, from the pages of the earliest encyclopædia of Materia Medica known to Western science, clearly proves that the clinical properties of martial preparations which have stood the test of time are those which were known in the prescientific ages; and were, accordingly, the exclusive revelations of methods wholly empirical. In fact, almost the only great central fact revealed by modern science in this connection is that iron is the one heavy metal which our food must contain-the human animated machine absolutely requiring its presence; in its original construction, and throughout every stage of its continuous repair. Of course, we have been treated to an endless series of statements regarding absorption and elimination, in approximately parallel columns of contradictory affirmations: intestinal absorption a fact and a fable; urea increased and decreased, etc., etc.; but our most important clinical facts are all empirical!

And another valuable therapeutic item is offered for the reader's instruction in a later paragraph:

Gads of steele or other yron red hot quenched in water, so long vntil the same water be hot, causeth it to be a wholesome drinke in many diseases, but principally in the

Dr. James (who prepared the famous "fever powder") tells his readers how: "Dioscorides attributes to it an astringent virtue, and recommends it in uterine hæmorrhages. He, likewise, orders wine, or water, in which a red hot iron has been quenched, in the cœliac passion, lientery, and dysentery, and for restoring weak stomachs. Physicians now acknowledge a twofold virtue in iron, one aperient, the other astringent; for it is observed to cure a suppression of the menses, to open obstructions of the liver, spleen and other viscera, to stop hæmorrhages and diarrhœas, and to strengthen the relaxed fibres of the intestines. On these accounts it is reckoned the grand specific in hypochondriacal affections, and all kinds of chloroses. Some attribute an aperient virtue to some preparations of iron, and an astringent virtue to others; but the truth is, all these preparations are both astringent and aperient, though not in the same degree.

As compared with his therapeutics, Pliny's views on the uses of iron in surgery and demonology are somewhat more erratic. In the classic ages of Pagan antiquity, the physical agents which were most efficacious in their salutary effects on the human body were those which were supposed to be possessed of concurrent mystical or weirdly occult properties as well. One feature led to the recognition of the other; probably no one knew which had been first discovered. Our encyclopædic authority

tells us that:

As touching the vse of yron and steele, in Physicke it serueth otherwise than for to launce, cut, and dismember withall: for take a knife or dagger and make an imaginarie circle two or three times with the point thereof, vpon a young child, or an elder body, and then goe around withall all about the party as often, it is a singular preservative against all poisons, sorceries or inchantments. Also to take any yron naile out of the coffin or sepulchre wherein man or woman lieth buried, and to sticke the same fast to the lintle or side post of a dore, leading either into the house or bed-chamber where any doth lie who is haunted with spirits in the night, hee or shee shall be delivered and secured from such phantasticall illusions. Moreouer, it is said, that if one be lightly pricked with the point of a sword or dagger which hath beene the death of a man, it is an excellent remedy against the pains of sides or brest, which come with sudden pricks and stitches. An actuall cauterie of yron, red hot, cureth many diseases, and especially the biting of a mad dog; in which case it so effectuall, that if the poison inflicted by that wound, haue preuailed so far, that the patient be fallen into a Hydrophobie thereby, and cannot abide drinke or water, let the sore be seared therewith, the party shall find help presently.

The possession of uncanny and supernatural powers was very confidently attributed to iron in the remote ages of classic antiquity, as the statement of Pliny contained in the above quotation conclusively proves. And this interesting fact furnishes a "quaint and curious" item of collateral testimony in favor of the common kinship and probable original unity of source and development of the primitive notions of untutored humanity regarding such subjects. In the more remote districts of the west and south of Ireland, corresponding faith in the powers and virtues of "the blessed iron" was universally diffused among the peasantry -at least before the days of the enlightenment of "intermediate education." The benighted traveler who bore in his hand an iron or steel weapon could always pass, with safety, the haunted cross road or the "gentle" rath. He might even venture with impunity to intersect the pathway of transit of the local "gentry" in the course of their midnight change of residence, which took place annually at Hallowe'en-with the most unfailing chronometric regularity. Without such safeguard, such intersection never failed to prove a most "regrettable incident." The midnight wanderer was "taken away" by the moving band of the "good people," and a pining changeling was left instead. The latter was a dangerous, as well as unholy, inmate of the hut to which it was conveyed; and could be safely and effectively got rid of only by "taking it on the shovel and pitching it out of the door." The shovel blade being always formed of the "blessed" metal, the diabolical individual could not attempt to reenter the door; and so was obliged to vanish-and always, in doing so, displayed his impotent vindictiveness by "going off in flames of fire" and leaving "a strong smell of brimstone" behind! Lucifer himself always winced and retired when opposed by an iron weapon. Millions of-very literally-illiterate persons, who had never even heard of the name of Shakespeare, knew that "no fairy takes, nor witch hath power to charm" the happy and privileged individual who is protected by a metal "so gracious and so hallowed."

All readers are, of course, aware that the "theory and practice" of medicine, and the "science and art" of surgery were peculiarly unprogressive during the series of centuries so usually referred to as "the dark ages." The Arab physicians were the principal, almost the sole recognized, teachers; and they altered but few indeed of the doctorial dicta of Hippocrates, as expanded and transmitted to posterity in the comments and interpretations of his philosophic disciple, Galen. In medicine (as in philosophy and theology) "authority" reigned supreme. But while the absolute truths of wisdom, divine and human, were justly and wisely regarded and treated as unchanging and unalterable, the infancy of the healing art was long deprived of its birthright of healthy growth and freedom of movement; an approximately successful effort was made to retain it in its original Grecian cradle, and to limit the dangers to itself and to others which might result from unguided excursions, by keeping it carefully wrapped up in its earliest suit of swaddling clothes. The influence of "authority" was paramount in almost every department of human knowledge, throughout the greater part of that strange period of the progress (or stagnation) of the intellectual evolution and social civilization of Western Europe-to a degree which would be pretty hard for the most imaginative of us to realize in this twentieth century of universally diffused education, political emancipation, and legal equality of individual rights. The teaching of medicine

was no exception to this universal rule in the communication of knowledge, and the control of opinions-and the practice thereon based. Accordingly, there was no legitimate scope for the expansion of scientific theory in this department. Such development was doomed to await the explosive intellectual upheaval of the Renaissance; and the manifold postsequent political, social, ecclesiastical and educational phenomena and associated events. And down to that period the recognized teachers of medicine-both in theory and practice-still clung closely to the classical authorities whose science and traditional lore are still most fully represented in the vast thesauri of the elder Pliny and of Claudius Galen, respectively. And it is interesting to note here how the principal items of the therapeutic reputation of the first metal utilized in clinical practice retained their vitality through the seismic shocks of the Renaissance. Its uses were fully recognized by Paracelsus himself; and the comic element seems to obtrude itself in the coinage of the barbaric term Colcothar by the "Luther of Medicine" to connote the product of calcination of green vitriol (to which was added a quantum of common salt, and one of myrrh), that he used in the treatment of dropsies—thereby imitating pretty closely the practice of the great physician of Pergamum, while publicly denouncing his "authority" with the most foul mouthed scurrility.

(To be concluded.

REPORT OF 422 CASES OF A GENERAL SUR-GICAL NATURE FROM THE SURGICAL SERVICE OF FORDHAM HOSPITAL.

With Remarks.

By Alexander Nicoll, M. D., New York,

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During the past summer, in my service at Fordham Hospital, over four hundred cases of a general surgical nature came under my care. A consideration of this group of cases is interesting per se, and because it suggests certain points regarding such a service that, in themselves, are of special importance to the men who are actively engaged in hospital work. The method of reporting a series of cases of this nature, merely stating the number of cases treated, the number of deaths, and the number of cases cured, improved, or unimproved, without giving a thorough and painstaking tabulated list showing the nature of each case upon which the result was obtained, has always seemed to me to be an unsatisfactory one. Occasionally an exceptionally high death rate dwindles to a remarkably low one when the character of the cases is taken into consideration. On the other hand, to report a large series of cases with an unusually low death rate, without indicating the character of the individual cases, smacks too much of the man who "has never had a death following an operation for appendicitis." This gentleman is not infrequently brought to our notice by the laity, and is the cause of much mental weeping and wailing and impotent gnashing of teeth among men who know him for what he is, either a practitioner who, shirking his

| | | | | | | | 210 |
|--|------|---------|-------|-------|-------|--|-----|
| duty, refuses to operate on cas | 202 | of or | nnara | 20116 | 20- | Fractures, skull, vault and base | , |
| pendicitis, or, as is more proba | | | | | | fractures, compound femur | 1 |
| | | | | | | humerus, Yadius, and ulna. 1 maxilla, inferior 1 maxilla, singerior, and base of skull. 1 metalesses | 1 |
| properly belongs among the la | irge | gro | up of | -1 | zens | maxilla, superior, and base of skull | 1 |
| who, according to a certain b | | | | | | maxilia, Superior, and base of skull. 1 metatarsus 2 os innominatum, ant. sup. spines 1 phalanges 1 2 radius and ulha 1 1 tibia and fibula 1 1 | 1 |
| ter, are correctly designated b | у а | "sh | orter | and | ug- | phalanges 1 2 | 3 |
| lier word." | | | | | | tibia and fibula t | 3 |
| Therefore, to turn aside from | om i | my (| own | head | the | skull, base 5 I 1 | 7 |
| vials of my righteous wrath, | | | | | | skull, base 5 1 skull, vault 2 skull, vault and base 3 | 3 |
| list herewith: | , | F F | | | | Fractures, multiple or complicated; sim- | |
| 1100 1101 0 11 1011 1 | | | | | | ple, of humerus and ribs; compli- cated, of pelvis—ruptured urethra | |
| | | Ŧ | - | | | | 1 |
| | ÷ | Improve | 5 | | _; | compound, shaft of femur (upper 1/3) | |
| | ure | 301 | Not | Died. | Total | Simple, shall of femuli (lower :) | |
| NAME OF DISEASL. | Ű | In | Z.E | A | Ŧ | delirium tremens | 1 |
| Abseess, axilia | 2 | | | | 2 | delirium tremens | 1 |
| broad ligament | 1 | | | | 1 | | I |
| face | 1 | | | | I | compound, tibia and fibula, astragalus; dislocation, compound, of ankle | |
| leg | 5 | | | | 5 | dislocation, compound, of anxiety joint; delirium tremens | 1 |
| liver | I | | | | 1 | dislocation, compound, of metatarso- | , |
| neck | ٠. | 1 | | | 1 | simple, of ribs and clavicle; delirium | |
| Abscess, axilia br ast broad ligament face segment face s | | 1 | | | ı | tremens | - 1 |
| | | | | 1 | 1 | simple, of ribs; wounds, incised, of scalp | 1 |
| supramastoid tissue thigh Adenitis, tuberculous, of neck | I | | | | I | Furunculosis Gangrene, foot I | 3 |
| Adenitis, tuberculous, of neck | 2 | | 1 | | 3 | Genu varum | 1 |
| Adenitis, tuberculous, of neck. suppurative (gonorrheal), of groin. Adenoma, cystic, of parotid giand. Adhesions, intraabdominal, postoperative Abortion, incomplete Appendicitis, acute, catarrhal suppurative Appendicitis, chronic Arphritis chronic Burns, face. | 3 | 2 | | | 5 | Genu varum : Hæmatosalpınx | |
| Adhesions, intraabdominal, postoperative | | 2 | | | 2 | Hæmorrhage into anterior chamber of | |
| Appendicities acute catarrhal | 8 | 1 | | 1 | 10 | Hæmorrhoids 8 | 3 |
| suppurative | 15 | | | 1 | 16 | Hernia, inguinal | 10 |
| gangrenous | 3 | | | 1 | 4 | inguinal, strangulated 0 2 | 9 |
| Arthritis, chronic | | 1 | | | 1 | femoral 1 1 femoral, strangulated 2 1 | 3 |
| Burns, face | I | | | | 1 | ventral | |
| face and hands | · · | 1 | | | 1 | ventral, strangulated 1 | 1 |
| forearm general | 3 | | | 4 | 7 | ventral 2 1 ventral, strangulated 1 Hypertrophy, adenoids 1 tonsils and adenoids 3 Hydroxids 3 | 1 |
| Carbolic acid gangrene, finger Carcinoma, ascending colon and peri- | 1 | | | | 1 | Hydrocele 3 | 3 |
| tonæum | | | | 1 | 1 | Hydrocele 3 Internal injuries, with fractured humerus simple 1 | |
| breastbreast, recurrent | I | | | | 1 | merus, simple | 1 |
| larynx | | | | 1 | 1 | Laceration, of cervix uteri I | 3 |
| larynx rectum | | - :: | | 1 | 1 | of cervix uteri, and perinæum 3 of cervix uteri, with endometritis 2 | 2 |
| Cellulitis, arm | | | | | 3 | of perinæum 4 | 4 |
| hand | 1 | | | | 1 | Lymphangeits, of arm | |
| Cholecystitis, acute, gangrenous, rup- | I | | | | 1 | Malformations, double pes planus, con- | |
| tured | 1 | 1 | | | 2 | Mastoiditis | |
| Colic, intestinal | 8 | | | | 8 | Nephroptosis | |
| Concussion, cerebral Constitution, chronic Contusions, abdomen | | I | | | 1 | Neuritis, acute, gonorrhœal 1 Orchitis, traumatic 1 tuberculous, double 1 Osteoarthritis, tuberculous, acute, of | |
| Contusions, abdomen | I | | | | 1 | tuberculous, double | |
| foot | 1 | | | | 1 | Osteoarthritis, tuberculous, acute, of | |
| forearm | I | | | | I | knee 1 tuberculous, chronic, of knee 1 Osteomyelitis, tuberculous, chronic, of | |
| generalhead | 4 | - : : | | | 4 | Osteomyelitis, tuberculous, chronic, of | |
| headhead and shoulder | 1 | | | | 1 | Otitis media, acute | |
| knee with alcoholism | 1 | | | | 1 | chronic | |
| leg | . 1 | | | | 1 | Ovaritis, acute, with acute catarrhal | |
| general, with malaria | 1 | | | | T | acute, with postoperative addesions. | |
| Cystitis, chronic | I | | | | 1 | Papilloma, vulva | |
| Dermatitis venenata | 2 | | | | 2 | Periostitis, acute, of tibia 2 | |
| Dermatitis venenata Dislocations, elbow shoulder | 3 | | | | 3 | Peritonitis, acute, general, plastic 1 infective, due to | |
| toe shoulder, with delirium tremens Dupuytren's contraction Empyema, following fractured ribs | | | 1 | | 1 | infective, due to intestinal obstruction; ileocæcal in- | |
| Dupuytren's contraction | . 1 | | | | 1 | | |
| Empyema, following fractured ribs | 1 | | | | 1 | intestinal obstruction; acute gan- grenous appendictis 1 intestinal obstruction 2 | |
| following pneumonia | . 6 | | | | 3 7 | intestinal obstruction 2 | |
| following pineumonia Endometritis, chronic Epididymitis, gonorrhosal tuberculous Epithelioma, neck Fibromyoma, uterus Flording cartilage, in knee joint. Foreign budy in foot | | 3 | | | 3 | | |
| tuberculous | | 1 | I | | 2 | acute gangrenous appendicuts | |
| Fibromyoma, uterus | 2 | | | | 2 | Peritonitis, acute, pelvic 3 | |
| Floating cartilage, in knee joint | I | | | | 1 | Phlebitis, leg | |
| Fractures, simple, clavicle | | | | | 1 | riegiancy, extratterine, ruptured ges- | |
| clavicle and ribs | . 3 | | | | 1 5 | Pharyngitis, acute | |
| fibula (Pott's) | 3 | 1 | - :: | 1 | 4 | Phimosis 4 | 4 |
| femur, shaft | . 2 | | | | 2 | Prolapsus uteri | |
| femur, neck femur, shaft humerus, neck humerus, shaft metatarsus | . 6 | | | | 6 | Pyæmia | |
| metatarsus | . ī | 1 | | | 2 | Pyzemia transfer tran | |
| natulla | . 1 | | | | 1 | Runture, of urethra Salpingitis, acute, catarrhal | |
| phalanges | | 2 | | | | Salpingitis, acute, catarrhal | |
| | | 3 | | | | gonorrheal I | |
| ribs | . 3 | | | | 3 | Scoliosis Sinus, abdominal wall, postoperative I | |
| tibia and fibula | | | | | | Spina bifida | |
| tions and nouse | . 7 | | | | 1 | | |
| | | | | | | | |

| NAML OF DISEASE. | Cured. | Improved. | Not improwed. | Died. | Total. |
|---|--------|-----------|------------------|-------|--------|
| Sprains, ankle | _ | | | | 2 |
| ankles, both | 2 | | 4.7 | | 7 |
| ankle, and foot | I | | | | |
| ankle, and contused shoulder | 1 | | | | Y |
| knee | 1 | | | | 2 |
| Synovitis, acute, traumatic of knee. | 2 | | | | 1 |
| Stricture, urethra | | · · | | | 2 |
| Tenosynovitis, chronic, tuberculous, of | Ł. | | | | _ |
| flexor tendons of forearm | | I | | | 1 |
| Tetanus | | | | 1 | 1 |
| Traumatic amputations, of toes | 1 | | | | 1 |
| Tuberculosis, general, of bones | | | I | | 1 |
| Undescended testicle | 2 | | 4.5 | | 3 |
| Ulcer, gastric | * * | 1 | | | X |
| varicose, of legs | 4 | | | | |
| Vaginitis and vulvitis, acute, gonorrheal | | 2 | | | 2 |
| Varicocele | 2 | | | | 2 |
| Varicose veins, of leg, ruptured | | 1 | | | I |
| We unds, not involving body cavities of | I | | | | 1 |
| joints, bullet | 3 | 1 | | | 4 |
| contused | 5 | | | | 5 |
| incised | 3 | I | | | 4 |
| infected | 5 | 1 | | | 6 |
| Wounds, of special importance, bullet; | 12 | 6 | | | 18 |
| through head | | | | I | I |
| bullet: through lung | | | | | 7 |
| lacerated, of sclera, penetrating an- terior chamber of eye; general | | | | | |
| lacerations | 1 | | | | 1 |
| lacerated; with epilepsy | | I | | | 1 |
| stab; through lung | | 1 | | | 1 |
| Totals | 108 | 68 | 14 | 39 | 422 |

The total number of cases treated was 422. The total number of deaths was 39. The total mortality

was 9.2 per cent.

Of the fatal cases twenty-four patients died within twenty-four hours of their admission to the hospital, and can therefore be reasonably considered to have had little chance of recovery. This class includes the cases which were fatally burnt, and those cases which were admitted hopelessly injured or with advanced general peritonitis. Excluding this number the death rate was 3.5 per cent. This method seems to me to be a fair way of arriving at what may be considered the legitimate mortality of a service composed of cases of a mixed surgical nature, and into which the element of trauma enters to any appreciable degree. Trauma was the causative factor in nineteen of the fatal cases, or fortynine per cent. of the total number.

Of course figures do not lie but they are capable, nevertheless, of a certain amount of trickery and

malicious deception. The legitimate death rate of a hospital service depends upon so many factors that it is impossible to fix any hard and fast rule by which to figure Putting aside the question of the amount and character of the skill and knowledge possessed by the visiting surgeon, and the alertness of the house surgeon, we still have a number of very important factors, all of which have a decided influence upon this matter of legitimate mortality: The location of the hospital; the extent and climatic conditions of its district; the amount of traumatic surgery which may be expected from near by factories and railroad yards; the amount of special surgery contributed by settlements of people, both for eign born and native, who have lost faith in the soft answer that turneth away wrath, and who have earned by bitter experience that to turn the other

check too often results in the loss of the entire head

- hence the bullet and stab wounds. All these fac-

tors have their bearing upon the mortality of a service. Finally the *entente cordiale* existing between

the members of the medical board of the hospital on the one hand, and the private practitioners of the district in which the hospital is located on the other, will do more, in my opinion, to influence the mortality of any hospital than any other factor mentioned. I have found, statements concerning the growing commercial spirit among medical men to the contrary notwithstanding, that the great majority of the patients admitted to the charity wards of Fordham Hospial for acute illness of any sort were seen, previous to admission, by some man in private practice who, in the course of his ordinary work, had given his time and attention freely and cheerfully. These men have a powerful influence upon the course of cases which eventually come into the charity wards of hospitals. The general practitioner can, by his advice to the poor man stricken with appendicitis, for example, hasten the patient's entrance to the hospital and thus insure for him an early operation while he is still in good condition; or he can, by delay, prolong the preoperative stage of a severe peritoneal infection to such an extent that the patient finally reaches the surgeon's hands in a condition that practically precludes the possibility of recovery. Unfortunately the case which is moribund upon admission is still of woefully common occurrence in all our hospitals. It has always been my rule to operate on all cases which by their symptoms indicate a fatal termination under any other form of treatment no matter how hopeless the outlook appears to be, unless the patient is actually in extremis

One point which struck me most forcibly was observed in connection with the cases of acute peritoneal infection. In several cases in which obstipation was a persistent factor, due either to mechanical obstruction or to the severity of the infection, the appearance of the intestine, particularly the small intestine, was most suggestive. At operation this viscus was, as a rule, enormously dis-tended, deep red in color, "meaty" in appearance, and had lost its tone completely. It had a peculiar "porous" look which seemed to openly invite invasion from the infecting organism. While this condition was undoubtedly due in part to the actual infection and septic sympathetic paralysis, I am convinced that another factor played a by no means unimportant part in its production. I refer to the injudicious use of cathartics. In each of the cases in which the condition which I have mentioned was encountered there was a definite history of the abuse of purgatives previous to the admission of the patient to the hospital. I believe that the overenthusiastic exhibition of this class of drugs reduces the intestinal coats to a condition of such muscular and nervous exhaustion that not only is the power of immediate resistance to infection markedly lowered, but their power of muscular recovery is diminished to such an extent that postoperative meteorism, the bête noir of the abdominal surgeon, is rendered practically certain. Another point on this question is this—the time of operation is noticeably lengthened owing to the great difficulty of working in an abdominal cavity filled with distended intestines, and the shock of the anæsthetic, and that due to the occasional necessity for puncture of the distended gut and the unavoidable rough handling of the intestines, is markedly and unnecessarily increased. Indeed, I feel that too much care cannot be exercised in the use of purgatives in dealing with obstipation of any sort when there is the slightest amount of abdominal tenderness or rigidity.

Perhaps it will not be amiss to outline briefly the methods of treatment which were pursued in some of the classes of cases which have no hard and fast rule for their treatment, and in some of the cases in which such rules were not observed.

In all the cases in which we had to deal with the inflamed appendix the method of removal was as follows: The incision was preferably the intermuscular, whether the case was of a simple catarrhal nature or one in which abscess was present. The appendix was freed of adhesions and brought into the wound. If the base of the appendix was in a sufficiently healthy condition to sustain the compression of a ligature, the method of choice for its removal was always the same; a double ligature was passed through the mesenteriolum, close to the base of the appendix, and cut; one end was used to ligate the appendix and the other end was thrown about the mesenteriolum and tied firmly; the appendix was then cut away from its attachment with scissors and was amputated with the cautery. The four ends of the ligatures were then tied together. The cases in which the appendix was so friable at the base that ligature was out of the question were treated by the division of the mesenteriolum in the ordinary way, the appendix was clamped at the base, divided with the cautery, and then invaginated into the cæcum by a single row of Lembert stitching, arranged in pursestring style, inserted into the cæcal wall as close as possible to the base of the appendix. I found this simple method quite sufficient to prevent escape of bowel contents, subsequent infection, and the formation of fæcal fistulæ. The material used for the pursestring was number one catgut. Pus cases were drained with cigarette drains of about three quarter inch diame-These drains were removed at the end of thirty-six hours, and rubber tubes substituted. At no time was irrigation used. The use of hydrogen peroxide was tabooed. All patients were placed in the Fowler position immediately after operation.

The burn cases upon a service are always a puzzle. Those patients who were not burnt to such a degree as to threaten life were dressed with boric ointment and this, in my opinion, is the best dressing for cases of this nature. The cases of general burns were treated as follows: All burnt tissue was removed as far as possible and wet dressings of boric acid or sodium bicarbonate were applied. The patient had enough morphine to keep him free from pain, and rectal irrigations of hot normal salt solution were given every two or three hours. Strychnine and digitalis were the principal stimulants relied upon. I have not tried the scrubbing which has so many supporters because I have not had a severe case of burns in which the patient, in my opinion, was in condition to withstand the tremendous shock of such a procedure. I have tried the treatment of burns by exposure to air without dressings and have not been impressed with the special efficacy of that form of treatment.

In the cases of empyema the treatment differed

with the age of the patient. The children did very well with a simple incision into the pus cavity, while the older patients required the resection of a rib. The drainage in both classes of cases was the same: Two rubber tubes introduced in such a manner that they protruded about half an inch into the pus cavity. I always make it a point, when operating in a sacculated empyema, to allow the junior, who subsequently dresses these cases, to put his finger into the wound and feel for himself the angle and direction of the pus cavity. In all the cases of empyema irrigation of the cavity at the time of operation, and subsequently, was rigidly avoided. After operation all these patients should be instructed in the performance of lung gyinnastics, and should be encouraged to make faithful use of the James double bottle.

The compound fractures were treated along the following lines: If there was no comminution and the skin was fairly clean, or the bones did not protrude, the limb was cleansed in about the manner usually employed in preparing a patient for operation, the fractured member put completely at rest, and the temperature of the patient watched for the first sign of infection. In very few cases was there any such infection, and in those in which it did occur it was superficial and easily controlled. The cases of more gravity, in which there was great comminution and good reason for believing that the site of fracture had been contaminated, the patient was taken to the operating room and given an anæsthetic. The site of fracture was then cleansed in a manner more thorough than would be consistent with a conscious patient, the wound opened, thoroughly flushed out, all loose pieces of bone removed, and good drainage assured by the introduction of rubber tubes to the site of fracture. I was considerably surprised at the result obtained by this method of treatment in one case in which the injury was of such severity that amoutation seemed the only resort.

The patient was a well muscled man of thirty-two. He was attacked by a buck in the deer enclosure of Bronx Park. He was tossed, and, in falling, apparently caught his foot in a crevice of some sort. I had him taken to the operating room at once and found that his foot had been practically torn off. The astragalus and the lower ends of the tibia and fibula were fractured, and the leg bones protruded through his sock and trouser leg. The bones were dirty. His foot was displaced upward upon his leg and pointed upward and inward. It was much the same condition as one would see if the finger was pushed through a hole situated about an inch from the tip of a glove finger—the protruding finger corresponding to the exposed tibia and fibula, and the tip of the glove finger to the foot, in this case. The dorsalis pedis was pulsating, but the posterior tibial artery had apparently been destroyed. It was one of the most grotesque injuries I have ever seen. The foot was scrubbed, the bones of the leg were cleaned most thoroughly, some loose pieces of astragalus were removed, and the foot was reduced to its normal relation with the leg, considerable force being necessary to accomplish this. A drainage tube, one half inch in diameter, was introduced from side to side through the remains of the ankle joint. The foot and leg were placed completely at rest. The patient was attacked with a trifling amount of superficial suppuration in the foot, but, in spite of a sharp attack of delirium tremens, made a very nice recovery and obtained practically normal function at the ankle.

In the hæmorrhoid cases the operation of choice was the clamp and cautery. None of the cases had any postoperative hæmorrhage.

In the fractures of the vault of the skull I found

that the use of "sequestration anæmia" was of considerable help. The anæmia was produced by means of tourniquets applied to one or both thighs. The room between the inner table of the skull and the surface of the brain was markedly increased by this method and the annoying bleeding from otherwise insignificant vessels in the scalp was cut down perceptibly.

All the hernias of the indirect inguinal variety were treated by the Bassini method. Pursestring repair of the femoral ring was employed in the cure of the femoral hernias, and the careful mating of structures and the overlapping of fascia was depended upon to cure the ventral hernias.

The varicose ulcers were treated by rest in bed and the induction of passive hyperamia according to the method of Bier, and the rapidity with which these usually troublesome cases recovered convinced me that this method of treatment surpasses anything I know for this condition. The pain was relieved almost at once after the application of the bandage and the improvement in the appearance of the ulcer was very pronounced within a week of the first application.

The only case of tetanus which was admitted to service was treated with vigorous doses of antitoxine and ran the usual unfortunate course. No cases of tetanus developed from the many Fourth of July wounds. Each of these cases of suspicious wounds received an immunizing course of the tetanus antitoxine.

123 WEST SEVENTY-FOURTH STREET.

LIPOMA OF THE KIDNEY. By O. W. H. MITCHELL, M. D., Columbia, Mo.

Lipoma of the kidney is a comparatively rare condition and is especially interesting from the viewpoint of pathology, as fat is not normally found in the kidney of man. Fat is found in the kidney epithelium after a copious intake of fatty food, but this can be considered only as physiological, as the fat is merely stored up, never to become a part, as such, of the kidney proper.

Normally, however, we do find the kidney surrounded by a fatty capsule, which according to the view of many pathologists, plays the ætiological rôle in the formation of lipomata of this organ.

Fat is to be found pathologically in the kidney only in two conditions, fatty degeneration and lipomata. The first condition we cannot say to be uncommon. It occurs in wasting diseases, in the infectious diseases, especially those which affect the kidneys, and in poisonings with arsenic, phosphorus, etc.

It is also to be found in kidneys which are primarily affected, as in acute and chronic nephritis. In the conditions mentioned, fat is to be found in the epithelium, free in the ducts, sometimes as fat droplets in the interstitial tissue. The epithelium of the convoluted tubules are most frequently attacked, although the tubes and sometimes the tufts are affected. The degeneration occurs in local areas or as a diffuse condition. The tubules may present epithelium with marked fatty degeneration or may

have lost their epithelium and are frequently to be found filled with degenerated epithelial cells and fat globules. The fat globules in the cells show no tendency to coalesce. Along with the degeneration some form of nephritis is to be found.

There have been investigators who assert fat to be normally present in the epithelium of the kidneys of persons abnormally fat, or in the condition known as obesity. Among these are Hansemann. He cites one case, that of a woman weighing 300 pounds, in which fat was found in the epithelium. In this same article he also calls attention to the investigations of Rosenstine. This observation differs widely from the general opinion according to which fat can be demonstrated physiologically, but not pathologically, in the epithelium of the kidneys. In the kidneys of fattened animals fat can be demonstrated in the interstitial tissue extending from the hilum into the medullary portion of the kidney, but not into the cortex of the organ.

Lipomata are fatty tumors which occur only rarely in the kidney and are usually small and multiple. Some very large lipomata, however, have been reported, and mention will be made of some of them under the list of reported cases. Connective tissue and plain muscle occur in variable amounts. Lipomata with a considerable amount of connective tissue have been termed, by some, fibrolipomata. Great stress has been laid on the plain muscle tissue by some investigators, especially Müller.

Ouiteanumber of cases have been reported. Müller reports five cases, Lecrampe-Loustau eight cases, Warthin, Alsberg, Virchow, Beneke, Grawitz, Ulrich. Whipham, and others have reported cases. In the Tranactions of the Pathological Society of London, Dr. Dickinson reported a case of lipoma of the kidney of enormous size, weighing six pounds, seven and one half ounces. It was attached to the right kidney, and according to Dr. Dickinson originated in the cortex of the organ. A small piece was all that remained of the right kidney. The cortical substance of the left kidney presented small areas composed of tissue like the large tumor. Dr. Bristowe described a tumor which he said was identical with the tumor presented by Dr. Dickinson. Dr. F. P. Weber described a small lipoma of the kidney very similar to the one found in this laboratory. Dr. Warthin gave a detailed description of a large fibrolipoma of the kidney. This tumor and the one described by Alsberg are the only ones, Warthin said, that demanded surgical interference. Histologically these two tumors resemble one another closely. Alsberg and Warthin agree as to the origin of lipomata of the kidney. Beneke reported cases in which in close proximity to the tumor there was a fibroblastic area in which metaplasia of the cells into fat cells could be seen.

In 1. Echo médical du nord a case of multiple lipomata of the kidney is reported. The case is particularly of clinical interest because of convulsions and epileptiform attacks from birth to death, and at autopsy the finding of the following: Enlarged kidneys with nodular neoplasms, lipomata, in the parenchyma, measuring as large as four centimetres in diameter. The tumor masses on the surface measured seven to eight millimetres in di-

ameter. The masses were soft, some porous, and varied in color from yellow to brown. Curtis, the examiner of the specimens, thought these lipomatous masses unquestionably of congenital origin.

Carl Hartwig, in a thesis, described at length a large liposarcoma of the kidney and gave also the views of pathologists regarding the origin of lipomata of the kidney. His conclusion regarding the tumor was that the tumor arose from a nodule in the capsule and not from the fatty tissue of the hilus.

The ætiology is the point which concerns us most. As was said before, normally we find no fat in the kidney, therefore from whence does this type of tumor arise? Müller's conclusions on lipomata of the kidney are as follows: I. They arise from fatty tissue and always contain some plain muscle tissue. 2. They arise from imbedded portions of the fatty capsule or from imbedded portions of the suprarenal. 3. These processes take place in embryonal life.

Horn and Ulrich assume these lipomata to arise from the fatty capsule of the kidney; either that a portion of the fatty capsule becomes transplanted into the substance of the kidney, or the tissue of the kidney, growing faster correspondingly than the fatty capsule, envelops portions of the fatty capsule. Both processes, of course, occurring during

fœtal life.

Beer and Virchow contend that lipomata of the kidney arise from connective tissue by metaplasia. Grawitz adheres strongly to the belief that they arise from misplaced adrenal tissue. Alsberg and Warthin believe lipomata of the kidney arise from metaplasia of the connective tissue of the kidney, through the transformation of the fibroblasts of the proliferating centres or of the older connective tissue cells, into fat cells. Lecrampe-Loustau divides lipomata of the kidney into two groups, intranephritic and perinephritic. The first type, he says, arise from the fat at the hilum of the kidney; the second from the fatty capsule.

Lipomata of the kidney offer a resourceful field for research regarding the origin of tumors in general. In the study of lipomata alone, of course, little practical or beneficial knowledge can be acquired, still we possibly may learn by this means the ætiology of other tumors. One must draw his conclusions from many widely varying statements from a large number of investigators. We find many who regard lipomata as arising from embryological abnormalities, e. g., Horn, Ulrich, Müller, Grawitz, Lecrampe-Loustau, and others. As large a number believe that they arise by metaplasia of the connective tissue of the kidney into fat tissue, e. g., Virchow, Beer, Warthin, Alsberg, Grawitz, Beneke, and others

All of the following views appear plausible, and in a broad classification should be included until

proved to the contrary:

I. The congenital tumors may develop, a, from fat with imbedded portions of the adrenal; b, from fat at the hilum; c, by metaplasia of connective

2. The acquired tumors may develop, a, by metaplasia of the connective tissue; b, by extension of fat tissue from the hilum into the interstitial tissue of the kidney. The last view (2,b) seems plausible, since the kidneys of fattened domestic animals show this condition to be frequently present.

CASE.-Lipoma of the Kidney, Pathological Laboratory, University of Missouri. Female, thirty-two years of age, colored. Cause of death, shown at autopsy, carcinoma of the uterus. Kidneys were dark colored, left measured 12x6x4.5 cm., right, 13x7x3 cm. Capsules stripped readily. On the surface of the left kidney, just beneath the capsule, situated entirely within the cortex of the organ, was a yellowish white area measuring 6x8x7 mm. Microscopically the tumor consisted of fat and connective tissue cells. Many capillaries found in the tumor were distended with blood. The turnor was surrounded by a hyperæmic zone. No pigmentation was found. The tissue of the kidney was congested and was in a condition of moderate catarrhal nephritis. The capsules of the tufts, which were in close nephritis. The capsules of the tuits, which were in close proximity to the tumor mass, were much thickened. The preponderance of connective tissue in certain parts of the tumor would place it in the class of fibrolipomata of some investigators. No portion of kidney tissue was seen to be entirely surrounded by tumor tissue. The tumor presented an encapsulated appearance, the capsule being formed by compressed kidney tissue. Fat droplets were to be seen in some of the connective tissue cells which lie in close proximity to the tumor. Several glomeruli were to be seen adiaimity to the tumor. Several glomeruli were to be seen adjacent to the tumor tissue. A body very similar to a glomerulus was seen within the connective tissue area surrounding the tumor, and fat droplets were found in some connective cells external to it.

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211 SOUTH NINTH STREET.

A STUDY OF SPORES DEVELOPED AT AN ELEVATED TEMPERATURE.

BY BERNARD R. LEROY, M. D., Athens, Ohio.

In my studies of the bacteriology of the epilepsies and of psoriasis—two very dissimilar diseases, yet both in a measure being favorably influenced by treatment with the opsonins derived from two distinct spore bearing organisms, that have been partially described in the preliminary articles, published in the Journal, and of which more will be published in due time-I have been forced to take notice of certain phenomena which I have time and again seen in examining fluid cultures of these germs which have been first grown for from thirty-six to seventy-two hours at an elevated temperature of 158° F. (70° C.) and then at room temperature for many weeks and months.

It will be understood that all of this work has been carried out, in every particular, with the most exacting laboratory care.

For some time I have noticed, in these old cul-

tures which I would examine from time to time in the hanging drop, that often there would be strange looking particles of substances which I long mistook for particles of media, until in one particular fluid medium I noticed particles in great numbers, and some were very large, about the size of a red blood corpuscle, which were in active motion. I had noticed before a motion in these bodies but passed it by as being Brownian movements. time the motion was too decided and well regulated for me to not give it my whole attention. This caused me to observe certain strange and, to me, unknown morphological changes in the spore; slowly was I forced to believe in what I am about to describe, nor have I found anything in print which helps to explain these changes, nor have I found anything in the published works of known investigators which bears upon these changed forms, which I am now only too positive are unknown forms of the spore. So far I have succeeded in growing in liquid media those forms of several well known spore bearing bacilli.

The first to be noticed by me were very small, perfectly round particles, clear, and of a highly refractory nature; upon very close study there appeared a pale apple green color to those particles, which gave the impression that it was in constant motion within itself, that is, that it was in a continuous streaming motion from its periphery toward its centre, more to an uncertain line than to a central point; in larger particles was noticed this motion with no uncertainty, and following this up with examinations of still older cultures. I discovered the larger and more fully developed particles, those having independent motion, and ultimately the organs of locomotion.

That these forms have some pathological import I feel quite certain, that is, that the modified forms of these spores have a modified form of secretion and excretion, thus producing changed pathology.

After studying these particles in the hanging drop I would endeavor to stain these particles, using various stains and processes, but in every case I failed to do what I most longed to accomplish, and obtained as a result in every trial a small, stained dot or spore not in the least resembling the object observed under the glass, the stain or fixing being at fault. When the particles are not developed to the independent motion stage, the results of staining will be sporelike in result; when of larger particles the result will resemble artifacts.

As stated the smaller particles are round and of a pale apple green color, and have a distinctly Brownian movement; these grow slowly by the enzymes taking in substance from the culture fluid and gradually reach the size of a red blood corpuscle, when the organs of motion may be seen distinctly, when single, moving in a milling motion, i. e., not unlike the motion imparted to a long slender reed held in the hand and waved in a circular movement over the head; or, when more than one organ, then the particle itself whirls with rapid motion without advancing, nor changing its position very much. The

particle never advances through the liquid flagella, end first; it is always in the rear.

These slender organs will break loose from the particle and swim off independently, or, when two particles are in close proximity will act as feelers and seem to cover the surface of each in a way that is strongly suggestive of sexual life. The end of these slender filaments have broadened surfaces not unlike an elephant's foot in outline.

In Fig. 1 we have the simple form with apple green substance with limiting membrane, resembling a large spore, only being round in shape.

In Fig. 2 is shown the particle in a more advanced state, the apple green substance has changed its form, contains along its inner and more central border a number of bodies of a dark color, and a little more than one half of the apple green substance is covered with a clear white transparent substance not unlike albumin, shaped somewhat like a half moon, always enveloping the dark spots within the apple green substance; at this stage of growth the particle is motile and with much patience and care the filament of motion will be seen, passing as a rule out through the half moon, and the particle will advance through the fluid with the apple green substance first, or in advance.

In Fig. 3 is to be seen a still more advanced stage; the particle has assumed a more round shape, the dark spots in the apple green substance have migrated further into this substance, and the half moon is now filled with minute dark spots but not exactly similar to those found within the green substance; now will be noticed many filaments of motion, and the particle will either move away with rapidity or whirl with lightninglike speed, when it will be impossible to see the organs of motion, nor to see clearly the particle, but it will look like a brilliant, highly refractory spot in the fluid, and the motion will be mistaken for the so called Brownian movement.

In Fig. 4 will be seen one of the shapes assumed by the spore of the organism found by me in the reported case of psoriasis, and the color is the same in this as in the particles just described.

In Fig. 5 is represented a particle of many months' growth, that is it was found in a fluid medium in which I have been growing the spore bearing bacilli made use of in my study of the epilepsies. Now the globules within the apple green substance have larger granules arranged on one side with smaller granules on the opposite side, these granules are white instead of the dark color seen in the preceding cells, on the side of the cell, wherein the small white spots are found will be seen the motile organ.

In Fig. 6 the particle has assumed the dignity of a large, very pale, transparent cell, but, with much care the following organs will be seen, with a high power lens: The apple green substance is gathered within, in form of a nucleus, which occupies the central portion of the cell, containing a number of dark spots, which seem to be quite stationary, while the apple green substance streams, as described with great rapidity; in the substance without the nucleus, are seen a number of dark globules arranged around the outer periphery of the cell which project above the outer surface of the cell, giving a rough appear-

ance to this part, these are connected, by fine threadlike filaments with the organ of motion (sexual organ?), which in this instance is feeling the surface of another cell (Fig. 7) which is about the same size and found in the same culture and drop used in this study, but there are many points wherein they differ in form. This cell is composed almost entirely of apple green substance, containing but few globules of a dark material which seem to be free within the substance, this apple green substance, is streaming towards the centre as in the

Thagella are thrownou retracted as well

other cells; on one side of the cell will be noticed a sagging out of the limiting membrane of the cell and the sexual, or motile organ, is seen as if searching for the cell in its immediate neighborhood. I watched these two cells for hours, they did not attempt to move away from each other but kept up a playful feeling with their single organ. This last cell was darker in all its parts than the other cell. From their action and difference in physical form I believe them to be sexually distinct, and of oppo-

In Fig. 8, we have the organ of motion or sexual organ, as I am wont to believe. It is somewhat diagrammatic but shows the several parts as I was able to see and study them. This figure is drawn from the Fig. 7 cell, and represents the caudal portion only, the part marked (b) is an extension of the limiting membrane of the cell, (c) is the margin of the apple green nucleus, the space within the confines of these membranes is filled with a clear transparent substance, and contains a number of small, faintly darker colored granules than the other cells. I was able to see the fine threadlike filament which runs from one to the other of these granules and then uniting makes its exit in the direction of the motile organ. That it runs within the folds of the membrane which compose that organ I have no doubt, vet I was not able to demonstrate that fact clearly. It ends, as I have stated in a broadened portion at the extreme end, and this end piece seems to possess more than ordinary power, when compared with other parts of the same cell; this also was the organ or filament which I saw break away from the cell and swim away acting as if in search of its sexual mate, I regret to say that I was so nearly exhausted from my long vigil that I left the laboratory before I discovered the life end of the free filament.

In Fig. 9 will be seen particles which I found in liquid media containing pure cultures of the spore bearing organism, which I made use of in my studies of the epilepsies, after it had been boiled for more than two hundred and fifty hours, boiling the media from six to ten hours at a time, adding sterile water to keep up the measure, always boiling after such addition for some hours; then permitting the culture to rest for days after changing the media to plus alkaline in reaction. In every instance I would get a good, full growth of a pure organism in a quantity of this medium. I made experiments upon the organism by rendering the media more or less acid, thus finding that I could produce a full crop of spores, free from vegetative forms, also, I found that I could produce vegetative forms at will,

free from undeveloped spores.

These bodies (Fig 9) have no motion and resemble large cells with nucleus containing one or more nucleoli. They resemble the bodies found in

In the fluid containing an abundance of spores from the organism found by me in the scales of psoriasis, grown under the same physical conditions as described above, I have found quite a different organism which from its after actions more closely resembles the protozoon than it does the lower order to which I believe it to belong.

Fig. 10 represents the various stages of the evolution of the germ from the spore to the protozoonlike organism which is in constant act of splitting. I have seen as many as half a dozen forms hanging to one head, before they would become separated and independent germs, each to continue this wonderful form of production; during the whole time the organism is in a constant state of nervousness or quivering, turning upon its long axis with agility and seemingly to be in action constantly, nor have I as yet succeeded in reverting this form back to the original spore bearing organism, simply because I have not learned the temperature and the chemical nature of the food required, for be it understood that the spore is wholly and entirely dependent upon certain chemical conditions for its very existence and development, as is the vegetative form, and at will they can be made to produce spores entirely free from vegetative forms and vice versa. That the ordinary laboratory form of sterilizing is at fault when spore bearing organisms are to be reckoned is well understood, and either strong acid solution or the autoclave should always be used to produce sterility.

In Fig. 10, "a" represents the spore; "b," the first growth of the protozoonlike organism with the spore in centre of its long axis or body, the ends are at an angle to the body and always held patent in opposite direction, the ends do not possess motile power; "c," is the germ in a more advanced degree of development, with spore greatly reduced in size, and is being pushed towards the head end of the organism, the organism is in the act of splitting; "d," is the protozoonlike organism free from the spore, and has split into several organisms. In this stage the whole bunch is in an active state of nervousness, and will be constantly moving or turning upon itself; often I have seen many of the splitting organisms hanging to the same head each undergoing the act of splitting with that strange activity spoken of before; "e," is the single protozoonlike organism during a period of rest, it only being momentarily in space of time; "f," is the vegetative form of the organism, very delicate, very slender, and almost transparent in nature, making it very difficult to find even under a high power objective.

It will be of interest to learn the relationship of these forms to "bodies" found in certain diseases, also what relation, if any; that the last described organism, [developed from the spore bearing organism found in the scales taken from the case of psoriasis mentioned before], has to the spirochætæ. This organism, as I have developed it, will be readily found should my reported laboratory work be followed with care. I believe this form of studying the microorganism (elevated temperature cultivation) will be productive of good results if carried

Now, the most puzzling freak in spore growing that I have discovered is the fact that the culture medium in which I grew the bacilli with which I studied the epilepsies, and with which I made the above studies was first inoculated one year ago. July 6, 1907, and during the first several months I caused the medium to boil for from six to ten hours each day for one week, then permitted it to rest until a growth would develop, and after a careful examination would boil again until I have boiled that medium nearly three hundred hours. To-day the growth is alive and free from any contamination whatever. Now what, if any, action did this boiling have upon the organisms found and described in this study? Perhaps the elevated temperature by destroying certain enzymes and not others permitted the organisms to live a modified form of life. This will only be learned after a long cultural experiment with a known organism; yet from what I have found in my studies I believe that it will be demonstrated that modified forms of germs will produce a modified or changed pathology.

Another strange experiment was the taking of some of the fluid media in which I had grown the organism used in my study of the epilepsies, and by a careful use of acids and boiling I succeeded in causing the spores to so contract in size that ultimately they became ultramicroscopic in size, the medium being sterile (?) for the space of six days, having examined it with care each day during that time. In three months from the last examination I was able to detect very minute spores and a very few exceedingly small vegetative forms; in time they increased in number and size so that now I have an abundant growth of a pure strain of the bacillus. Nor is this all. I then endeavored to grow or induce the spores to grow to an abnormal size without passing into the vegetative form, and in this I succeeded so that I have seen spores as large as small mononuclear lymphocytes, this in the hanging drop; but, never could I produce a stained slide of these abnormal spores because, as I believe, they are too susceptible to surface tension and chemic

This paper is intended to be an answer to the many letters of inquiry which have reached me concerning my paper in the *Journal* for April 25th; many of these letters I have failed to answer personally for lack of time.

I also will endeavor to answer the letter which appeared in the *Journal* for May 2nd from the pen of one of New York's most eminent dermatologists, an author of the highest standing, a veritable Nestor among skin specialists. He condemns my work. This I certainly regret, but, we can say with Galileo in the fullest confidence, "E pur si muove!"

It will be understood that every stage of this

It will be understood that every stage of this work was done with a full understanding of the most strict laboratory rules.

In the many experiments carried on with the "myelin exudates" or, "artifacts" as you may wish to call them, I found that the spores held in the psoriatic scale would not germinate on solid media at any temperature whatever, nor, on any kind of solid media, and I made use of many.

The spore held within the scale will grow in liquid media only, and at an elevated temperature. 158° F. (70° C.) being the best, or, over. After which it will grow on most any of the solid media, at room temperature.

In my first article I told of the manner in which I first demonstrated the organism, in soapy water, etc., then I said "I then made a liquid medium," etc. This my New York Nestor failed to notice, else he would not have called the organisms described "artifacts," as artifacts do not swim through the fluid, nor reproduce themselves by spore production and also by a splitting process that is so constant and endless in action (see preceding pages). Nor can you make opsonins from artifacts, that will cure psoriasis!

The elevated temperature at which the organism is first grown precludes the thought of any of the vast number of organisms contaminating the fluid, but for the benefit of those who may care to know I will give the latest method which I found to be productive of good results in growing this organism.

The liquid fluid: Make a one per cent. solution of gelatin, in tap water, and place in autoclave for one hour at 266° F. (130° C.), to kill all spore life, when cool add glucose to make o.I per cent. solution, then sterilize as in other media, after bringing it to plus alkaline in reaction; now gather the scales as suggested in my first article (after having the patient go many days without medication, externally or internally of any kind whatever), then place the scales in tubes or culture bottles, and have as many as you can get, for many of the spores will not germinate; and after you have a great abundance of scales thus bottled in a greater or less amount of the fluid media, place the bottle in an incubator, or on heavy copper plate and run temperature up to 158° F. (70° C.), and hold at that point for from thirty-six to seventy-two hours, then at room temperature for days, it will be better to prepare thus several bottles, so you may be able to examine the progress of the germ or "artifact" development. You will see the germ as I described it in my first paper, within the first twenty-four hours, and, after some weeks of growth, without disturbing, you may be able to see the changes mentioned before.

Now as to the present condition of my first patient mentioned in the first article, I wish to say that he is almost free from the psoriatic eruption, and I feel confident that he will be permanently

cured.

The first effect noticed was the fine pitting of the scales, noticed in every part of his body, then the change of color in the raised, crimson colored patches of the disease, then a pitting or lowering of parts of the patches, then a lowering of the edges of the patches, then an almost ending of the scale formation, then a disappearing of the raised patches, leaving the white mortarlike stain, this disappeared leaving no scar nor stain whatever, the itching stopped early in the treatment. Then small, isolated, raised, scablike scales over the areas were noticed where the large patches had been, these went away, to be replaced by like eruptions only much smaller, these were surmounted with very fine white scales, these pass away and a still finer pimplelike eruption, very scanty, comes and goes, growing less and less every week. The patient is now almost free from any eruption whatever, and during all this time has attended to his business and has enjoyed excellent health.

I started with very small doses of the opsonins, about one half the dose given of the opsonins in a case of infection by staphylococcus, and increased rapidly in size of dose and in strength of opsonins as I noticed the fine pitting condition spoken of before, until I have given 5 c.c. of a very strong solution of the opsonins, at one treatment given in the back between shoulders deep under the skin.

In the treatment I have been governed entirely by my experience in treating with the opsonins in

other skin diseases.

In other but milder cases of psoriasis I have been having the same success and find that the same changes follow quickly as described, that the organisms are to be found in the rete I feel sure, but in just what form is a question, since I have seen the spore in the psoriatic scale grow into the vegetative form, then have I caused them to go into the spore form, and then at an elevated temperature found it changed, in fact, witnessed the change many times, from a spore to an organism not unlike a small muscle fibre like organism which propagates its kind, not by spore production, but, by splitting lengthwise as described in this article.

I have asked my friend Professor Bergey, of the University of Pennsylvania, to work out the organism from a solution of the first pure culture made and used by me in my study of the case reported. That the organism is one of a well known flora found in fresh water, I feel quite certain, and that it requires an elevated temperature to first start it growing on the human body I also feel certain; that it has not been discovered by our pathologists is due to the fact that it can change its form and very closely resemble a fine muscle fibre, or, because it is so delicately transparent that it has been overlooked, for even in a pure culture of the vegetative form it is very difficult to demonstrate under a high power lens. The full description, and cultural life, I will leave to Professor Bergey.

PULSATION OF LARGE ANEURYSMS, NONEX-PANSILE, BUT TRANSMITTED.

By SIDNEY LANGE, M. D., Cincinnati,

Radiographer to the Cincinnati Hospital.

That expansile pulsation is a pathognomonic sign of aneurysm is laid down in textbooks as an almost infallible rule. It is the purpose of these few lines to show that an aneurysm, which is large enough to impinge upon and impart its pulsation to the chest wall, will not, as a rule, execute expansile pulsations, but will simply transmit pulsations from the blood current passing through it, or more often from the heart. The smaller aneurysms do execute expansile pulsations, but the pulsation disappears as the result of the accumulating clot, before the tumor is large enough to impinge upon the chest wall and manifest its characteristic pulsations to the palpating hand.

In examining with the x ray chests containing mediastinal tumors, I have repeatedly observed that large tumors, which upon autopsy proved to be aneurysms, failed to show (upon the fluorescent screen) any signs of pulsation. Yet some of these cases, in which the tumor pressed against the anterior or posterior chest wall, gave to the palpating hand the sense of an expansile pulsation, undoubtedly a transmitted one. On the other hand, small aneurysms and nonaneurysmal dilatations of the aortic arch have invariably shown fairly active pulsations upon the fluorescent screen. The smaller the aortic tumor, the more active the pulsations seemed to be; in some the pulsations were so active that the tumor mass, when watched with the

fluorescent screen, would almost disappear during diastole only to swell out prominently during systole. In this latter type of cases it was assumed that such active pulsations could occur only in the absence of accumulated blood clot, which presupposes an unbroken endothelium, hence the diagnosis of simple aortic dilatation was advanced.

with sharp outlines. Hence expansile pulsations of mediastinal tumors may be recognized upon the skiagraph by the double contour of their shadows.

The following three cases will serve to illustrate this point:

Fig. 1 shows a *small* aneurysm of the descending part of the arch of the aorta, the expansile pulsa-

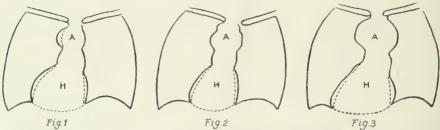


Fig. 1.—Small aneurysm of the descending part of the arch of the aorta. Fig. 2 -Aneurysm of the descending part of the arch of the aorta, somewhat larger than that shown in Fig. 1. Fig. 3.—Large aneurysm involving the entire arch of the aorta. A, aneurysm; H, heart.

But when the aortic wall gives way and thrombosis occurs (a true aneurysm resulting) the pulsation becomes less active and the diastolic recoil less marked. When the tumor mass and its blood clot (the mass of which usually increasing with the size of the aneurysm) reaches considerable proportions, there is no longer any pulsation or diastolic recoil visible to the x ray, although the palpating hand upon the chest may still feel a transmitted impulse.

Moreover, it has been shown that a nonaneurysmal tumor of the mediastinum may execute transmitted pulsations which may be visible upon the fluorescent screen. Gebauer (Deutsche medizinische Wochenschrift, 1900, No. 35) reports a case of mediastinal sarcoma which was erroneously diagnosticated as aneurysm because of its visible pulsations upon the fluorescent screen. It is therefore impossible to distinguish by x ray examination a large aneurysm from other mediastinal tumors by the visible expansile pulsation of the former.

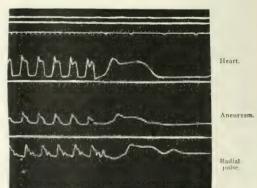
Clinically, we recognize expansile pulsation by the fact that any two points on the skin in the pulsating area appear to move apart during each pulsation. But it is readily conceivable that an aneurysm or any solid tumor when closely applied to the chest wall and receiving an impulse either from the heart or from the blood stream may transmit this impulse equally in all directions and give rise to the phenomenon of expansile pulsation. This fact was brought forward recently in a patient presented before the Association of American Physicians by Eshner. In this case a metastatic tumor of the sternum showed a marked expansile pulsation and was erroneously diagnosticated as aneurysm.

Permanent graphic evidence of the absence of expansile pulsation in certain aneurysms may be obtained upon the photographic plate. Since x ray pictures are not made instantaneously, any movement of the part skiagraphed will be evident by a blurring of the outlines of that part; thus the outlines of the heart always appear blurred upon the skiagraph plate while objects at rest cast shadows

tions of which are plainly evident by the double contour of the aneurysm. This aneurysm did not impinge upon the chest wall nor give any evidence of pulsation to the palpating hand.

Fig. 2 shows a somewhat larger aneutysm (verified by autopsy) involving the arch of the aorta, which had produced a bulging of the upper part of the sternum; yet no pulsation was visible or palpable over the sternal prominence. The contour of the tumor upon the skiagram is fairly sharp, which speaks against active pulsation. This tumor pressed upon the trachea, causing extreme dyspnæa, for the relief of which a low tracheotomy was done and a tube inserted. Looking directly at the compressed tracheal walls through the tracheotomy opening no pulsation could be seen.

Fig. 3 shows a large aneurysm (verified by atuopsy) involving the entire arch of the aorta. This mass produced a bulging of the chest wall, over which the supposedly expansile pulsations



110. 4 - Sphygo,ograph of the heart, aneurysm, and radial pulse.

could be felt. Upon a fluoroscopic examination no pulsations could be seen, while upon the skiagram the outlines of the tumor mass appeared clear cut, giving no evidence of pulsation.

The accompanying sphygmograph further confirms this observation. It was made from the

aneurysm shown in Fig. 3.

Comparing the tracing obtained from the aneurysm with that of the heart we note that the pulsations are practically synchronous and that the apex of the aneurysm tracing is as sharp as that of the heart, while its descent is more sudden. Furthermore, the aneurysm tracing bears the closest resemblance to that of the radial pulse, being that of an ordinary arterial pulse.

If the pulsations of the aneurysm were truly expansile, we would expect a slower rise, a more sustained summit, and a slower descent than that of the

heart or the radial pulse.

22 WEST SEVENTH STREET.

AN ADJUSTABLE LENS FOR OBLIQUE ILLUMINATION OF THE EYES.

By S. W. Newmayer, M. D.,

Philadelphia, Wills Eye Hospital.

Oblique illumination of the eye is one of the important methods of examining the cornea, the anterior chamber, the iris, and the lens. By focusing the rays of light through a lens of two or three inch focal distance, information is ofttimes obtained which cannot be procured by other methods. Abnormalities or foreign bodies located in these media can readily be diagnosticated. Every physician has experienced the difficulty of maintaining proper illumination of the eye while removing a foreign body. In most cases an assistant is necessary to hold the lens, and even then the light is more often shed where it is of little value to the operator. To

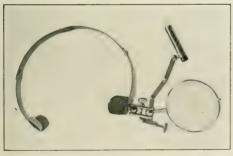


Fig. 1 -- Photograph of adjustable lens, with the electric lamp attachment.

overcome this difficulty I devised the following lens and illuminator. It consists of a lens of the required focal strength set in a frame, with a handle at the end of which is a ball knob. This knob fits and works in a socket attached to a head band. By placing this band over the head of the patient, who is seated about two feet from the source of illuminators.

nation, the operator can adjust the lens in position to throw the light where required and maintain it without any assistance. This gives the physician full use of his hands for operating. There are at-



Fig. 2.-Photograph of instrument in position on patient.

tachments for electrical or candle illumination, if desired. The entire apparatus, including the head band, is readily taken apart and can be folded into a small case.

1306 PINE STREET.

The Attendance at European Universities.—In stating that in 1907 there were in Europe 125 universities, which were visited by 228,732 students, Vice-Consul James L. A. Burrell, of Magdeburg, sends details. Of these the University of Berlin had the largest number of students, viz., 13,884; next came Paris with 12,985, Budapest with 6,551, and Vienna with 6,205. The list by country follows:

| | No. of | |
|-----------------|---------------|-----------|
| Country. | Universities. | Students. |
| Germany | . 21 | 40.000 |
| France | . 16 | 32,000 |
| Austria-Hungary | | 30,000 |
| England | | 25,000 |
| Italy | | 24.000 |
| Russia | . 0 | 23.000 |
| Spain | | 12,000 |
| Switzerland | | 6,500 |
| Belgium | | 5.000 |
| Sweden | | 5,000 |
| Roumania | | 5,000 |
| Holland | - 5 | 4,000 |

The smaller countries—Greece, Norway, Portugal, Denmark, Bulgaria, and Servia—have each one university.—Science.

Our Beaders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows: LXXIX.—How do you treat sick headache?

LXXX.—How do you treat asphyxia neonatorum? LXXX.—How do you treat asphyxia neonatorum? (Closed November 10, 1008.)

LXXXI.-How do you treat chronic eczema? (Answers

due not later than December 15, 1908.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. Our readers are asked to suggest topics for discussion. The prize of \$25 for the best essay submitted in answer to question LXXVIII has been awarded to Dr. Charles Floyd Burrows, of Syracuse. N. Y., whose article appeared

on page 842.

PRIZE OUESTION LXXVIII.

THE TREATMENT OF ACUTE CORYZA.

(Concluded from page 944.)

Dr. E. S. McKee, of Cincinnati, observes:

Ubi irritatio ibi fluxus is more true in the Schneiderian membrane than elsewhere. Zuckerkandl demonstrated that the arteries which supply the nose are different from those in many other parts of the body, largely because they enter through bony foramina alongside the veins. If irritation occurs, a flow of blood is sent through the artery, it enlarges but does not push aside the vein as in parts where the tissues are soft, but compresses the vein confined with it in the bony canal, and thus by increased inflow and diminished outflow augments the congestion both coming and going. This vascular mechanism is somewhat unique, and a full understanding thereof is of

We meet coryza most frequently at the changes of the seasons, but it is with us always. Most cases probably depend on a microorganism, but some on irritation, while ingestion of meats and wearing heavy clothing seem to predispose.

Preventative treatment consists largely of cold sponge baths, with regulation of diet, elimination, light clothing, and exercise in the open air. Some, however, can not endure cold baths. The recumbent posture on account of the force of gravity aggravates a case very much and should be avoided

The treatment should consist in, first, an alkaline solution to cleanse, then a curative solution, then a

soothing solution dissolved in oil.

To abort an attack administer rather large doses of quinine. The following combination is of value

| B | Morphine sulphate, |
|------|------------------------------------|
| | Atropine sulphate, |
| | Comp. powder of ipecac,7.0 grammes |
| 7\/ſ | Quinine sulphate,4.0 grammes |

S. One capsule at bedtime with a hot drink, repeated once or twice during the day, if necessary.

A good internal remedy consists of sweet spirit of nitre, and aromatic spirit of ammonia, equal parts, one teaspoonful every four hours to an adult. Some attacks will abort from:

| B | Ammonia | water | , | | | 1.33 gran | nmes ; |
|----|-----------|--------|-------|------|----------|------------|--------|
| | | | | | | I.o gra | |
| | | | | | | 4.0 gran | |
| | Distilled | water, | | | | 8.o gran | nımes. |
| M. | S. Five | to ten | drops | on a | blotter, | and inhale | every |

two hours. Frequent inhalation of boiling hydrogen peroxide the first night of the attack will often abort

Threatening deafness from coryza should be met with the following salve, painted on the nasal surfaces as far back as possible several times a day:

| P_{k} | Menthol, | | | 0.2 | gramme. |
|---------|-----------|-------|------|-----|----------|
| | Cocaine, | | | | gramme; |
| | Petrolatu | ım, . | | 150 | grammes. |
| M | | | | | |

Purulent discharge in corvza should be treated by thorough irrigation with hydrogen dioxide combined with equal parts of sodium bicarbonate, two per cent. solution, followed by a two per cent. solution of

Ointments are a convenient and enduring, though uncleanly, method of treatment. They are best administered in collapsible tubes with long nozzles. The ointments prepared with the suprarenal preparations are beneficial. These can be prepared as

| $\mathrm{P}_{\!\scriptscriptstyle B}$ | Suprarenalin, | |
|---------------------------------------|-------------------------------------|----------|
| | Normal salt solution,q. s. ad. 16.0 | |
| | Wool fat, | |
| | Petrolatum,18.0 | grammes. |

This is a strength of 1.1000.

Snuffing powders are beneficial and should be made light and fluffy, very finely powdered, and intimately triturated. A good one is:

| P_i | Boric acid, x, | gramme |
|-------|---------------------|---------|
| | Thymol iodide, | gramme |
| | Bismuth salicylate, | gramme |
| | Sodium chloride, | gramme |
| | Powdered elm,50.0 | grammes |

Another is

| | 7.1.1.1.1 |
|--------------|--------------------------------------|
| \mathbf{R} | Menthol, gramme; |
| | Thymol, gramme |
| | Eucalyptol, gramme |
| | Orris root, |
| | Sodium chloride 6.0 grammes |
| | Powdered elm,50.0 grammes |
| | Hydrastine hydrochloride,4.0 grammes |
| | |

Local treatment should be preceded by the snuffing, spraying, or douching of the nares by an alkaline or antiseptic solution. Those made by dissolving Seiler's or Thrasher's tablets in water are good. A simple alkaline and antiseptic nose wash which can be readily made up at home is as follows: Salt, one half teaspoonful; soda, one teaspoonful; phenol, ten drops; water, one pint. This is best used lukewarm, the patient stooping over, snuffing through

the nose and spitting out of the mouth. The addition of a bit of carmin gives this simple mixture a more medicinal appearance and enables the patient to see that it has passed through the nose and out of the mouth. The most valuable mixture for the relief and cure of coryza used locally by means of atomizer, pledget of cotton, or medicine dropper, the patient assuming the recumbent position for fifteen minutes after application, is as follows:

Dr. John W. Scott, of Gordonsville, Va., states:

The treatment of acute coryza may be prophylactic, abortive, or palliative. "A cold in the head" should never be regarded as so trivial as not to re-

ceive prompt and careful attention.

Eliminating acute nasal catarrh as a symptomatic lesion in measles, scarlet fever, smallpox, whooping cough, typhoid fever, influenza, diphtheria, scurvy, diabetes, erysipelas, and rheumatism, as well as the rhinitis produced by the ingestion of iodine, and that caused by the passage of atropine into the nostril through the lachrymal canal when this substance is instilled in the eye, our attention is called and our efforts directed toward combating the predisposing causes. No individual case can be inteligently managed without an understanding of the underlying current productive of the condition.

Nasal deformities, postnasal adenoids, and chronic pathological conditions of the nasopharynx and parts adjacent; syphilitis, rheumatic, gouty, and tuberculous diatheses; menstruation in nervous females; indigestion, excesses of every kind, more -especially excessive indulgence in alcohol, tobacco, and in nitrogenous foods; venery; fatigue; poorly ventilated living rooms; the wearing of too heavy clothing, underwear particularly, are to be regarded as predisposing, while as exciting causes may be briefly laid down vaginal secretions from the mother in the newborn, chilling, exposure to draughts, while perspiring, wetting the head with cold water with some persons, exposure to a lower temperature after a hot bath, too close contact with an affected person, and the use of towels or handkerchiefs which have been used by an affected individual, and the inhalation of certain fumes and of dust. Atmospheric conditions should also enter this list, especially cold and damp conditions:

With the actiology always in view, in this as in every other diseased condition, we are brought to the consideration of the abortive treatment of acute rhinitis, the success of which is conditioned on the early employment of the remedies thus directed. A hot bath, followed by a brisk rub with a bath towel, rest in bed, with bed clothing sufficient to keep the skin active without deranging the digestion by the use of diaphonetics. The temperature of the room should be about 70° F., and the air pure. If the patient is robust, five grains each of calomel and Dover's powders are given in one capsule, and in four hours followed by a brisk saline purge. In

less robust persons the following:

 B
 Codeine phosphate, gr. i;
 gr. i;

 Powd. camphor, gr. v;
 gr. v;

 Extract of belladonna, gr. ss.
 gr. ss.

S. Take one capsule every three hours.

Two hours after the last capsule give calomel, grain iii, and follow this in three hours by a saline purgative. The patient is to be isolated, and instructed to carefully inhale, for a few seconds every two hours, from a bottle, formalin. During the dry stage the nostrils may be occasionally douched with hot normal salt solution, but this should be immediately discontinued so soon as the watery discharge commences, but the formalin should be continued, but the danger of irritation therefrom is to be guarded against. The use of the handkerchief should be advised against, so far as cleanliness allows, and the skin around the nostrils and of the upper lip protected by some bland salve. The diet should be light, and all stimulants and tobacco interdicted.

After thirty-six hours the patient may leave his room, and if not well palliative treatment commenced.

Every effort should be directed toward improvement of the general health, and any diathesis should have appropriate attention, while the avoidance of every exciting cause is urged. So long as the nasal discharge is thin, be it serous or mucous, the nostril should be cleansed three times daily with some alkaline antiseptic, and sprayed with some oily substance. Liquid petrolatum is very efficient. In this stage, as in the first, cocaine solution, two per cent., and solution of adrenalin chloride, in combination, applied to the nasal mucosa, give brilliant results, but the reaction is, in others, worse than before its use, and cocaine should never be given the patient to use at his discretion.

The irritation and soreness left in the nostrils after other symptoms have subsided is relieved by painting the mucous membrane with a solution of fifteen grains silver nitrate to one ounce of water.

In children the nostrils should be frequently carefully cleansed, the oily preparation, as petrolatum, applied thereto, and the general condition attended to.

Sometimes minute doses of Dover's powder or paregoric have a pleasing effect.

Dr. J. P. McQuillin, of Brooklyn, N. Y., says:

The treatment of acute coryza depends on the stage of the disease. The attack may be divided into two stages, that of engorgement and of secretion.

During the stage of engorgement the proper treatment is to deplete the bloodvessels. This may be done in two ways, by constriction and by depletion. I mention the second way only to condemn it.

You should advise the patient to remain at home and in a room with a warm, moist atmosphere. This may be accomplished by keeping the room filled with steam in the winter time.

You should first prescribe some energetic cathartic, which by withdrawing fluids from the intestinal tract, relieves the congestion in the nasal

cavities. I now order ten grains of Dover's powder, which acts nicely in two ways, by relieving the pains and aches which the patient complains of and by causing a profuse perspiration, and thus relieving the congested capillaries of the nasal tract.

As a local application to the engorged mucous membranes the following usually gives considerable relief. A few drops of the solution should be dropped into each nostril, every three hours, for not more than four times:

| \mathbf{R} | Cocaine hydrochloride,gr. ii; |
|--------------|-------------------------------|
| | Camphor,gr. 1; |
| | Rose water,gtt. ii; |
| | Liquid petrolatum, |

For the frontal pains, which are so distressing, hot cloths to the forehead will give considerable relief.

Should the patient not be able to give up and remain in the house, he may take a capsule containing the following drugs:

| \mathbf{B} | Powdered camphor, | | |
|--------------|----------------------------|--------------------------|----|
| | Extract of belladonna, | | |
| | Quinine brom., | gr. | |
| M. | S. One capsule to be taken | every hour for four dose | 25 |

M. S. One capsule to be taken every hour for four doses, or until the throat becomes dry, after which every three hours will be sufficient.

One capsule to be taken every hour for four doses, or until the throat becomes dry, after which every three hours will be sufficient.

If, notwithstanding this treatment, the disease runs on to the stage of secretion, or should the paient wait to consult you until the membranes are secreting freely, the treatment will then consist of the use of astringent solutions. The disease will, if now left alone, run a natural course, the secretions first becoming watery, alkaline, and irritating to the skin surfaces over which they run. This secretion will gradually increase in amount until almost a constant stream runs from the nostrils and the patient becomes exceedingly miserable. After two or three days the secretions become less in quantity and the character of it changes. It now becomes thicker, and gradually turns to a yellowish, offensive discharge, which after a few more days slowly lessens and stops. The whole cycle from the first symptoms to the final cessation of the discharge taking a week or ten days.

To cleanse the nostrils any of the alkaline solutions or plain salt and water will answer, after which an astringent solution such as the following acts well:

| B | | s leaves, |
|----|---------------------------|-----------|
| | | , |
| | | |
| M. | S. A few drops in each no | ostril, |

There are usually no complications following an attack of corvea. Occasionally you will get trouble with the middle car or the frontal sinus, the treatment of which does not properly come under the title of this paper. Occasionally the membrane over the turbinate bones is left in a flabby, soggy condition, due to the soaking it has had with the profue discharges. If this condition occurs it will require applications of stronger astringents or possibly the cautery.

There is one other plan of treatment which from personal experience I have found to be very ef-

ficacious. On the outbreak of an attack of acute coryza I have found that a change of climate, even though the distance be short from home, will invariably cut it short. I have in twenty-four hours stopped an attack, which usually runs over a week, by simply running away from it by means of a slight change of climate.

Correspondence.

LETTER FROM LONDON.

Unqualified Dentistry.—A Complaint by Nurses.—Cataphoresis.—The Investigation of the Sleeping Sickness. —The Death of Mr. William Knight Treves.

London, November 3, 1908.

A very important case affecting the practice of dentistry has recently been tried in the courts. The prosecution was undertaken by the British Dental Association, a body that has always proved zealous in defense of the professional rights of dentists. The original case was heard before Mr. A. C. Plowden, a metropolitan magistrate, who convicted Harry John Barnes and fined him 20s., with £3, 3s. costs, for offenses under the Dentists' Act of 1878 and the medical acts. The complaint was that Barnes, not being registered under the Dentists' Act of 1878 and not being a legally qualified medical practitioner, unlawfully used the following description, namely: "H. J. Barnes, finest artificial teeth at moderate prices; extractions. Advice free. Hours, 10-7. English and American teeth. Painless extractions. On behalf of the defendant it was contended that he did not use any name, title, addition, or description implying that he was registered under the act in question, or that he was a person specially qualified to practise dentistry under the Dentists' and the Medical Acts. On the evidence before him Mr. Plowden convicted, and later, on the application of the defendant, stated a case for the consideration of the Court of Appeal. The case was heard by the Lord Chief Justice, Mr. Justice Bigham, and Mr. Justice Walton, who, after a long and careful hearing, in which the appellant was represented by the most able counsel, agreed unanimously in sustaining the verdict of the magistrate. The main contention of the appellant's counsel was that the words "specially qualified" in Section 3 of the Dentists' Act referred, not to a person's qualifications as an individual, but to some one or more of the special qualifications mentioned in the act. The Lord Chief Justice and his fellow judges thought there was sufficient evidence to support the view of the magistrate that these words on the appellant's windows and doors meant that he had such a skilful qualification that it enabled him to extract teeth with little or no pain, that he had a special qualification in extracting teeth and in fitting in other teeth. The effect of this judgment is likely to be revolutionary so far as unqualified dentistry is concerned. It follows that no unqualified person can publish any advertisement implying that he has special skill in dentistry. It is no longer necessary, in order to become liable under the Dentists' Act, that the unqualified person style himself dentist or dental surgeon, or use letters implying that he has a qualification; the mere claim to the the result of their efforts.

performance of certain ordinary acts incidental to the practice of dentistry is apparently sufficient to bring him within the purview of the act. The question naturally arises, If the law can thus be interpreted in the case of dentistry, why can it not be equally applicable in the infinitely more important art of medicine, of which dentistry forms a subordinate branch? The suppression of quack medicine is of vital importance, not only to the medical profession, but also to the public, and the whole energies of a united profession are required to bring the matter forward in a way likely to lead to practical reforms. In the mean time the verdict is a great triumph for the registered dentist and the British Dental Association, and they are to be congratulated on

The Nurses' Registration Bill is in the committee stage of the House of Lords and will soon be before the House of Commons. The final points for consideration were the clauses for the registration of existing nurses. It was decided that within three years any person of good character above twentyone years of age should be entitled to registration if she produced a certificate of satisfactory training at a hospital or institution approved by the Council. Another question affecting nurses has been freely discussed in the columns of the Times and other journals lately. This is the living-in system. Many nurses have complained of the despotism that goes on in the large hospitals and nursing institutions. The freedom of the nurses is greatly restricted and in these days of feminine emancipation it is no wonder that the monastic tradition of despotism is challenged by the nurses. As one journal aptly expresses it, "we shall probably soon see the emancipated hospital nurse disporting herself sans uniform on her off duty hours without pass, permission, or any of the other little tyrannies so dear to the hearts of matrons.'

Since Professor Leduc, of Nantes, read his paper at the annual meeting of the British Medical Association, in 1907, on ionic medication, a great deal of work has been done on this subject in England. Professor Leduc proved the efficacy of this method of local application of drugs by a striking experiment. He soaked a pad of lint in strychnine solution and strapped it to the ear of a rabbit. He then passed a current through the wet pad and the rabbit's ear, with the consequence that a rapidly fatal result occurred from strychnine poisoning. Ionic medication, or cataphoresis, has now been applied to the treatment of various conditions-skin affections, warts, ringworm, sciatica, and rheumatism. The treatment of rodent ulcer by zinc ions has been very successful. Among the cases already reported may be mentioned a case of rodent ulcer in the University College Hospital, which was treated by zinc ionization in the following manner: The ulcer, which was of about the size of a threepenny piece and situated on the chin of an elderly man, was thoroughly treated with a solution of sulphate of zinc, then covered with lint soaked in a similar solution, and a positive zinc electrode applied to the lint. A moderate current was then passed through the lint and ulcer for some ten minutes, as a result of which the malignant ulcer rapidly healed. Copper ionization has been tried with success in the treatment of ringworm. Salicylate of sodium and iodine have been used in this way for sciatica.

Captain F. Percival Mackie, of the Indian Medical Service, has been selected by the government of India to join Sir David Bruce's expedition to Uganda

to investigate sleeping sickness.

The death occurred on October 14th of Mr. William Knight Treves, F. R. C. S., brother of Sir Frederick Treves, He was resident surgeon to the Royal Sea Bathing Hospital, Margate, and afterward surgeon and consulting surgeon. He had written several works on surgical tuberculosis. He had a large practice as a consultant in Margate and the district.

Therapentical Hotes.

Angular Conjunctivitis is advantageously treated with zinc salts, according to a writer in the November number of *The Practitioner*, who recommends the application of the following lotion:

 B
 Boric acid,
 gr. viii;

 Zunc sulphate,
 gr. ii;

 Distilled water,
 ad 5i.

 M. Ft. Collyrium.

This lotion should be diluted with an equal part of water, which has been previously boiled, and used *warm* to the conjunctival sac.

Ointment for the Relief of Pruritus Ani.— Lockhart Mummery (*The Practitioner*, November, 1908) prescribes the following ointment, which is said to give relief in itching about the region of the anus, especially if applied at night:

| B, | Calomel, |
|----|--------------------------|
| | Bismuth subnitrate, |
| | Tincture of aconite, |
| | Glycerin, |
| | Outment of elder oflwers |
| | Ft. unguentum. |

Treatment of Cardiac Troubles of the Menopause.—J. Ferreira (Bulletin général de thérapeutique, October 23, 1908) advises the use of the following mixture in the treatment of the palpitation and precordial pain which so frequently accompanies the cessation of the menstrual flow:

| \mathbf{R} | Camphorated tincture of opium, | .3v; |
|--------------|---|------|
| | Fluid extract of cactus grandiflorus, | xv; |
| | Fluid extract of viburnum prunifolium, | |
| | Fluid extract of piscidia etrythrina, | |
| M. | et Sig.: Twenty drops in water night and morn | ing. |

Application for Orchitis.—The following ointment is recommended to be rubbed into the skin (Journal de médecine de Paris, October 24, 1908):

B Synthetic guaiacol, 3iiss;
Methyl salicylate, 3iv;
Lard, 3iii.

M. Ft. unguentum.

Tonic syrup of the following composition is prescribed by Renon (Journal de médecine de Paris, October 17, 1908):

| B | Extract of cinchonagr. xiv | v : |
|----|------------------------------|-----|
| | Sodium arsenate,gr. 3. | |
| | Glycerin, | 1 |
| M. | Syrup of bitter orange peel, | 11. |

NEW YORK MEDICAL JOURNAL

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NEW YORK, SATURDAY, NOVEMBER 21, 1908.

SANATORIUM ADMINISTRATION.

According to an article in the New York Tribune last week, some of the patients at the Tuberculosis Sanatorium at Otisville struck when they were asked to do some light work. The sanatorium, as our readers are probably aware, is conducted by the Department of Health for the care of hopeful cases. While treatment is absolutely free, the patients are admitted with the distinct understanding that they shall perform such service as the resident physician may assign. In the present instance it appears that a number of patients were directed to clean up the dining room after meals, and not only refused, but sent letters to New York complaining of the "hard labor" to which they were subjected.

One of the strongest arguments made against tuberculosis sanatoria in the past has been that, while the patients might be discharged healed in body, they were often so disorganized morally that they became a burden either to their family, their friends, or the community. Although these patients had been used to hard work all their lives, the prolonged period of idleness in the sanatorium developed in them such an aversion to labor as to seriously impair their value to society. All who have had experience with sanatorium administration know that this is often the case. Another argument of considerable weight was directed against the economic value of the institutions. It was pointed out that the cost of treating the patients was often entirely out of proportion to the value of the individual's life to the community. Fortunately it is coming to be realized that the suppression of tuberculosis is primarily a vast social and economic problem, and emphasis is now rightly laid on economy in the construction and administration of the sanatoria. The era of imposing buildings, we hope is past. The governing principle now is to obtain the lowest cost compatible with efficiency. Moreover, from a purely medical point of view, many observers insist on the physical benefit to the patients when they are compelled to work in proportion to their

The wisdom of the requirement of service at the Otisville Sanatorium is therefore apparent. Certainly the "strike" of a few malcontents will not cause the rule to be abandoned. A curious commentary on the complaint concerning "hard labor" was furnished by the frantic pleading of the dismissed strikers to be readmitted. What the outcome of these pleadings has been is not stated. To an outsider it would seem that, since these patients had had their opportunity, other applicants should next be favored.

GYNÆCOLOGY AMONG THE INSANE.

It is a subject worthy of comment when we find practitioners of different specialties in medicine working together with the view of arriving at results through their combined efforts. Further, it is all the more a subject for congratulation to find such cooperation active in our hospitals for the insane, for it is unfortunately a widespread though careless deduction that little can be done for the mentally ill. The therapeutics of mental disorders, on the contrary, is large with promise that comes from various quarters, and in calling attention to the report of Dr. LeRoy Broun of his work on 411 patients treated in the Manhattan State Hospital (American Journal of Obstetrics, October), it affords us an opportunity for congratulating both the hospital on having a superintendent who places his material at the disposal of the surgeon, and the surgeon who has given such a sensible and common sense résumé of his work. It is a model of efficient work, modestly brought forward and rational

Dr. Broun's thesis is that the mentally ill, suffering from disease or disorder of the pelvic viscera, are just as much entitled to have those defects remedied as people not so affected, and that if such local treatment may be serviceable in bringing about improvement in the mental condition, so much the better. And, as might be conservatively expected. Broun finds that good results do follow for many patients, and in those, speaking on an individual basis, in whom it might reasonably be expected. Better physical health means better mental health, and in many instances a diseased pelvic viscus is a sufficient cause for turning the balance of mental health in the wrong direction.

Dr. Broun offers no panaceas. He cures no incurable diseases. He offers no tempting hypotheses of occult character to explain the results. He rests on a record of common sense performance that treats the gynæcological conditions as gynæcological conditions and gets mental results as well. Individualization, not generalization, is the guiding principle; he does not cure dementia præcox or manic depressives. He helps certain individuals, independently of their mental troubles, because they need skilled gynæcological treatment, and fortunately the needs of the mentally ill in this respect are not disregarded.

THE OLIVE OIL TREATMENT OF BILIARY LITHIASIS.

The administration of olive oil in gallstone troubles has maintained its vogue with many practitioners in spite of its having been lately decried on the strength of the statement that the oil did not come in contact with the diseased parts. Professor Köster, of Leipsic, has made the therapeutical value of olive oil in diseases of the gallbladder the subject of special study and experiments. For his experiments he has used fifteen dogs and six cats. Antivivisectionists may here be reminded that their frequently repeated statement that the conclusions based upon animal experiments cannot be adapted to man, on account of the vast distinction of vital conditions in man and animals, is absolutely erroneous. The -conditions under discussion are not peculiar to mankind, but are fundamental processes of the histological structure and the innervation of the organs of digestion, as well as of the mode of nutrition, common to man and to the cat and the

The conclusions which Dr. Köster reaches in his essay on Fettresorption im Darme und Gallenabsonderung nach Fettdarreichung (Leipsic, 1908), are of therapeutical value in the treatment of gallbladder diseases. He has proved that even small quantities of oil injected through the rectum will reach the valve of Bauhin, and on account of this the contents of the large intestine become softened and are thus rendered more easily movable, a fact of importance to the gallstone sufferer, who so often is constipated. The influence of oil treatment is not a direct one on the formation of bile, but the administration of oil by the mouth or rectum produces a repeated discharge of that secretion, thus inducing the gallbladder to empty its contents frequently, and in this way preventing stagnation of bile in the gallbladder, to be followed by the formation of gallstones.

The introduction of the oil should preferably be done by the rectum, as the stomach and the small intestines will thus be saved from catarrhal attacks, which are said to be frequent sequelæ of taking large quantities of oil by the mouth. Whether we use sodium acid oleate or olive oil with a one per cent. solution of sodium hydroxide in equal parts, plus a 0.6 per cent. sodium chloride solution, is of no import. Thus the old empirical remedy for gallstone disease, olive oil, the use of which was repudiated on theoretical grounds, has been proved to be of practical value.

THE REPORT OF THE SURGEON GENERAL OF THE ARMY.

Surgeon General O'Reilly's report for the year ending June 30, 1908, has been received at this office. It makes 179 octavo pages. It is gratifying to learn from the report that the increased inducements now offered for the Medical Corps have attracted more men than was the case under former conditions, and that there is every prospect of obtaining a large class of candidates for this year's session of the Army Medical School, but it was not thought probable at the date of the report that the fifty-five vacancies in the corps (twenty-one remaining from the old organization and thirty-four new ones authorized by Congress) would all be filled this year. The surgeon general announces that he has met with notable success in his efforts to build up the new Medical Reserve Corps with desirable men by inducing prominent physicians, surgeons, hygienists; and laboratory workers throughout the country to head it. This he attributes to the patriotism of a large percentage of the medical men with whom he has communicated. This corps, it is expected, will gradually do away with the need of contract surgeons.

THE WATER SUPPLY OF PHILA-DELPHIA.

An interesting article descriptive of the past and present water supply of the city of Philadelphia is to be found in the *Journal of the Franklin Institute* for November. The paper is by Mr. John C. Trautwine, Jr., who was the chief of the Bureau of Water in Philadelphia from 1896 to 1899. There is a vein of quiet sarcasm running through the paper, which can be appreciated only by those who are familiar with Philadelphia politics. But the paper in general shows some of the obstacles that scientific men in charge of public works are obliged to overcome, and it shows particularly the nature of the water problems that confront a city of the size of Philadelphia, which is now estimated to have a population of 1.532-732.

THE FUNCTION OF THE THYMUS GLAND.

Inasmuch as the thymus normally undergoes atrophy when the period of active growth of the individual comes to an end, it has been assumed by some observers that its special function is that of promoting growth. Plausible as the assumption may be, it is not borne out by some experiments on the effects of removal of the gland in young animals that were recently undertaken by Alexander MacLennan, M. B. C. M., of Glasgow (Glasgow Medical Journal, August). Though he does not profess to have arrived at a complete knowledge of the function or functions of the thymus, he has certainly made some valuable observations and drawn several practical deductions.

The organ has been regarded as a lymphatic gland, and MacLennan concedes that it may be such a gland, but he remarks that it is so specialized as to be something more, and he declares it to be one of the series of glands which, by their internal secretions, regulate the various functions of the body. He thinks that it is really an accessory gland, because its function may be taken up by some other organ, the spleen, for example. Simultaneous removal of the thymus and of the spleen, he says, invariably causes death. By itself, the thymus does not seem to be essential to life, for there are cases on record in which there had never been a thymus; moreover, removal of the gland, dangerous as the operation itself is in young animals, does not necessarily give rise to death.

MacLennan thinks that the thymus and the thyreoid glands are closely associated developmentally, anatomically, physiologically, and pathologically. In two operations on the human subject he has found the thymus continuous with the left lobe of the thyreoid, and he finds that a diminished amount of thyreoid is sufficient after removal of the thymus. There is a type of exophthalmic goître, he says, in which removal of the thyreoid gland is followed by sudden death, and in those cases, on post mortem examination, the thymus gland is found enlarged. It is assuredly correct, he thinks, to impute sudden death to an enlarged thymus in certain cases of the status lymphaticus, so he says that, when thyreoidectomy is deemed necessary in cases of exophthalmic goitre, he would recommend that the thymus gland be first sought for and, if it is enlarged, that it be removed as a preliminary to thyreoidectomy.

In some morbid conditions, notably laryngismus stridulus, removal of the thymus has given good results, and the result is not mechanical, but due to the internal secretors of the

thymus. "In cretins," says the author, "thymusectomy, by reducing the necessity for thyreoid secretion, will be beneficial, and ought to be tried." In children who present a fulness over the suprasternal notch during expiration, straining, or coughing, he continues, special care ought to be taken during surgical anaesthesia, which "ought to be of the lightest possible."

THE MEMORY OF MAJOR CARROLL.

It was a graceful act on the part of the University of Maryland, at the recent celebration of "Academic Day," to erect a tablet to the memory of the late Major James Carroll, of the Army Medical Corps, and to provide for an address upon Major Carroll's life and work, which was delivered by Dr. William H. Welch. Major Carroll received his medical diploma from the university, and subsequently the degree of LL. D.

MEDICAL PRACTICE AND THE CHURCH.

In the Journal of last week we cited the letters of Dr. J. Leonard Corning, Dr. Joseph Collins, and Dr. M. Allen Starr, published in the New York Times, with reference to the extension of the "Emmanuel movement" to New York. Quite by accident, the clear and incisive letter of Dr. B. Sachs, deprecating the movement, was not referred to. Dr. Sachs's letter was a dignified communication, and we take pleasure in calling attention to it now.

THE NEW SURGEON GENERAL OF THE ARMY.

The nomination of Colonel George H. Torney, now commanding the Army General Hospital at the Presidio of San Francisco, as the successor of Brigadier General O'Reilly, who retires in January, as surgeon general of the United States Army, will place at the head of the Army Medical Corps an officer eminently qualified for the distinction which is conferred upon him. It is understood that the President decided not to appoint as head of the corps any officer who had only a short time to serve prior to the date of his retirement, and that this decision excluded several applicants who had otherwise strong claims to preferment. Colonel Torney, we believe, will not retire until June, 1914, so that he will have four years and a half of active service at the head of the Medical Corps. During the war with Spain Colonel Torney was in command of the hospital ship Relief, and subsequently commanded the Army and Navy General Hospital and the First Reserve Hospital at Manila.

Hews Items.

Rochester, N. Y., Academy of Medicine.—The regular meeting of this academy was held on Wednesday, November 18th, under the auspices of Section III. The Dead Man's Curve was the title of the paper of the evening, which was read by Dr. Thomas Jameson.

The Resident and Ex-Resident Alumni Association of Mt. Sinai Hospital, Philadelphia, elected the following officers at a recent meeting: Chairman, Dr. J. L. Werner; vice-chairman, Dr. B. H. Mann; treasurer and secretary, Dr. Michael Austin; historian, Dr. J. Levy.

The Bisset Hawkins Medal of the Royal College of Physicians, London, has been awarded to Sir Shirley Murphy, medical officer to the London County Council, in recognition of his services in the promotion of public

recognition of his services in the promotion of public health. The prize is awarded every three years.

Allegany County, Md., Medical Society.—At the annual meeting of this society, which was held in Cumberland, Md., recently, the following officers were elected: President, Dr. Tmothy Griffith, of Frostburg; vice-president, Dr. Henry W. Hodgson, of Cumberland; secretary and treasurer, Dr. Charlotte B. Gardner, of Cumberland.

The Mortality of Connecticut for the Month of October 1008. During the most had been considered to the content of the Month of October 1008.

The Mortality of Connecticut for the Month of October, 1908.—During the month of October, 1908, there were reported to the Connecticut State Board of Health a total of 1,206 deaths from 164 towns. The annual death rate in 1,000 of population was 13.8 for the large towns, 14.5 for the small towns, and 13.9 for the whole State.

total of 1,200 deaths from 104 towns. The annual death rate in 1,000 of population was 13.8 for the large towns, 14.5 for the small towns, and 13.9 for the whole State.

The Third Harvey Lecture.—The third lecture in the Harvey Society course will be delivered on Saturday evening. November 21st, at 8:30 o'clock, at the New York Academy of Medicine, by Professor Graham Lusk, of the University and Bellevue Hospital Medical College. The subject of the lecture will be Metabolism in Diabetes.

ing. November 21st, at 6:30 octock, at the New Tolk Academy of Medicine, by Professor Graham Lusk, of the University and Bellevue Hospital Medical College. The subject of the lecture will be Metabolism in Diabetes.

Contagious Diseases in Chicago.—During the week ending November 7, 1908, there were reported to the Department of Health of the City of Chicago the following cases of communicable diseases: Diphtheria, 187 cases; scarlet fever, 181 cases; measles, 56 cases; chickenpox, 24-cases: pneumonia, 17 cases; typhoid fever, 45 cases; whooping cough, 14 cases; tuberculosis, 55 cases; diseases of minor importance, 28 cases; total, 607 cases.

minor importance, 28 cases; total, 607 cases.

Officers of the Ohio Valley Medical Association.—At the annual meeting of this association, which was held recently in French Lick, Ind., the following officers were elected: President, Dr. Curran Pope, of Louisville; first vice-president, Dr. A. E. Sterne, of Indianapolis: second vice-president, Dr. Earl Harlan, of Cincinnati; secretary and treasurer, Dr. Benjamin Floyd, of Evansville, Ind.

The Society of the New York Hospital.—A genito-

The Society of the New York Hospital.—A genitourinary class has been formed at the House of Relief of the New York Hospital (Hudson Street Hospital), 67 Hudson street, New York, which meets on Tuesday and Friday evenings, at 8 o'clock. All who are interested in the bacteriology of nonsyphilitic veneral sores are invited to attend these classes. For further particulars apply to

to attend these classes. For further particulars apply to Dr. Victor C. Pedersen, 45 West Ninth Street, New York. The Succession to the Surgeon Generalship of the Army.—Colonel G. H. Torney has been appointed by the president to be Surgeon General of the United States Army on the retirement of Surgeon General O'Reilly, which takes place on January 14, 1909. Colonel Torney commanded the hospital ship Relief during the Spanish War, and has been in command of the First Reserve Hospital, Manila, and the Army and Navy General Hospital, Washington, D. C. He is now in command of the hospital at the Presidio of San Francisco.

Vital Statistics of New York.—During the week end ing November 7, 1908, there were reported to the Department of Health of the City of New York 1,140 deaths from all causes, as compared with 1,248 during the corresponding period in 1907. Of the total number of deaths 568 were in Manhattan, 97 in The Bronx, 397 in Brooklyn, 60 in Queens, and 18 in Richmond. The annual death rate in 1,000 of population was 13,45 in the whole city, and in the five boroughs as follows: Manhattan, 12,92; The Bronx, 15,45; Brooklyn, 13,87; Queens, 13,46; Richmond, 12,25. The total number of deaths of children under five years of age was 303, and of these 74 were due to diarrhocal discussed. There were 121 still births. Six hundred and ninety-five marriages and 2,244 births were recorded during the work.

An Academy of Medicine in Philadelphia.—Announcement is made of the filing of the proposed charter of the Philadelphia Academy of Medicine, an intended corporation, the character and object of which is the education and mutual improvement of its members in all matters pertaining to the art of medicine, and by means of lectures, demonstrations, and the presentation of papers. to encourage research and study in all departments of medical science.

search and study in all departments of medical science.

The Health of Pittsburgh.—During the week ending November 7, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 12 cases, 0 deaths; typhoid, fever, 16 cases, 3 deaths; scarlet fever, 41 cases, 1 death; diphtheria, 17 cases, 1 death; measles, 30 cases, 0 deaths; whooping cough. 1 case, 0 deaths; pulmonary tuberculosis, 18 cases, 0 deaths. The total deaths for the week numbered 128, in an estimated population of 505,000, corresponding to an annual death rate of 11.78 in 1,000 of population.

The East Side Physicians' Association of the City of New York: A cated meating of this association

The East Side Physicians' Association of the City of New York.—A stated meeting of this association was held on Friday evening, November 20th. Dr. James T. Gwathmey demonstrated an improved gas-ether inhaler. Dr. William S. Gottheil presented models illustrating some phases of syphilis. The paper of the evening was read by Dr. Henry L. Elsner, of Syracuse, N. Y., on Serious Heart Lesions without Persisting Physical Signs. The discussion was opened by Dr. A. Jacobi, and among those who participated in the discussion were Dr. Thomas E. Satterthwaite, Dr. Charles E. Quimby, Dr. Heinrich Stern, and Dr. Robert Abrahams.

ert Abrahams.

A Public Meeting in Philadelphia in the Interest of Pure Milk.—The Public Health Committee of the Civic Club of Philadelphia held a public meeting on Monday evening, November 16th, for the purpose of discussing the question of a pure milk supply. Dr. Joseph S. Neff, Director of Public Health and Charities, presided, and addresses were delivered as follows: A City's Fight for Pure Milk, by George H. Goler, Health Commissioner of Rochester, N. Y.; The Production of Pure Milk, by Dr. Leonard Pearson, of Philadelphia; Milk as a Food for Children, by Dr. Samuel McClintock Hamill, of Philadelphia; Milk as an Economical Food, by Dr. Lawrence F. Flick, of Philadelphia.

Charitable Bequests.—By the will of Sophia Eichholz, the United Hebrew Charities, of Philadelphia, receives \$200, and the Jewish Hospital Association, of Philadelphia, receives \$100.

By the will of James McGraw, St. John's Orphan Asylum and St. Joseph's Home, Philadelphia, become contingent beneficiaries to the extent of \$1,000 each.

By the will of Charles H. Kimball the Society for the

By the will of Charles H. Kimball the Society for the Prevention of Cruelty to Animals, Philadelphia, receives \$200.

By the will of Mrs. Emma Gertrude Keep Halsey, Stony Wold Sanatorium receives \$5,000, and the Flower Hospital, New York, receives \$10,000.

Battle Organization in the Medical Department of the Navy.—The reports submitted by the surgeons of the various vessels in the Service, on the subject of organization for battle of the medical department of the United States Navy, show that there is a lack of uniformity in the organization and in the instructions given to the men regarding their stations and duties, which indicates a need for official action. The wide variation in the types of the vessels in the Service makes the formulation of definite regulations somewhat complicated, but it seems probable that steps will be taken by the Surgeon General to bring about an approximate uniformity of the plan of organization in the establishment of relief and dressing stations on vessels of similar types.

The Mortality of Chicago.—During the week ending

The Mortality of Chicago.—During the week ending November 7, 1008, there were reported to the Department of Health of the City of Chicago 530 deaths from all causes, as compared with 541 for the preceding week and 520 for the corresponding period in 1007. The annual death rate in 1,000 of population was 12,08. Of the total number of deaths, 136 were of children under five years of age. The principal causes of death were: Apoplexy. II deaths; Bright's disease, 55 deaths; bronchitis. II deaths; consumption, 76 deaths; cancer, 25 deaths; diphtheria, 21 deaths; heart disease, 40 deaths; influenza, I death; intestinal diseases, acute, 51 deaths; measles, 2 deaths; nervous diseases, 7 deaths; pneumonia, 55 deaths; scarcler fever, 8 deaths; suicide, 6 deaths; typhoid fever, 12 deaths; violence (other than suicide), 31 deaths; whooping cough, I death; all other causes, 116 deaths.

The Southern Medical Association .- At the annual meeting of this association, which was held recently in Atlanta, Ga., Dr. G. C. Savage, of Nashville, Tenn., was elected president, and the following were elected vice-presidents, one president, and the following were elected vice-presidents, one from each State in the association: Dr. J. M. Jackson, Jr., of Florida; Dr. Charles M. Murry, of Mississippi; Dr. George Dock, of Louisiana; Dr. T. A. Casey, of Alabama; Dr. J. C. Olmstead, of Georgia; and Dr. E. C. Elliott, of Tennessee. Dr. Oscar Dowling, of Shreveport, La., was unanimously reelected secretary and treasurer, and in recognition of his services for the past year was voted \$100. His report showed that the total membership of the society numbered 520. New Orleans was unanimously chosen as the place of the next annual convention, which is to be held the second Tuesday in November, 1909.

Scientific Society Meetings in Philadelphia for the Week Ending November 28, 1908:

Monday, November 23d.—Mineralological and Geological Section, Academy of Natural Sciences; Society of Normal and Pathological Physiology

WEDNESDAY, November 25th .- Philadelphia County Medi-

WEDNESDAY, November 25th.—Finaucipina County Recal Society,
 THURSDAY, November 26th.—Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute.
 FRIDAY, November 27th.—Philadelphia Neurological Society; Northern Medical Association; South Branch, Natural Medical Society.

Philadelphia County Medical Society.

SATURDAY, November 28th.—Samaritan Hospital Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statistics of new cases and deaths reported for the two weeks ending November 14, 1908:

| | Nov. 7 | | Nov 14 | |
|--------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Tuberculosis pulmonalis | 443 | 147 | 479 | 173 |
| Diphtheria | 201 | 16 | 337 | 23 |
| Measles | 137 | 6 | 180 | 3 |
| Scarlet fever | I 43 | 0 | 215 | 7 |
| Smallpox | | | | |
| Varicella | OI | | 96 | |
| Typhoid feer | 5.3 | 1.2 | 78 | 1.5 |
| Whooring cough | 9 | .3 | 18 | 2 |
| Cerebrospinal meningitis | 5 | 2 | 6 | 2 |
| | | | | |
| Totals | 1,172 | 192 | 1.409 | 2.2 * |

The Medical Society of the County of New York .-The one hundred and third annual meeting of this society will be held on Monday evening, November 23d, at 8:15 o'clock, in Hosack Hall, New York Academy of Medicine. The programme for the scientific session will consist of a "symposium" on tuberculosis, which has been arranged as a part of the introductory exercises attending the opening in New York of the exhibit of the International Congress on Tuberculosis, held recently in Washington, D. C. The following papers will be read: The Lessons of the Recent International Tuberculosis Congress, by Dr. Woods Hutchinson; The Incidence of Tuberculous Bacilli in New York son; The Incidence of Tuberculous Bacilli in New York City Milk, with a Study of its Effects on a Series of Children, by Dr. Alfred F. Hess; discussed by Dr. Henry Koplik, and Dr. Rowland C. Freeman; The Relative Importance of Human and Bovine Types of Tubercle Bacilli in Human Infection, by Dr. William H. Park; The Methods Employed to Differentiate the Different Varieties of Tubercle Bacilli, by Dr. W. H. Woglom. A general discussion will follow will follow.

The Health of Philadelphia.- During the week ending October 31, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 36 cases, 4 deaths; scarlet fever, 54 cases, 6 deaths; chickenpox, 33 cases, 0 deaths; diphtheria, II2 cases, II deaths; cerebrospinal meningitis, I case, death; measles, 33 cases, 3 deaths; whooping cough, 6 cases, 1 death; tuberculosis of the lungs, 138 cases, 41 deaths: pneumonia, 60 cases, 40 deaths; erysipelas, 4 cases o deaths; imumps, 6 cases, 40 deaths; erysipelas, 4 cases, 10 deaths; imumps, 6 cases, 10 deaths; case, 11 death; diarrhœa and enteritis, under two years of age, 16 cases, 26 deaths. The following deaths were reported from other transmissible diseases; Tuberculosis, other than tuberculosis of the lungs, 1 death. The total deaths numbered 405 in an estimated population of 1,532,738, corretion. The total infant mortality was 89; under one year of age, 75; between one and two years of age, 14. There were 30 still births; 15 males, and 15 females. The total precipitation was 1.61 inches.

Society Meetings for the Coming Week:

Monday, November 23d .- Medical Society of the County

TUESDAY, November 24th.—New York Dermatological Society; New York Otological Society; New York Medical Union; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology)

Wednesday, November 25th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, November 26th .- New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brook-lyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Society; Brooklyn So-

Friday, November 27th.—New York Clinical Society; New York Society of German Physicians; Academy of Pathological Science, New York.

SATURDAY, November 28th.—West End Medical Society, New York; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society, New York.

The Howard Hospital and Infirmary for Incurables, of Philadelphia.—The forty-fourth annual report of the Board of Managers of the Howard Hospital and Infirmary for Incurables showed that 779 patients were treated during the year; of these 603 were discharged cured; 71 were discharged improved; 25 were discharged unimproved; 22 were discharged not operated upon; and 45 died. The death rate was 5.77 per cent. In the out patient department 7.973 patients were treated; of these 5,212 were white, and 2,761 were colored; 2,438 were treated in the department of general surgery and orthopædics, 1,686 in the department of general medicine, 767 in the department of the diseases of women; 918 in the department of the diseases of women; 918 in the department of the diseases of women; 918 in the department of the diseases of women; 918 in the department of the diseases of children, 286 in the department of diseases of the mind and the nervous system, 679 in the department of the diseases of the eye, 656 in the department of the diseases of the nose, and 543 in the department of the diseases of the skin. There were 2,278 accident cases. During the year a legacy of \$370 was received from the estate of Elon Dunbar, and one of \$375 from the residuary estate of George S. perper. The report of the secretary of the board of managers shows that the cost of maintenance of each patient was \$2.00 a day; the cost of each out patient was 345 cents a day. The treasurer's report showed a deficit of \$2.187.21.

Personal.—Dr. Thomas E. Satterthweite, of New York, had conferred upon him the degree of doctor of laws by the University of Maryland, on the occasion of the celebration of the one hundred and nineteenth anniversary of the opening of St. John's College, Annapolis, which embodies the departments of science and arts of the uni-

Dr. Benjamin Franklin Stahl has been appointed medical director of St. Agnes's Hospital.

Dr. Henry J. Summers has resigned as pathologist to the Hospital for the Insane at Norristown, Pa.

Dr. Amy J. Rule has been elected an assistant physician to the Hospital for the Insane at Norristown, Pa

Dr. James S. Mosher, of Williamsport, Pa., and Dr. Smith De Muth, of Pittsburgh, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medi-

Dr. Cyrus Field, of New York, has accepted the chair of pathology and bacteriology in the reorganized medical school of the University of Louisville.

Dr. De Forest Willard, professor of orthopædic surgery at the University of Pennsylvania, has been appointed consulting orthopædic surgeon at the Municipal Hospital, Phil-

Dr. William Warren Potter, of Buffalo, has been elected president of the New York State Board of Medical Examiners, and Dr. William S. Searle, of Brooklyn, vice-presi-

Dr. Guy G. Fernald, of Boston, has been appointed resident physician of the Massachusetts Reformatory at Con

Sir Jagadis Chandra Bose, M. D., Sc., of Calcutta, India, delivered a lecture recently on the Plant as a Living Machine at the Biological Club of the Massachusetts Institute of Technology

The College of Physicians of Philadelphia.-The reg ular monthly meeting of the Section in Otology and Laryng ology was held on Wednesday evening, November 18th. Di Ralph Butler reported a case of mucocele of the frontal sinus and exhibited the patient. Dr. Emma E. Musson sinus and exhibited the patient. Dr. Emima E. Musson read, by invitation, a paper on Labyrinthine Deafness. Dr. Arthur A. Bliss read a paper entitled Some Notes on Furunculosis of the External Auditory Canal. Dr. G. Hudson-Makuen reported'a case of sudden deafness in a child of nine years, and made special reference to its effect upon the speech.

The Section in Ophthalmology held a stated meeting on Thursday evening, November 19th. Dr. B. Alexander Randall read a paper entitled Again a Word as to the Weiss Reflex "Bogenstreife" in its Relation to Progressive Myopia. Dr. Burton Chance reported a case showing the effective states of the second of the se opia. Dr. Burton Chance reported a case showing the effects of obstetric injury of the cornea observed in an adult. Dr. Howard F. Hansell reported a case of membranous conjunctivitis with systemic complications, and exhibited a patient with a growth in the vitreous, probably arising in the optic nerve. Dr. J. Norman Risley gave the histories of two cases of keratitis with abnormal nasal conditions as contributing actiological factors. Dr. George S. Crampton reported a case of probable sarcoma of the ciliary body, exhibiting the patient, and gave the history of a case of marked ectasia of the sclerotic simulating tumor, showing specimens.

Meetings of Sections of the New York Academy of Medicine.—A meeting of the Section in Ophthalmology was held on Monday evening, November 16th. The paper of the evening was read by Dr. Percy Fridenberg on Vascular Disease of the Retina as a Factor in Embolism of the Central Artery. Dr. Alexander Duane gave a demonstration of charts indicating fallacies in our present ideas regarding the accommodation.

regarding the accommodation.

A meeting of the Section in Medicine was held on Tuesday evening, November 17th. Dr. W. N. Berkeley presented a patient with syringomyelia. Dr. Warren Coleman reported a case of brain tumor. Dr. W. E. Boyce read a paper describing a new treatment for chronic arthritis. Dr. David Bovaird read a paper on the Nauheim Treat-

The Section in Genitourinary Surgery held a meeting on Wednesday evening, November 18th. The programme consisted of the reports of cases and the presentation of

on Wednesday evening, November 18th. The programme consisted of the reports of cases and the presentation of specimens, instruments, and patients.

The Section in Orthopadic Surgery held a general clinical meeting on Friday evening, November 20. Cases were presented as follows: a, Genu Recurratum following Transplantation of Hamstrings, by Dr. Henry Ling Taylor; b, Hæmatoma of Thigh, by Dr. Virgil P, Gibney; c, Sarcoma of Radius successfully treated by the Mixed Toxines of Erysipelas and Bacillus Prodigiosus, by Dr. William B. Coley; d, Two Cases illustrating Result in Ambulatory Treatment of Rigid Weak Foot, by Dr. Arthur H. Cilley; c, Case of Fracture of Neck of Fenur, by Dr. Arthur H. Cilley; f, Case Simulating Psoas Abscess, by Dr. Charles H. Jaeger; g, Case of Coxa Vara, by Dr. Royal Whitman; h, Case of Stitt's Disease, by Dr. Walter W. Strang; t, Two Cases of Progressive Muscular Atrophy of an Irregular Type, by Dr. T. Halsted Myers; j, Case of Volkmann's Lodemic Paralysis, by Dr. Reginald H. Sayre; k, Case of Unilateral Congenital Dislocation of Hip, Reduction, Subsequent Hypertrophy of Bones of Leg, by Dr. Reginald H. Sayre, A general discussion followed.

The Section in Larvygology and Rhinology will meet on

The Section in Laryngology and Rhinology will meet on Wednesday evening. November 25th, at 8:15 o'clock. Dr. Harmon Smith will present a patient with laryngeal carcinoma, with laryngeatcomy after twelve years' observation. Dr. Hanau W. Loeb, of St. Louis, Mo., will read a paper entitled A Study of the Anatomical Relations of the Optic Nerve to the Accessory Sinuses of the Nose, and will present specimens showing the relations. sent specimens showing the relations.

sent specimens showing the relations.

A meeting of the Section in Obstetrics and Gynæcology will be held no Friday evening, November 27th. Dr. Samuel M. Brickner will present a patient with an unusual case of vesico-vaginal fistula, and Dr. S. W. Bandler will present patients showing resection for carcinoma of the cæcum, ovarian sarcoma in a young girl, and carcinoma of the vagina. Dr. Robert T. Frank will read a paper entitled An Analysis of Eighty Consecutive Cases of Ectopic Gestation, which will be followed by a general discussion of the immediate genus the deferred operation in extension in extension. of the immediate versus the deferred operation in ectopic gestation.

Bith of Current Titerature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 12, 1908.

Cancer of the Stomach. By Christopher Graham. An Experimental Study of the Conjunctival Tuberculin Test in Guinea Pigs Infected with Human, Bovine, or Avian Tubercle Bacilli. Specificity. Reaction. Unity for the Group. Lack of Sensitization.

By Frederick T. Lord.

Bursitis Subacromialis, or Periarthritis of the Shoulder Joint. (Subdeltoid Bursitis.) (To be continued). By ERNEST AMORY CODMAN.

2. Experimental Study of the Conjunctival Tuberculin Test in Guinea Pigs.—Lord finds that nontuberculous guinea pigs fail to respond to the conjunctival test with old tuberculin of the ordinary concentration or with stronger preparations in which the evaporation of the culture is carried to one twentieth or even one thirtieth of its volume. Attempts at sensitization with old tuberculin by various means have failed to elicit a response in sound animals. After subcutaneous and intraperitoneal infection of guinea pigs with human, bovine, or avian tubercle bacilli, positive conjunctival tests with undiluted old tuberculin may usually be obtained after a variable interval. The period of incubation commonly terminates in from two to four weeks. The reaction may begin as early as two hours after the insufflation of tuberculin into the conjunctival sac, is usually at its height in seven to eight hours, and may have subsided in twenty to twenty-four hours. The reaction is not invariably present, and is, therefore, somewhat unreliable for the detection of tuberculosis in guinea pigs. In general, however, it occurs in a large proportion of the tests performed during the positive period, and when it occurs appears to be specific for tuberculosis of the human, bovine, or avian type. The reaction, although specific for the group, appears not to be distinguished between the different types of infection. Animals infected with human, bovine, or avian tubercle bacilli respond as well to the corresponding or different tuberculins. Unheated cultures of tubercle bacilli, concentrated in vacuo without heat and filtered through a porcelain filter, cause reactions in infected animals, but, like old tuberculin, are not distinctive in their action. The emulsion of tubercle bacilli and unconcentrated filtrates fail to elicit a response. This reaction unity in guinea pigs infected with human, bovine, or avian tubercle bacilli is confirmatory of the close relationship between these different strains of tubercle bacilli. The absence of reactions in nontuberculous guinea pigs and the positive response in tuberculous animals is confirmatory of the specificity for tuberculosis of reactions in man. The failure to produce reactions in nontuberculous animals after attempted sensitizations with old tuberculin suggests that reactions with this substance after repetition in man are not likely to occur in the nontuberculous.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Nevember 14, 1008.

- 1. The Viscosity of the Blood; Its Value in Clinical Medicine, By G. W. McCaskey.
 2. Physiological Aspects of Bloodvessel Surgery,
 By C. C. Guthrie.
 3. Results of the Transplantation of Blood Vessels, Organization of Blood Vessels, Organization of Blood Vessels, Organization of Blood Vessels, Organization of Management Links
- gans, and Limbs, By ALEXIS CARREL.

4. Statistics of Endoaneurismorrhaphy, or the Radical Cure of Aneurysm by Intrasaccular Suture,
By Rudolph Matas.

5. Successful Ligation of the Inominate Artery,
By WILLIAM BRITT BURNS.

6. Infantile Paralysis,

By Robert W. Lovett and W. P. Lucas.

7. Cheilitis Exfoliativa, By M. L. RAVITCH.

8. The Pigmentation of the Mucous Membrane of the Mouth, By Henry G. Anthony.

9. Criteria and Standards in Infant Feeding,
By Thomas Grant Allen.

By Thomas Grant Allen.

10. The Cardiovascular System in Prognosis. With Special Reference to Life Insurance Examinations,
By Henry Wireman Cook.

Viscosity of the Blood.-McCaskey states that the viscosity of the blood is an important physical property dependent on both the corpuscles and the plasma which furnishes a considerable part of the peripheral resistance to the circulation of the blood. It undergoes fluctuations as a result of physiological changes connected with food, drink, exercise, etc. Under pathological conditions, the changes are much greater and the viscosity may be so much increased, as for instance, when the blood is charged with carbon dioxide, that the heart will be embarrassed in overcoming it. The viscosity is actually low in the large majority of cases of chronic Bright's disease owing to existing hydræmia, but there is probably an earlier stage with high viscosity. seems probable that an increased peripheral resistance in the circulation of the blood, due, in part, to increased viscosity, is at least one of the factors in the production of the cardiac hypertrophy of Bright's disease. Venesection greatly lowers the viscosity by withdrawing its solids and attracting the fluids from the surrounding tissues. Alcohol introduced into the circulation greatly increases viscosity, and in this way interferes with the peripheral circulation and burdens the heart. The approximate determination of the viscosity of the blood as a routine clinical procedure is desirable in nutritional and toxic disorders, and should be made by a method rapid and simple enough to be practicable for routine use. Individual diseases do not change viscosity in any characteristic way except as they incidentally modify the blood. The determination of viscosity should be made promptly before the corpuscles have time The use of hirudin, if it leads to considto settle. erable delay, is therefore objectionable unless the homogeneous mixture of plasma and corpuscles is again reproduced. The viscosity of the blood is not altogether dependent on its specific gravity, for in fevers the former may be high and the latter very low.

2. Bloodvessel Surgery.—Guthrie says that it has been known for a very long time that the activities of the tissues of the body may be profoundly influenced by alterations of the circulation. This consists of decreasing or increasing the blood to a part. Decreasing the circulation brings about the condition termed anæmia; increasing the circulation produces "hyperæmia." Tying an artery will produce anæmia; increasing the arterial flow to a part as by causing a local dilatation produces active hyperæmia, while by hindering the venous return passive hyperæmia will be produced. The magnitude of the changes observed in normal tissues after production of a localized hyperæmia is in direct production of a localized hyperæmia is in direct pro-

portion to the degree of hyperæmia. By reversing the circulation in the peripheral end of one of the external jugular veins by anastomosing it with the central end of one of the common carotid arteries, no doubt a degree of passive hyperæmia of the head If, however, the circulation is simis produced. ilarly altered in a vein having a more "terminal" character, as in the inferior thyreoid vein, the results are striking. This operation produces what may be termed a double hyperæmia, as by eliminating the vein as a channel for return of venous blood, the ratio of venous to arterial cross sectional area of the gland is decreased; therefore, passive But since arterial blood is hyperæmia results. forced into the gland through the vein, the proportion of arterial area to venous areas is further increased, and active hyperæmia is also produced. Such an operation produces a maximum hyperæmia, and the results on both normal and pathological glands are very marked. In both cases a rapid transudation is seen to take place from the bloodvessels, the glands becoming markedly ædematous even in a few minutes. The swelling increases for about forty-eight hours, by which time, in pathological glands, it may reach enormous proportions. At the end of this period it begins to subside, so that at the end of about twelve days the gland is about the same size as at the time of operation. In the case of enlarged pathological glands, from this time onward there is a continuation of decrease in size so that at the end of three weeks or a month the gland may not greatly exceed a normal gland in size. The chief clinical distinction in the reaction thus set up in a normal and pathological gland is of degree. Also, it seems that the normal gland does not decrease to below, its size at the time of operation. Ligation of the thyreoid veins in pathological glands is followed by a similar train of clinical phenomena, the difference again being one of degree.

Transplantation of Bloodvessels. — Carrel remarks that it is proved that the remote results of the transplantation of fresh vessels can be perfect, and that arteries, kept for several days or weeks outside of the body, can be transplanted successfully, and that after more than one year the results remain excellent. It has been shown, also, for the first time, that transplanted kidneys functionate, that an animal, having undergone a double nephrectomy and the transplantation of both kidneys from another animal, can live normally for a few weeks, and that an animal which has undergone a double nephrectomy and the graft of one of his own kidneys can recover completely and live in perfect health for eight months, at least. Finally, it has been demonstrated that a leg extirpated from a dog and substituted for the corresponding leg of another dog, heals normally.

6. Infantile Paralysis.—Lovett and Lucas report the analysis of 635 consecutive, unselected cases of infantile paralysis, seen at the out patient department of the Children's Hospital at Boston during the year 1907. The authors reach the following practical conclusions: It is important to remove deformity by a preliminary operation when it is present to any considerable degree and not to correct the deformity and perform the tendon transfer at one

operation. The operation should not be performed on very young children. Periosteal implantation yields better results than when tendons are united to tendons. Simple operations are more satisfactory than complicated ones. It is not advisable to turn sharp corners with transferred muscles, but to secure as straight a line as possible of muscular pull from origin to insertion. The substitution of small muscles for large ones is likely to be unsatisfactory, e. g., one of the peroneal muscles is rarely a satisfactory substitute for the gastrocnemius. Tendons must be inserted on the stretch, and the foot maintained for some weeks in a position of overcorrection. The use of silk tendons has proved practicable and satisfactory. The after treatment is as important as the operation itself, if a successful result is to be obtained. The method followed at the Children's Hospital has been as follows: The plaster put on at the operation is worn for six weeks. It is then split, removed for massage, and reapplied. About two or three months after the operation a brace is applied which shall support the foot in a position to relieve strain on the transferred tendon, and muscle training is begun. Walking is allowed from three to six months after operation in this brace, when the tendon seems to possess enough power to warrant it, and the brace is discontinued when circumstances allow it. Infantile paralysis is a less formidable affection than is generally believed, partial paralysis is common, disused and stretched muscles appear to be paralyzed, but possess a possibility of function. In addition to mechanical treatment, an attempt should be made by massage, electricity, and especially by muscle training to wake to activity the remaining cells in partly destroyed groups and thus to secure muscles which perform function. After tendon transfer, the development by muscle training of the transferred tendons is essential to good results, and without this the percentage of failure will be large.

9. Infant Feeding.—Allen describes his method of calculation, and says of his plan that it is more comprehensive than all other systems. There is absolute control of not only energy and proteid, but also of the ratio between these two. Other plans control the energy alone or the proteid and energy, as when his proteid quotient is used, but no other plan suggested controls the proteid, energy, and ratio, enabling one to know at any time just what and how much he is giving. It is easily changed to meet changing conditions of weight, age, etc. It is simple, and the calculations are extremely easy. Taking the three numbers representing the weight, the proteid quotient, and the ratio, it is seen that one fourth of the product of the first and second gives the amount of milk for the day; the product of the second and third gives the energy in sugar units, and the product of the first, second, and third-lessened by the ratio of the food used-gives the sugar in hundredths of an ounce which must be added. The numbers are all small and easily handled. The operations are reduced to one, that of multiplication, and the fractions, whether vulgar or decimals, are simple and in most cases can be handled without even the use of a pencil.

MEDICAL RECORD.

November 14, 1908.

I. Observations with the Rogers-Torrey Antigonococcic Serum, By George Knowles Swinburne.
2. Röntgen Ray Flashes or Intermittent X Rays,

Röntgen Ray Flashes or Intermittent X Rays,
By Finley R. Cook.
Some Notes on the Medical Treatment of Inflammations of the Biliary Tract, By WILLIAM N. BERKELEY.
Prophylaxis vs. Treatment, or Prevention rather than
Cure,
By SAMUEL WESLEY SMITH.
Synovitis of the Knee Joint as a Late Manifestation of
Acquired Syphilis. Report of a Case,
By ISAAC LEVIN.

7. The Action and Dosage of Phenolphthalein,
By Warren Philo Elmer.

1. Rogers-Torrey Antigonococcic Serum. — Swinburne has treated since October, 1907, sixtynine patients with the Torrey antigonococcic serum, forty-one were dispensary patients and twenty-eight were patients in private practice. The cases were as follows: Chronic relapsing epididymitis, fourteen; acute epididymitis, early stages, twenty-seven; muscular rheumatism, without joint involvement, fourteen; muscular rheumatism, with one or more joints involved, ten; purely joint cases, five; chronic gonorrhœa of kidney, two: involvement of tube and ovary, one; persistent presence of gonococcus in urethral discharge, two; acute prostatitis, one; acute vesiculitis, one; threatening epididymitis, one; rheumatism and epididymitis, one. In almost all the patients with relapsing epididymitis, ten of which were dispensary cases, there was marked improvement. The striking relief noted was in the diminution or quick cessation of the pain. These cases are more or less unsatisfactory, because the patients have been difficult to follow. Some go back to work too soon and only return because of further relapse, and as they have a variety of conditions in the anterior or posterior urethra, all of which require more or less prolonged treatment, in most of them the serum alone is not sufficient to prevent a relapse-still in all of them there was marked relief after the second injection. Dr. Swinburne relies upon the serum as a valuable aid in the treatment in epididymitis.

2. Röntgen Ray Flashes or Intermittent X Rays.-Cook remarks that a simple and prolonged stimulation can be obtained only by an intermittent bombardment of tissue cells. An intermittent bombardment not only eliminates the dangers arising from x ray treatment, but enables us to increase the amperage, and hence to obtain a far greater degree of stimulation. With flashes we do not use any protective measures, and inasmuch as the general action is just as important as the local, if not more so, the whole body is included in the x ray field, the rays of maximum intensity being focused on the local area under treatment. For the same reason we use a tube approaching hardness. The effort to secure pure stimulation by the customary continuous method was against the established principles of stimulation and must be attended with danger, as experience has amply shown. In all conditions where x rays have been useful it has been due to their general as well as their local action. The general action is shown by the inevitable improvement in general metabolism

with a local regenerative action in an area of localized degeneration. The most striking proof of the systemic action is obtained through sphygmomanometric observations. Sedation is obtained by a mild and continuous bombardment. This suggests low amperage with tube at a distance measured by feet rather than by inches. Tension is lowered and tendency to sleep induced. This is an x ray bath. The whole body is included in the x ray field. Escharization is obtained by a powerful and continuous bombardment. Maximum amperage, minimum distance, maximum time of exposure. All normal tissues should be thoroughly protected with heavy sheets of lead with an opening exactly corresponding to the parts to be destroyed. Irritation is obtained by a moderate and continuous bombardment, prolonging the time of exposure or by repeated exposures. It comes through overstimulation, which is the primary action. Like all irritants, it tends to induce a fibrosis, obliterating endarteritis, and culminates in atrophy. It should never be used on normal tissues, and when used on local morbid cells the surrounding normal cells should be carefully protected by sheets of lead foil. The author comes to the conclusion that the evolution of Röntgen ray flashes not only eliminates the danger of x ray treatment, but that this method will extend the field of its influence, that its use in the eve will prove to be its most valuable therapeutic application, and there is a strong probability that if employed skilfully in the early and acute stages of many heretofore incurable diseases of the eye, it may prove to be a valuable preventive of blindness.

3. Medical Treatment of Inflammations of the Biliary Tract.-Berkeley reminds us that drugs so far as we know have not the least demonstrable solvent effect upon gallstones, any more than upon stones in the kidney and urinary bladder. We may, however, select among a large number of medicines which have more or less effect in increasing the fluidity of the bile, and apparently stimulating its secretion. Any of the saline purgatives will act in this way to some extent. Sodium phosphate in dilute aqueous solution before breakfast has long been approved. The alkaline mineral waters have this additional advantage, that they are in extremely dilute solution, and the patient in taking his medicine is compelled to take a large amount of water at the same time. Sodium glycocholate and taurocholate have been experimentally and clinically proved to be direct and very valuable cholagogues. Their nauseous taste, long a serious objection, has been latterly removed by dexterous admixtures in several of the new proprietary preparations, and they may be given as required. It is stated of all these drugs that they only put into a healthy condition an inflamed biliary mucosa, enabling the gallbladder to take care of the stones it already contains, facilitating the discharge of those already actually lodged in the ducts, and preventing the formation of new stones. All these remedies, furthermore, reduce intestinal putrefaction, move the bowels more freely, promote digestion, and by improving the patient's general condition, increase his resisting power all along the line. Antifermentative drugs, like salol, are often helpful. Patients will ultimately find out for themselves what laxative

remedy suits them best. By some means or other it will be absolutely necessary to keep the bowels open.

Copious enemata are good.

7. Phenolphthalein.—Elmer states that phenolphthalein probably belongs to the class of intestinal irritants, but its action seems to be accompanied by less discomfort than the majority of cathartics of this class. It is nontoxic, at least in doses up to 25 or 30 grains. It is extremely stable, very little if any being broken down in passing through the body. A little is absorbed, but is excreted by the kidneys as such. The average dose may be placed at from one to five grains, best given in the powdered form, either at night or in divided doses after meals. In cases of overacidity it can be advantageously combined with an antacid powder.

BRITISH MEDICAL JOURNAL.

October 31, 1908.

- The Work of the Research Defense Society, By S. Paget.
- The Limitations of a Purin Free Diet,
- By A. BRYCE. A Case of Tropical Abscess of the Liver Rapid Cured by Means of the Flexible Sheathed Trocar, By L. ROGERS.
- An Outbreak of an Acute Infectious Eruptive Disease (Rubella), By M. B. ARNOLD.
- The Home Treatment of Scarlet Fever,
- (Seventy-sixth Annual Meeting of the British Medical Association.) Section of Pathology
- Discussion on Cerebrospinal Meningitis,
 Introduced by W. St. C. Symmers.
 Multiple Diverticula of the Sigmoid Flexure,
 By W. H. M. Telling.
 Section of Tropical Diseases.
- Discussion on Sanitation in Reference to Ankylostomiasis in the Tropics,
- Introduced by SIR P. MANSON. Cases of Sleeping Sickness with Nervous and Mental Symptoms, By L. NATHAN-LARRIER.

- Discussion on Lymphatic Diseases in the Tropics, Introduced by C. W. DANIELS.
- Section of Diseases of Children.

 14. Discussion on Causation and Treatment of Scurvy,
 Especially Infantile Scurvy,
- Introduced by SIR A. WRIGHT. 15. On Interstitial Keratitis, with Especial Reference to
- Pathogenesis and Treatment, By S. STEPHENSON.
- 2. Purin Free Diet.—Bryce states that, while the advantages to be derived from the adoption of a purin free diet are sometimes very notable, yet in some cases the results are not so favorable. In all chronic cases of disease in which the ordinary methods of treatment yield no good result, the writer cuts off all xanthin-and purin-containing articles of diet which are at the same time nonnutritious, and this includes tea, coffee, cacao, meat soups, beef teas, and gravies. The first three contain methyl purins, which, though they add no uric acid to the excretions, increase very largely the total urinary purin content. Personal idiosyncrasy has much to do with the diverse results reported, and in the writer's opinion this is ultimately bound up with the metabolic activity of the cells, and especially the cells of the mucous membrane, to withstand the onslaught of irritants such as purin compounds. Small quanti-

ties of purin are almost invariably well borne, and only in isolated cases are larger doses not tolerated. The ability to tolerate purins is markedly influenced by disease-for example, neurasthenia, so called, and kidney ailments where the integrity of the cells of the convoluted tubules is doubtful, yet a man in perfect health with a so called gouty tendency may tolerate them badly because they act as irritants to the mucous membrane of the hepatic ducts, and produce

hepatic insufficiency. 6. Cerebrospinal Meningitis.—Holt's paper is based on a series of 442 cases of cerebrospinal meningitis treated with the serum of Flexner and Jobling. The general case fatality of the disease, in different places and at different times, varies from fifty to eighty per cent. Of the 442 cases here reported on, 295 patients recovered—giving a case fatality of 33.3 per cent. But if the moribund cases, forty patients in number, in whom death occurred within twenty-four hours, are eliminated, the case fatality is reduced to exactly twenty-five per cent. The serum is obtained from horses which have been immunized by injections derived from many strains of the men-ingococcus. Between four and five months are required before the serum is strong enough to use. The serum acts chiefly on the meningococci, diminishing their viability and increasing their capability for phagocytosis. By its effect upon the microorganisms it arrests the inflammatory process. To accomplish this result the serum must be brought directly into contact with these organisms and in a certain degree of concentration. This explains why the serum is practically without effect when given subcutaneously, and also why as much cerebrospinal fluid as possible should be withdrawn before the injection is made. While essentially a bacteriolytic serum, it must possess some antitoxic value as well, for in no other way can be explained the striking rapidity with which the subjective symptoms often improve after injection. From being one of the diseases most to be dreaded, both on acount of its high mortality and its sequelæ, often worse than death, it seems probable that cerebrospinal meningitis will become, like diphtheria, one most certainly controlled by treatment.-Macgregor has studied the development of specific agglutinating bodies and opsonins in the sera of cerebrospinal meningitis patients, and has correlated these immunity phenomena with the general toxic manifestations and the pathological anatomy in the various phases of the disease. His conclusions are as follows: 1. In very acute infections, where toxemic symptoms are severe and death rapidly ensues, there is an entire absence of agglu-tinins from the blood. These cases form the chief epidemic type. 2. On the other hand, in cases which are chronic from the outset the blood contains no agglutinins. These cases may have prolonged pyrexial courses. 3. The degree of agglutinating power which is developed in any given case depends on the initial features of the case, being proportional to (a) acuteness of onset, (b) duration of primary toxæmia, and (c) degree of reaction. 4. Agglutinins are produced only in response to the early toxic phenomena; they appear to be independent of the subsequent course of the case. 5. In a few acute cases, most of which recover, the agglutinins are absent or very feeble, hence they are of little value in the di-

agnosis of such short, often indefinite, cases, 6. The highest opsonic indices occur mostly in those cases of acute initial symptoms of not too short duration which also, as has been noted, possess most marked agglutinating power. Where agglutinating power has been low the index has usually been low. 7. Accordingly, a high index is a sign of a forcible reaction to a fairly severe infection and is of no prognostic value, as patients with low index may recover and patients with a high index have died. 8. The indices tend to be highest during the second and third weeks of illness in an average case. o. The degree of immunity after recovery, as measured by the opsonic index, is very variable. There may be an active opsonin in the blood for many weeks after resolution, or it may occasionally disappear comparatively rapidly. 10. It is scarcely worth while to refer to its diagnostic value. In a typical severe case the opsonic films are no doubt extremely characteristic, but the isolation of the meningococcus from the cerebrospinal fluid is the most valuable and uniform diagnostic method.

LANCET

October 31, 1908.

October 31, 1908.

1. Lupus Erythematosus: Its Nature and Treatment.

By J. M. H. McCleod.

2. Observations on Endemic Cretinism in the Chitral and Gilgit Valleys,

By R. McCarrison.

A Contribution to the Study of the Administration of Tuberculin in Pulmonary Tuberculosis,

By A. Latham and A. C. Inman.

4. Some Unusual Sequelæ of Convulsive Seizures in Childhood,

By F. J. Poynton.

 Lupus Erythematosus.—MacLeod divides lupus erythematosus into two main varieties: (a) The discoid or circumscribed type, which is chronic in its evolution and course; and (b) the disseminated and more or less acute type. Of these the discoid type is by far the more common. Among the main varieties of discoid lesion are the following: I. A well defined lesion with a raised border and an adherent scale in the centre. 2. A nonscaly type in which the epidermis is not affected, the lesions approximating either those of multiform toxic erythemata or lupus vulgaris. 3. A variety with telangiectases over the lesions. In the second main type, the acute disseminated, the lesions develop much more rapidly and the area involved is more extensive. The lesions appear first as vivid erythematous patches about the face, which become covered with adherent scales, spread quickly, and coalesce to involve large areas. These cases are sometimes mistaken for erysipelas, especially when fever is present. All the lesions of both varieties possess two characteristics—that of persistent erythema and that of being succeeded by more or less atrophic scarring. Many authorities hold that lupus erythematosus is a form of tuberculosis, differing from lupus vulgaris in not being the result of the reaction of the skin to the tubercle bacillus in situ. They maintain that the lesions are due to the presence of the tuberculous toxine in the skin which has reached there via the blood stream and has been produced by bacilli situated in some remote tuberculous focus, that lupus erythematosus is a "toxituberculide.' But the writer thinks that at the present time there does not seem to be sufficient evidence, clinical, histological, or bacteriological, to prove that it is a tu-

berculous manifestation, nor is there conclusive proof that in those cases in which it occurs in tuberculous subjects the tuberculous toxine is the direct cause of it. A study of the condition in its many aspects suggests that it is not in the true sense a pathological entity due to one specific cause, but is rather a morbid condition of the type of an ervthema, which is persistent in character and tends to be succeeded by atrophy, and which may be brought about by a variety of causes in a predisposed individual. As predisposing causes may be cited: (a) hereditary weakness; (b) enfeebled states of health resulting from any general morbid condition, of which tuberculosis and rheumatism are probably examples; (c) a weak peripheral circulation and various circulatory disturbances arising from anæmia, heart disease, etc.; and (d) a delicate condition of the bloodvessels in the situations usually affected, owing to anatomical reasons. Direct causes may be divided into: Local, such as cold, sudden temperature changes, sunlight, traumatism, mosquito bites, or microbic infection; and toxines reaching the skin via the blood stream, such as toxines resulting from imperfect metabolism in the intestinal tract or from a defective state of the kidneys, liver, or other organ. Lupus erythematosus has long been recognized as one of the most intractable of skin affections. Local treatment has afforded the best results so far. Internally quinine and salicin have been recommended. The first step in local treatment is to remove the adherent scales and to prevent their reforming. This can be done with green soap spirit or salicylic acid ointment. The next indication is the drying of the lesions, which can be done by bland powders, by lotions containing an insoluble deposit, and by pastes containing equal parts of powder and grease. A further indication is the reduction of the hyperæmia and vascular dilatation, for which ichthyol ointment may be employed to advantage. The Finsen light sometimes gives good results, but the x rays are contraindicated.

2. Endemic Cretinism. — McCarrison studied endemic cretinism in India and has reached the following conclusions: I. The degree to which cretinism is associated with goître is determined by the age of the endemic and varies directly with the extent to which the latter disease prevails among the adult population. 2. Cretinism is rarely if ever due to the development of a goitre in the individual. The thyreoid enlargement is, or may be, an effect; it is not the cause of the disease. 3. Defective thyreoid function in the mother is the essential factor in the production of cretinism. 4. Cretinism is due to the action of toxic agents, notably that of endemic goitre on the developing thyreoid of the unborn child. 5. The thyreoid defect is congenital, but it may remain latent pending its manifestation through the impulse of some accidental circumstance. 6. The defect in cretinism is one of the whole thyreoid mechanism, of the parathyreoids as well as of the thyreoid gland. The diversity of symptoms is due to the extent to which the defect bears upon the whole or part of that mechanism,

3. Tuberculin in Pulmonary Tuberculosis.— Latham and Inman sum up their conclusions as follows: 1. Tuberculin may be given with effect by the mouth or rectum, or subcutaneously. The dosage

is dissimilar, but animal experiments, opsonic curves, and temperature charts show that the effects produced are the same. 2. The administration of tuberculin meets with little, if any, success so long as successive autoinoculations spontaneously occur and cannot be limited by the means at our command. Absolute rest is the most efficient means for limiting autoinoculation. 3. The administration of tuberculin may be adequately controlled in a large percentage of cases of pulmonary tuberculosis by a careful daily observation of the temperature and clinical condition of the patient. 4. In cases of difficulty valuable information may often be obtained from an examination of the opsonic index. 5. The German method of the routine administration of tuberculin by gradually increasing doses at stated intervals is not to be recommended. It is only satisfactory in a very limited class of cases, and even then may not lead to the best results. 6. Tuberculin is a dangerous drug and its administration requires considerable experience. It is capable, when given improperly, of producing disastrous and even fatal results.

LA PRESSE MEDICALE.

September 26, 1908.

- Continuous Partial Epilepsy,
 Serious Icterus of Secondary Syphilis. Pathological Anatomy and Microbiology,
 By A. SEZARY.
- 3. Physical, Chemical, and Therapeutical Study of Rotra, By Jourdan and Liot.
- Photography of Cardiac Murmurs, By R. Romme.
 Second Congress of the International Society of Surgery.
 - 6. The Beverages of Nursing Women,
- 7. The Axis of the Lower Limbs, By L. BOUCHACOURT.
 By P. Desfosses.
- 1. Continuous Partial Epilepsy.-Schmiergeld discusses the symptomatology, ætiology, pathogeny, pathology, development, prognosis, diagnosis, and treatment of this disease, which was first described in 1894 by Kojewnikoff, a Russian physician. Only sixteen cases have been reported, all in Russia. The essential characteristic of the disease is the coexistence in the same patient of attacks of epilepsy and partial convulsions persisting during the intervals between the attacks. In eleven of the sixteen cases the patients were women. It was ascribed in six to infectious diseases, in two to syphilis, in three to alcoholism, and in four to traumatism. Little is known of the pathology, as no autopsy has as yet been secured, but Osokine removed a bit of the cortex during an operation on one patient and found very distinct changes therein. The disease develops very slowly, and the prognosis is not good. It is liable to be confounded with paralysis agitans, chorea, tics, Jacksonian epilepsy, in which the paroxysms succeed each other without intermission, and finally epilepsy complicated by chorea. Treatment with the bromides gave the best medical results, according to one author; another preferred trinitrine. Surgical treatment resulted in a diminution of the involuntary contractions, which lasted in one case five and in another four years,
- 2. Serious Icterus of Secondary Syphilis.— Sezary reports a case of this nature that resulted fatally. He gives its characteristics as an insidious appearance of icterus without apparent cause in a voung woman who presented the stigmata of sec-

ondary syphilis, the absence of preexistent digestive troubles, the absence of fever, and later the presence of a subnormal temperature, the absence of brachycardia, the nocturnal malaise which disappeared during the day, and finally the sudden development of this seemingly benign icterus into a malignant form, The pathology and microbiology are dwelt upon at length.

September 30, 1908.

The Pathogeny of the Permanently Slow Pulse,

By H. BUSQUET. Apropos of Inflammatory Tumors, By J. Tissor. The Modifications of the New Codex, By Alfred Martiner. Second Congress of the International Society of 3.

The Pathogeny of the Permanently Slow Pulse.—Busquet discusses the views that have been advanced to explain this condition, and decides that the clinician must study each particular case bearing these theories in mind, in order to decide upon the proper therapeutic course to be followed.

2. Inflammatory Tumors. - Tissot reports three cases, one of pyloric stenosis with tumor, gastroenterostomy, and complete cure; the second of ulcer of the stomach, anterior perigastritis, with a large "plastron," gastrolysis, gastroplication, and gastroenteroanastomosis, and the third of intestinal obstruction due to a tumor in the pelvis, formation of an artificial anus, followed by a cure and resorption of the tumor.

BERLINER KLINISCHE WOCHENSCHRIFT. September 28, 1908.

The Protection of the Stomach against Self Digestion, together with a Suggestion Concerning the Treatment of Ulcus Ventriculi, By KATZENSTEIN. The Question of the Idiopathic Form of Meningitis

Spinalis Serosa Circumscripta, By L. Bruns,
Blood Conditions in Exophthalmic Goitre and Thyreoidismus, By L. Caro.
Neuritis Ascendens, By G. C. BOLTON,
Tabes and Paralysis in the Light of the Modern Investi-

gation of Syphilis, By FRITZ LESSER.

Nitrite Poisoning from Bismuth Subnitrite, By Nowak and GUETIG.

Potassium Iodide Treatment in Suppuration of the Accessory Sinuses of the Nose, By H. Hempel.
Contributions to the Question of Acute Dilatation of the 8

Heart, By Hornung My Experiences with Moro's Reaction, By A. LEJEUNE

10. Charitable Institutions for Mothers and Infants and Their Financial Support, By W. HANAUER.

11. Ovulation and Pregnancy in Forensic Psychiatry,

By Hugo Marx.

I. The Protection of the Stomach against Self Digestion.—Katzenstein says that living, well nourished tissue may be digested in its own stomach, that the stomach and duodenum are able to resist the action of this juice only in consequence of a process of adaptation, that this property is not dependent on the life of the cells, but that even the dead wall of the stomach exhibits a power of resistance to digestion, and that the continued existence of an ulcus ventriculi is probably dependent on a diminution of the antipepsin in the wall of the stomach and the blood. Therapeusis through administration of antipepsin is therefore indicated in ulcer of the stomach.

Blood Conditions in Exophthalmic Goître and Thyreoidismus.-Caro concludes: 1, The well marked cases of exophthalmic goitre show a great reduction of polynuclear leucocytes, as great

as fifty per cent., and a great increase of mononucleated white corpuscles (lymphocytes in the narrow sense) up to fifty per cent. The small lymphocytes predominate among the mononucleated white blood corpuscles. 2, The increase of the entire number of mononucleated white corpuscles is found, though not in so high a degree, in thyreoidism. This can be of value in cases that are difficult to diagnosticate. 3, The proportion in which the lymphocytes in the narrow sense and the large mononucleated cells take part in the increase of the entire number of mononucleated white blood corpuscles varies in different cases. In the cases of simple thyreoidismus an increase of the large cells seems to predominate, in the severer cases of exophthalmic goître the small lymphocytes. The fewer the clinical symptoms of thyreoidism that are present the more nearly does the condition of the blood approach the normal. 4, In a case of formerly marked exophthalmic goitre which clinically appeared to be healed the blood approached the normal, but a slight increase of the large mononucleated leucocytes induced slight toxic influence both in this case and in cases of struma without noticeable thyreoidism. 5, In one case, after resection of the thyreoid gland, a slight improvement in the condition of the blood was observed; in another none except a slight reduction in the number of the large mononucleated leucocytes, but in both cases the time of observation was too short. 6. In the cases given tablets of thyreoid gland an increase in the total number of mononucleated leucocytes and of the polynucleated leucocytes was observed without exception. At first the increase of the large mononucleated leucocytes appears to be relatively greater.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 29, 1908.

1. Chinical Hypersensitiveness By Moro. 2. The Present Methods for the Stimulation of Diuresis,

By ROMBERG 3. Does Mueller's Procedure Suffice for the Distinction of
Acute and Tuberculous Pus by Means of Millons's Reagent? By HOSEMANN.

4 Investigations Concerning Tuberculous Antibodies and Immunity, By Christian and Rosenblatt. Contribution to the Diagnostic Limitation of Certain

Forms of Idiocy, By Vocr,

6. The Presence and Signification of Monolaterally Increased Temperature in Pulmonary Affections.

By VOGEL A Simple Comparison Spectroscope, By BÜRKER Contribution to the Intravenous and Subcutaneous Use of Cardiac Remedies, By Hornung.

Concerning the Gangrenous Ulcer of the Lower Limbs
 Met with in Natives of East Africa, By Lenz.
 The New Explanation of the Action of Tuberculin,

By ZIELER. 1. Clinical Hypersensitiveness.—Moro, in this the first portion of his paper, considers the relations between the tuberculous reaction and the nervous system. He reports a number of cases of the percutaneous tuberculin reaction that he has observed; he describes five different forms of the reaction. He considers the reaction to be a vasomotor phenomenon produced by a great stimulation of the vasodilator tracts, and classes it as an angeioneurotic inflammation. In tuberculous individuals there is a specific irritability of the nervous system to tuberculin, so to say, a specific nervous allergie.

3. Mueller's Procedure for the Distinction of Acute and Tuberculous Pus by Means of Mila. lons's Reagent. - Hosemann concludes that Mueller's pus test is not applicable in all cases.

5. Certain Forms of Idiocy.-Vogt deals with a study of cases of idiocy and epilepsy due to tuberculous sclerosis.

ANNALS OF SURGERY.

October, 1008.

Cancer of the Mouth and Tongue, By J. C. WARREN. A Method of Operation in Extensive Cancerous Growths of the Cheek Involving the Jaw,

By L. W. Hotchkiss. Recurrence at a Late Period after Operation for Cancer of the Breast. By W. M. MASTEN.

Osteoplastic Resection of the Costal Arch Followed by Resection of Lesser Curvature of the Stomach and Esophagus, and Esophagostomy, By J. WIENER. Notes on the Arrest of Hepatic Hæmorrhage due to

By J. H. PRINGLE. Cause of Sudden Fall in Blood Pressure while Explor-

By J. L. RANSOHOFF. ing the Common Bile Duct, Method to Facilitate the Avoidance of Infection during Intestinal Anastomosis. Preliminary Report,

By J. HALPENNY.

Primary Carcinoma of the Appendix,

By A. E. Garron and C. B. Keenan.

Carcinoma of the Appendix Vermiformis,

By G. H. Monks. By W. B. Brinsmade. 10. Chyle Cysts of the Mesentery, 11. The Ætiology of Hydronephrosis, By F. E. GARDNER.

Cancer of the Mouth and Tongue.-Warren derives the following conclusions from a review of the literature of this subject: 1. The relation of the lymphatic system to the primary growth is the most important anatomical consideration in operations for cancer of the mouth and tongue. 2. Chronic inflammatory processes of the mucous membrane which do not yield promptly to local treatment, are of importance as predisposing or precancerous conditions and should be treated surgically. 3. Cancer of the mouth and tongue is a local disease limited to the tissues immediately surrounding its point of origin, and to the adjacent lymphatic system. Internal metastases are rare. 4. Microscopical examination of the primary growth is the test of diagnosis. Antisyphilitic treatment should not delay surgical interference. 5. The operative treatment involves (a) preliminary treatment of the oral cavity, (b) protection of the respiratory tract by drugs, by intubation, by pharyngotomy, or by position, (c) removal of diseased tissue and an additional inch of healthy tissue, (d) block dissection of lymphatic tissues of the anterior cervical triangle on one or both sides, (e) as an alternative the block dissection may be made two weeks after the primary operation, (f) the intrabuccal operation should be supplemented by dissection of one or both anterior cervical triangles, (g) the submaxillary route is inadequate for free access to the diseased tissues, (h) the route through the jaw exposes the entire field, but adds to the surgical risk. 6. The ideal operation should contemplate free exposure of the mouth and anterior cervical triangles as a continuous area, with a block dissection of the diseased contents. 7. The mortality varies with the extent of the operation, being between five and thirty-five per cent. Death usually results from shock, sepsis, or bronchopneumonia. 8. In 112 operations for cancer of the mouth and tongue at the Massachusetts General Hospital sixteen patients were free from recurrence more than three years after operation. 9. Of fifty-seven cases of cancer of the tongue

ten patients were cured by operation. 10. Local recurrence of the disease occurred more frequently than recurrence in the lymphatic glands alone. Recurrence more than three years after operation was observed in only one case.

4. Osteoplastic Resection of the Costal Arch. -Wiener observes that every operation of this nature ought to be carefully reported. The operation may be done in two stages under anæsthesia, or in one or two stages under spinal anæsthesia. In the author's case he waited thirty days before doing the secondary operation, and though adhesions had formed they did not complicate the technique. The first step of the operation was done under gas and ether, the second—the resection of the stomach and cesophagus-under spinal anæsthesia. There was very little pain, and the advantage of consciousness is that the patient can be allowed to take a swallow of water after the suturing is completed to see whether there is leakage. The steps of the complete operation are suggested as follows: First operation. Osteoplastic resection of the costal arch through an incision parallel to the free border of the ribs, or through a median and cross incision. Second operation. Resection of stomach and œsophagus and gastrostomy or jejunostomy. Third operation. Œsophagostomy at the root of the neck.

ARCHIVES OF PÆDIATRICS October, 1908.

- Epidemic Cerebrospinal Fever, Its Clinical and Pathological Phases, with Photographic Illustrations,
- By B. F. ROYER.
 Lumbar Puncture, its Technique and the Value of
 Cytodiagnosis in Distinguishing Tuberculous Meningitis from the Epidemic Variety
- gitis from the Epidemic Variety,

 By E. Burvill-Holmes.

 An Analysis of Four Hundred Cases of Epidemic

 Meningitis Treated with the Antimeningitis Serum,

 By S. Fleener and J. W. Jobling.

 Paper on the Serum Treatment of Meningococcic

 Meningitis,

 By F. S. Chukchill.

 The Serum Treatment of Epidemic Cerebrospinal Meningitis based on a Series of Forty Consecutive

 Cases,

 My C. H. Dunn.
- 6. Hydrocephalus of Meningococcus Origin with a Sum
 - mary of Recent Cases of Meningitis Treated by Antimeningococcus Serum, By J. H. M. KNOX, Jr., and F. J. SLADEN.
- Epidemic Cerebrospinal Fever. Royer thinks that an accurate prognosis cannot be given until the patient has been free from symptoms for several months. If a patient is alive and conscious three or four days from the beginning of the attack there is a fair chance of recovery, and if he lives a month the chances are even. The mortality in most epidemics varies from sixty to eighty per cent. The usual methods of treatment are disheartening to doctor, nurse, and relatives. There is no specific medicine for the disease unless Flexner's serum should prove to be such. With morphine the pain may be controlled, delirium lessened, and sleep secured. An ice cap to the head is next in value to morphine. Ice may also be applied to the spine. Early lumbar puncture with removal of nearly all available fluid is sometimes curative. Alcohol and hydrotherapy are sometimes beneficial, especially the warm bath with massage. Strychnine, the bromides, the coal tar preparations, careful feeding, and good nursing are all useful adjuncts in the scheme of treatment.

2. Lumbar Puncture, its Technique and the Value of Cytodiagnosis in Distinguishing Tuberculous Meningitis from the Epidemic Variety.-Burvill-Holmes thinks it strange that this operation is so often omitted when it is so easily performed and is so useful, both from a diagnostic and a therapeutic standpoint. The operation is not free from danger, but accidents have been few. In operating one may use an anæsthetic or not, a single plunge of the needle may be all that is necessary, but everything connected with the operation must be sterile. The patient may sit or lie, as the occasion may seem to indicate, but the fluid will flow more freely if the patient is sitting up. A small trocar and cannula are preferable to a needle in making the puncture. The normal spinal fluid is clear, alkaline, contains a trace of albumin, and has a specific gravity of 1,000 to 1,002; if this is withdrawn epidemic meningitis can be eliminated. In doubtful cases, and those in which the meningococcus and tubercle bacillus cannot be demonstrated, a cytological estimation will be found very advantageous.

5. The Serum Treatment of Epidemic Cerebrospinal Meningitis Based on a Series of Forty Consecutive Cases .- Dunn offers the following conclusions as the result of his studies: 1. The use of the Flexner antiserum is of great value in epidemic cerebrospinal meningitis. Its value is comparable to that of diphtheria antitoxine. 2. The use of the serum will sometimes result in the abortion of the disease, it frequently relieves the symptoms with great rapidity, shortens its course, lessens the liability to sequelæ, and greatly diminishes the mortality rate. 3. The serum should be used as early as possible in all cases even of suspected epidemic meningitis. 4. It should be frequently repeated as long as there are symptoms or any tendency to relapse. 5. Late chronic cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief from its use. 6. Some cases are resistant to good effects

from its use.

EDINBURGH MEDICAL JOURNAL.

October, 1908.

I. On Osseous New Growths at the Elbow Following Backward Dislocation of the Radius and Ulna, By DAVID M. GREIG.

The Treatment of Cerebrospinal Meningitis with Flexner's Serum,
 By Claude B. Ker.
 A Theoretical Objection to the Employment of the

Calmette Ophthalmoreaction for Tuberculosis,
By F. Parks Weber.

Osseous Growths at the Elbow Following Backward Dislocation of the Radius and Ulna .-Greig reports three such cases. He cites Jones and Morgan, of Liverpool, who stated that "any muscle may be the subject of bony change, but by far the most commonly affected is the brachialis anticus, followed by the quadriceps and adductor longus." This statement is contradicted by our author, who concludes that such formations have nothing to do with muscle, though they may be in anatomical proximity, and therefore, when reabsorbed, the muscles are left unaltered in their natural usefulness. Dr. Greig then remarks that in a recent simple dislocation at the elbow, or at any other joint, the parts have not lost their natural resiliency, muscles are still overstretchable, so the as to allow the displacement and replacement

of the bones with a minimum tearing of the soft parts. If such dislocation is reduced at once, it is most unlikely that anything unexpected will result, as the bruised tissues soon return to their normal condition. Should, however, undue violence be exerted in the production of the dislocation or in the replacing of the bones; or should the soft tissues have lost their resiliency either by infiltration with inflammatory products or from too prolonged stretching in abnormal positions, then such injury is inflicted as would be likely to produce a tearing from their attachments of those muscles on which the greatest strain is thrown during the accident or the subsequent manipulations. If the tearing is sufficiently severe to raise the periosteum, then will occur the escape from the Haversian canals or from the periosteum of the elements which are necessary for the production of callus. Such bruising takes place in proportion to the force producing the injury or employed afterwards, and varies with age and the stiffness of the muscles. In some cases it has been recorded that new bone thus formed about an injured joint actually contained a blood cyst-surely incontrovertible evidence that the new bone is formed, not by blood clot, but in blood clot by bone forming elements entering into the effusion produced at the time of injury; that is to say, at the time of the accident or during reduction. Herein lies a simple and satisfactory explanation of this fortunately rare occurrence. About the elbow it is most common in connection with the tearing of the attachment of the brachialis anticus to the ulna, but there is no reason why similar osteophytic growths should not occur about the attachment of other The circumstances which lead to the muscles. formation of new bone in these cases are not very dissimilar from the formation which takes place in inflammatory conditions raising the periosteum, or in the stripping of the periosteum by subperiosteal hæmorrhage in infantile scurvy.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBER-CULOSIS.

Held in Washington, D. C., September 28, 22, and 30, and October 1, 2, and 3, 1408. (Continued from page 960.)

Fibrotuberculoma of the Pleura.—Dr. EDWARD RIST, of Paris, reported the case of a tumor which took the place of an atrophied lung, which weighed ten pounds, and which was attached to the thoracic wall by a pedicle. Sections made from the growth showed it to be a fibrotuberculoma.

The Chemistry of the Tubercle Bacillus.—Dr. VICTOR C. VAUGHAN, of Ann Arbor, Mich., said that after freeing tubercle bacilli, which were grown in large quantities, from fats, waxes, and other substances soluble in alcohol and ether, the organisms were split by an alcoholic solution of an alkali into a poisonous portion and a nonpoisonous portion. The poisonous portion killed animals within a few months, when given in doses of from seventy-five to one hundred milligrammes. The nonpoisonous por-

tion "sensitized" animals to the tubercle bacillus, but was without poisonous action. That portion of the split bacillus was being used in the treatment of tuberculosis in man; but it was too early to state whether it was better than the old tuberculin or not.

On the Action of Soaps upon the Vitality and Immunizing Property of Bacillus Tuberculosis. -Dr. Hideo Noguchi, of New York, said that it had been demonstrated by previous experiments that oleate soaps, when combined with the blood serum, possessed some of the distinctive properties of complements, and that they exhibited bactericidal activity in a high degree. The action of such soaps was tested upon the Bacillus tuberculosis. In the first place, oleate soaps possessed the power, when emploved in appropriate concentrations, of modifying otherwise virulent tubercle bacilli, so that when subsequently inoculated into guinea pigs, they either failed to cause the lesions of tuberculosis or the lesions were much less in degree than they were in the control animals. When death occurred from tuberculosis in the animals inoculated with the bacilli, it occurred invariably much later than in the control animals. Second, a guinea pig that failed to have tuberculosis, when inoculated with the bacilli treated with oleate, showed a definite degree of immunity to vigorous and otherwise virulent cultures of the bacillus. Such resistant guinea pigs either had no lesions after the inoculation of large quantities of the virulent cultures, or they showed lesions of a much milder degree and of slower evolution than the lesions developed in the control animals. Third. oleate soaps possessed distinct bactericidal properties for the bacillus. The addition of the soaps to an otherwise favorable culture medium prevented the growth of the bacillus even when the quantity was small. Solutions of the soaps, brought into contact with the emulsified bacilli, diminished the ability of the bacilli to grow in cultures and to cause active infections in animals. Solutions of soaps, less in amount than were required to inhibit the growth completely, reduced the number of developing bacilli. There was a relation between the bactericidal property of the soaps and the immunity produced in guinea pigs by the inoculation of the soap treated cultures. The bactericidal effect of the oleate soaps was far greater than that of their component acids and bases, and could not be reproduced by the separate chemical constituents of the soaps. The bacilli isolated from cold blooded animals were more resistant to the bactericidal effects of the soaps than those isolated from warm blooded animals. Fourth, it had been established by Conradi that substances resulting from the autolysis of organs might be actively bactericidal. Bartel had shown that the products of the autolysis of lymph nodes were injurious to the bacillus, and that such products reduced the virulence of the bacilli. The precise constituent of the autolyzed organs upon which the bactericidal action depended was not known, but there was reason to believe that it belonged to the lipoids. The experiments forming the basis of the paper read made it probable that the soaps formed during that process might be one of the important factors, if not the chief factor, in the phenomenon of the destruction of the bacilli and in the reduction of their viru-

The Part of Enzymes in Tuberculous Lesions. -Dr. Eugene L. Opie, of New York, said that he had studied the enzymes of tuberculous lesions produced by inoculating animals in the pleural cavities with tubercle bacilli. The enzyme peculiar to the polymorphonuclear leucocytes was present a short time after the inoculation, but it diminished in activity quickly. A second enzyme which digested proteid in a weak acid solution was present in great abundance until caseation occurred, when it disappeared. The serum of the exudate which accumulated in the chest lost the power possessed by the serum of the blood to inhibit this and similar enzymes. The enzyme which acted in an acid medium was probably present in the epithelioid cells of the tubercle, and was similar to that of the large uninuclear cells of an inflammatory exudate, which the epithelioid cells resembled. Autolysis caused by the enzymes not held in check might explain the occurrence of caseation in poorly vascularized tissues containing the products of the tubercle bacillus.

Humoral Properties of Tuberculous Exudates; Prognostic and Therapeutic Value.—Dr. PAUL COURMONT, of Lyons, said that a large quantity of a tuberculous exudate was a good prognostic sign. But a quantity as much as one tenth of the bodily weight of the animal was often followed by disastrous results. In cases in which smaller quantities were followed by bad clinical results it indicated that absorption might predispose the individual to infection later. The serum in a pleuritic exudate was distinctly bactericidal. The exudate agglutinated the tubercle bacillus, and the greater the agglutinating power the better the prognosis. The author maintained that the exudate was excreted by the endothelial cells and that it was not a transudate. In estimating the bactericidal properties of the serum of a pleuritic exudate it was difficult to establish a reasonable basis for comparison.

Report on Serological Studies in Tuberculosis. -Dr. H. von Schroetter, of Vienna, reported for Dr. K. REITTER and Dr. E. STOERK upon their serological studies, which were intended to extend the methods at the disposal of the clinician for the early diagnosis of tuberculosis. It had been demonstrated that the serum of tuberculous patients, especially in the early stages of the disease, contained substances of a colloidal nature which were precipitated by the adition of double the amount of 0.5 per cent. car-bolized sodium chloride solution. The addition of an ethereal extract of tubercle bacilli of a strength of one half gramme of tubercle bacilli to two hundred cubic centimetres of carbolized salt solution rendered the precipitating reaction positive in even a higher percentage of cases. In the diagnostic application of this reaction certain diseases, probably accompanied by lipæmia, must be excluded, such as tumors in retrogressive metamorphosis, diabetes, and occasionally infections of a nontuberculous char-

The Tinctorial Characters of the Tubercle Bacillus.—Professor Teissier, of Paris, described the morphological and tinctorial characters of tubercle bacilli grown in glycerin. He described the granules that were produced in the organisms in from three to four weeks. He said that he could produce changes in the tubercle bacilli by chemical

methods which were similar to those produced in the homogeneous culture by the action of glycerin and glycogen.

Dr. PAUL COURMONT said that homogeneous cul-

tures grew well in a glycogen solution.

The Rôle of the Fatty Acids of the Bacillus Tuberculosis .- Dr. CAMUS and Dr. PANNIEJ said that they had performed experiments to determine the effect of the free fatty acids which were thought to account for the acid fast properties of the Bacillus tuberculosis. They found that they were able to color free fatty acids by the same tinctorial methods that were used for the staining of the tubercle bacillus. They also found that after the tubercle bacillus had been deprived of its fatty acid it had lost its acid fast properties. They further found that when free fatty acids were injected into animals they produced follicular lesions, caseous lesions, and other changes similar to the changes in structure produced by the tubercle bacillus. Injection of the free fatty acids seemed to produce a local supersensitiveness.

Some Considerations Concerning the Lesions of Tuberculosis.—Dr. WILLIAM T. COUNCILMAN, of Boston, said that the tuberculous lesion was modified by the variety of tubercle bacillus that produced it, by the number of tubercle bacilli producing the disturbance, by the susceptibility of the animal, by the route of the infection, by the age of the animal, and by the presence or absence of a mixed infection. A tuberculous lesion was subject to all the degenerations seen in the acute infections. He believed that the epithelioid cells were derived from

the endothelium lining the bloodvessels.

Dr. A. S. WARTHIN, of Ann Arbor, Mich., said that he could not agree with Dr. Councilman that the epithelioid cells were derived from the endothelium of the bloodvessels. He referred to the epithelioid elements found in the placenta, which, he said, were certainly not derived from the endothelium

Anatomical Characteristics of Tuberculous Infections and their Relation to Tuberculin Reactions .- Dr. S. Arloing, of Lyons, said that the lesions that accompanied tuberculous infection did not always represent tubercles visible to the naked On account of the lower virulence of certain tubercle bacilli the lesions were sometimes so slight that they were visible only on histological section. On the other hand, the diminution in the virulence of an organism might bring about a certain modification of the lesions, which in turn would bring about profound changes in the reaction of the body. Again, there were some instances in which the bacilli spread in the body of the animal and exhausted themselves without leaving trace of their passage. In such a case the infection showed itself by the presence of the bacilli in the tissues only, or by the experimental methods of diagnosis, such as the tuberculin reaction and the serum agglutination test. Whatever the character of the tuberculous infection, the patient would at some time react positively to these experimental tests. Hence these tests revealed the existence of bacillary infection rather than the presence of appreciable tuberculous lesions. On this account the disagreement between the experimental diagnosis and the post mortem microscopical diagnosis might be expected, but it was more apparent than real. The number of these discrepancies would be diminished by seeking the histological changes and the bacilli at autopsy. In the absence of both histological changes and of bacilli a positive tuberculin reaction should be regarded as proof that a latent infection was either extending in the body or was in the process of recovery. During life the information conveyed by a positive reaction to tuberculin would usually be found to be accurate. The methods of diagnosis and prognosis must be perfected in order to foretell as accurately as possible the future of a tuberculous infection.

An Anatomical and Pathological Study of the Nonfollicular Lesions of Tuberculosis. — Dr. Léon Bernhard, of Paris, said that it was customary to consider as tuberculous lesions only the tubercle with its various forms of structure and of evolution. Around the tubercles, however, there were alterations which were usually said to be inflammatory in character, and at a distance from the tubercles other inflammatory foci might be found. These changes were set up by the tubercle bacillus just as much as the tubercle was produced by that organism. The reactions in the various tissues which were produced by the tubercle bacillus, as well as by other pathogenic organisms, were congestions, infiltration of the connective tissues with a lymphocytic exudate, sclerosis, fibrinous exudate, and simple hyperplasia of the lymph nodes. In the parenchymatous cells of the body all varieties of degeneration were found, as well as hyperplasias and neoplastic formations. These lesions were called by the writer the "follicular lesions" produced by the bacillus. On the other hand, he described a number of nonfollicular lesions due to the Bacillus tuberculosis. He used the term "nonfollicular" because it did not indicate anything about the pathogenesis of the lesions. The term "toxinic" bad term, as it implied an interpretation of the pathogenesis of the lesions, and the term "inflammatory" was bad because it implied that the follicular lesions were not inflammatory. On account of the characters of these lesions, which they possessed in common with other lesions of a similar nature, they were at first thought to be due to the secondary infections, and not to the tuberculous infection. Other observers thought that they were due to the action of the diffusible poisons of the tubercle bacillus. The author maintained that the results of several series of experiments had demonstrated that the diffusible poisons of tuberculosis were unable to produce lesions similar to those known as the nonfollicular lesions. On the other hand, the Bacillus tuberculosis itself was able to produce all of the tissue changes described under the term nonfollicular. The reason why the Bacillus tuberculosis sometimes produced follicular lesions and sometimes nonfollicular lesions was not dependent upon the virulence of the organisms, but rather upon the number of organisms operating upon the tissues which showed the changes, and upon the intensity of the toxic action. He maintained that there was no essential difference between the follicular lesions and the nonfollicular lesions; they were different reactional aspects dependent upon unequal toxic action.

The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship between Hyaline Deposits in these Glands and the Healing of Tuberculous Lesions.—Dr. A. S. Warthin, of Ann Arbor, Mich., said that the mesenteric and the retroperi-toneal lymph nodes contained hyaline deposits or hyaline changes in almost every case that came to the autopsy table. The hyaline substance varied in size from that of a red blood corpuscle to that of larger and smaller macroscopic islands. hyaline masses were looked upon by the writer as old healed infectious lesions, probably tuberculous, in the majority if not in all of the cases. He believed that the intestinal route of infection was thus shown to be just as important as the pulmonary route in the development of tuberculosis. In only a few cases could tubercle bacilli be demonstrated in the lymph nodes.

Dr. W. H. Welch, of Baltimore, said that this announcement of Dr. Warthin's was startling. He was not absolutely convinced that the statement was true, but he would investigate the question. If the statement was found to be true, it indicated that the intestinal route was the predominant one in infection with tuberculosis. He inquired whether any

areas of calcification had been found,

Dr. Warthin said that calcification was frequently associated with these hyaline lesions. He thought that the hyaline patches might be due to

healed typhoid lesions.

Dr. WILLIAM T. COUNCILMAN, of Boston, said that tuberculosis could undoubtedly lead to hyaline degeneration, but that hyaline degeneration could also occur as the result of lesions set up by a large number of other infective agents.

Dr. Francis Harbitz, of Christiania, agreed in the main with the statement of Dr. Warthin.

Dr. Warthin said that other infective agents

might produce the same hyaline changes.

Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Different Organs.—Dr. J. George Adami and Dr. John McCrae, of Montreal, said that in the last 1,000 autopsies held in the Montreal General Hospital there were evidences of past or present tuberculosis in 417, or 41.7 per cent. One hundred and fifty-one cases showed healed lesions; ninety-three cases showed latent lesions; twenty-two cases showed slight active lesions; twenty-three cases showed generalized lesions; eighty-five cases showed pulmonary lesions; twelve cases showed bone lesions; and ten cases showed genitourinary lesions.

(To be continued.)

Wetters to the Editors.

ANCIENT GREEK MEDICINE

126 EAST THIRTY-FOURTH STREET,

To the Editor:

Kindly permit me some remarks on the article, thus entitled, by Dr. Charles W. Super, of Athens, Ohio, published in your issue to-day. It appears to me that the learned author did not do full justice to the Greek physicians of antiquity.

The first Greek physicians were priests of Asclepios (the Romans called him Æsculapius), the Greek god of the art of healing, and they called

Greek god of the art of healing, and they called themselves Asclepiades. Medical knowledge was transmitted from father to son in the Asclepian families, and the pupil had to take an oath not to reveal the secrets entrusted to or inherited by him. Hippocrates, who lived in the fifth and fourth centuries B. C., the son of an Asclepian priest, was the first who placed medicine on a scientific basis, who made medicine a science. He is the greatest

and the model physician of all times.

The Greek physicians during and after the time of Hippocrates continued to call themselves Asclepiades, descendants of the god Asclepios They congregated in the temples of Asclepios; their practice, however, was no longer merely temple medicine mixed up with the mystic, but it was based upon facts derived from observation at the bedside. The Greeks were accurate observers, and they endeavored to explain physiological and pathological processes of the human system. Here we encounter the first distinction in medicine between science and faith, mentioned by Dr. Super in quoting the words of Socrates, the contemporary of Hippocrates. These same words of Socrates, applied to metaphysics by Kant, have played an important rôle in theology. In this connection it may be mentioned that the designation "Christian Science," adopted by a new school of the art of healing, is self contradictory, since the adherents of this school exclude everything that is scientific and confine themselves to matters of faith.

It was principally the observation at the bedside which the Greeks developed to such a high state of exactness that we, even at this time, are obliged to look up to it as an example that we should emulate in our work. No change in the condition of the patient remained unobserved, and the different symptoms of the different diseases were so well described that later observers, even those of our times, had, and have, hardly anything to add. Medicine of the ancients, before the Alexandrian era, was confined to the study of the symptoms; pathological

anatomy did not exist.

Admirable were the accomplishments of surgery when we consider that the ancients had no exact knowledge of the anatomical construction of the human body, and that, possessing only rather primitive surgical instruments, they undertook great operations, such as trephining, amputations, resections. The ancient Greeks were well advanced even in the treatment of diseases of the eye, as operations for cataract were undertaken by them.

After the conquests of Alexander the Great, culture and learning gravitated toward the Orient, and Alexandria became the principal centre of classical education and knowledge. This period of Greek history is called the Alexandrian, and it began in 323 B. C., attaining its highest glory in 30 B. C., when it came under the control of Rome.

As Dr. Super states, it was first in Alexandria where physicians were permitted to enlarge their knowledge by means of dissection of human ca-

davers.

From Alexandria, Greek medicine took its way to Rome. Physicians of the Orient, who since the second century B. C. immigrated into the capital of the new empire, excited the admiration of the Romans, demonstrating to them what physicians who merit this name were able to accomplish.

Medicine, so far as it originated in Italy, was restricted to the knowledge of domestic remedies and to minor surgery, and it soon gave way to Greek medicine, the superiority of which speedily influenced the physicians of Rome to become the pupils of Greek physicians and to adopt their teachings.

The Romans had not looked upon medicine as a noble art or vocation, it being frequently practised by slaves; and this is why the Romans did not contribute to enrich it. Medical science, even in Rome, remained in the hands of the Greeks; all the valuable works were written by Greeks and in the Greek language. Galenos, the greatest theorist of antiquity; Dioscorides, the pharmacologist; Soranos, the gynæcologist, all were Greeks. The Latin language can pride itself on only one medical book of significance, and this was written, not by a physician, but a layman, the highly cultivated A. Cornelius Celsus.

In old Hellas, the physician, "iatros" (that is, the one that heals), was highly respected, although at times, as has been the custom ever since, he was blamed and derided. When the Asclepiades spread all over Greece, it was no longer sufficient, as it had been previous to Hippocrates, to transmit the knowledge of medicine merely from father to son; Asclepian schools were founded, and students of these schools were admitted into the profession after having finished their medical school education and after having taken the Hippocratic oath. There were physicians firmly established who visited their patients or received them in their homes; there were also wandering physicians who traveled from town to town in order to practise their profession. Patients not confined to bed were treated. not only in the house of the physician, but also in the iatreion (medical workshop), a large building, generally situated on the main street, with free access of sunlight. Such buildings were given to municipal physicians even as late as the time of The nosocomoi (nurses, nosos, disease, comeo, I take care of) were slaves. Patients able to pay could remain in the iatreia until their final recovery.

The remuneration of physicians originally consisted in presents, but at the time of Hippocrates payment in money was already customary. Physicians received also public praise, the "crown of honor," the freedom of the city, the privilege of eating at the king's table. Physicians employed by the state received a yearly salary, as high as \$2,000 in some instances. Rich people would pay enormous sums for a successful treatment, and a case is recorded in which \$200,000 was paid. The state furnished the means for elaborate iatreia, with a rich equipment, and levied a special tax for the physician of the state; it was sometimes the case in rich cities that the citizens were exempt from all

taxes except for physicians.

A. Rose.

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Anatomy, Descriptive and Surgical. By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. Seventeenth Edition, Thoroughly Revised and Reedited, with Additions, by John Chalmers Da Costa, M. D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, Philadelphia, and Edward Anthony Spitzka, M. D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1,149 Engravings. Philadelphia and New York: Lea & Febiger, 1908. Pp. xxvi-33 to 1,614.

This edition of the late Mr. Gray's work, which has been a favorite with the profession for half a century, is enriched by a thoroughly revised section on the nervous system, by Dr. Edward A. Spitzka, who has done the work exceedingly well. It is also enriched by many added illustrations, especially a number of beautiful cuts from Spalteholz. The nomenclature of the German Anatomical Society is given in conjunction with the old terms, but with a number of deviations, and there are numerous errors in the spelling of anatomical names. These will doubtless be corrected in subsequent printings.

An Alabama Student and Other Biographical Essays. By WILLIAM OSLER, M. D., F. R. S., Regius Professor of Medicine, Oxford; Honorary Professor of Medicine, Johns Hopkins University, Baltimore. New York: Oxford University Press, American Branch; London: Henry Frowde, 1908. Pp. 334.

These collected addresses of Dr. Osler's are above all criticism; they are simply fascinating. In all of them the substratum is biographical, and it is in biography that the author is at his best. The "Alabama student" was Dr. John Y. Bassett, of Huntsville, and the other men around whose lives Dr. Osler weaves his charming essays were Thomas Dover. John Keats, Oliver Wendell Holmes, John Locke, Elisha Bartlett, William Beaumont, Pierre C. A. Louis, William Pepper, Alfred Stillé. Sir Thomas Browne, Hieronymus Fracastorius, and William Harvey. No physician can read the book without a profound realization of the elevating influence of the great men of the profession.

The Air and Ventilation of Subways. By George A. Soper, Ph. D., Member of the American Society of Engineers, etc. First Edition, First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1908. Pp. ix-244.

This volume is the result of studies for two years and a half for the Board of Rapid Transit Railroad Commissioners for the city of New York and the Interborough Rapid Transit Company, the lessees of the subway. Its object is to make available the account of the essential features of the investigation and thus be of service to many who are not trained in sanitary science, but who are interested in knowing the composition of good and bad air and the way in which it should be treated in subways and other inclosed spaces. Much valuable information on the composition of air in cities, apart from subways, is also supplied, and many formulæ and tables

which make the book rather too technical for the average reader. Many diagrams also illustrate the different phases of the subject. The book will be a useful one for reference purposes.

The Physician's Visiting List (Lindsay & Blakiston's) for 1909. Fifty-eighth Year of its Publication. The Dose Table herein has been Revised in Accordance with the New U. S. Pharmacopæia (1905). Philadelphia: P. Blakiston's Son & Co., 1908. (Price, \$1.)

Blakiston's Physician's Visiting List appears for the fifty-eighth time, for the year 1909, and is made up for twenty-five, fifty, seventy-five, and one hundred patients seen daily. Besides this daily visiting list and memoranda, we find the usual practical addenda, such as a table for calculating the time of parturition, the immediate treatment of poisoning, and a dose table in the English and the metric systems, etc.

On Means for the Prolongation of Life. Third and Enlarged Edition of a Lecture Delivered before the Royal College of Physicians on December 3, 1903. By Sir HERMANN WEBER, M. D., F. R. C. P., Consulting Physician to the German Hospital, etc. London: John Bale, Sons, & Danielsson, Ltd., 1908. Pp. viii-214. (Price, 4s, 6d.)

Sir Hermann Weber's original lecture has of course been very much amplified in the form in which it now appears. There is nothing strikingly original in the book, but it presents us with a well arranged collection of wise precepts for the preservation of health.

Atlas der Syphilis und der venerischen Krankheiten mit einem Grundriss der Pathologie und Therapie derselben von Hofrat Professor Dr. Franz Mracek in Wien. Zweite vermehrte und verbesserte Auflage. Mit 81 farbigen Tafeln nach Original-Aquarellen von Maler 'A. Schmittson und 26 schwarzen Abbildungen. München: J. F. Lehmann, 1908. Pp. xii-218.

This atlas was reviewed by us at the time of the appearance of the first edition in 1897. Since then its distinguished author has died. The present edition has been prepared, from material left by the author, by K. H. Schirmer, who was associated with him. Many attempts have been made to represent cutaneous lesions in color. Most of them have been more or less failures. In the one before us the colors are not true to life. They are too lurid. Thus, plate No. 17, of a generalized papular syphilide, might well serve for one of a drug eruption. Plate No. 23, perhaps on account of its number, is peculiarly unlucky, as some of the lesions have escaped color almost entirely. It is well that plate No. 28 is labeled "Pustular Syphilide," as otherwise it would be unrecognizable, and it is scarcely so as it is. No. 37 presents a picture never seen on land or sea. It is so hairy that it might be that of an ape. pictures of the lesions of the female genitals should be used by the Society of Sanitary and Moral Prophylaxis, a society that is doing good work in spite of its peculiar title. They are so frightful that they should act as deterrents. The pictures of the initial lesion and of mucous patches are good, and the black and white illustrations are the best of all. Indeed, the chief value of the atlas is that it is rich in pictures, its one hundred and seven illustrations giving many phases of this protean disease, syphilis.

The second part of the book, two hundred and three pages, is devoted to a treatise on syphilis and

venereal diseases. The text is good, though not exhaustive. Not only are the skin lesions of syphilis described, but also the effects of the contagion on the internal organs, joints, eyes, ears, and nervous system. The Spirochæta pallida is accepted as the probable cause of the disease, and inunctions are commended as the best means for combating it, all things considered.

Diseases of the Spinal Cord. By R. T. WILLIAMSON, M. D. (Lond.), F. R. C. P., Assistant Physician, Royal Infirmary, and Lecturer in Medicine, Victoria University, Manchester. With One Hundred and Eighty-three Illustrations and Seven Plates. London: Henry Frowde and Hodder & Stoughton; New York: Oxford University Proceedings of the Pro sity Press, American Branch, 1908. Pp. xi-432.

This volume represents, the author tells us, his lectures and studies as presented to his students in Manchester during the past fifteen years. They have been carefully revised and edited, and make a very commendable addition to the textbook literature of diseases of the spinal cord. It is more than the conventional textbook, however, and is therefore to be recommended, not only to junior students, but to practitioners and even to professed specialists. To the latter the book will appeal by reason of its scholarly character and the author's unusually skilful mode of presentation.

The general arrangement is largely conventional and anatomical. The opening sections deal with structure, pathological history, and functions. Then follows a full discussion of the symptoms of spinal disease, which is brought well up to date. Methods of examination by electricity, x rays, and spinal puncture are then discussed. Chapter VI deals with the diagnosis and localization of diseases of the cord. Then follow the descriptions of different disease processes. The author arbitrarily divides these into four groups-those with symptoms of

transverse lesion, those with symptoms of atrophic

paralysis, those with spastic paresis, and those with

ataxia-a clinical grouping which, while pedagogically simple, is too much so for the best purposes.

The diseases of the spinal meninges fall outside of the general scheme, as do also the traumatic affections of the cord and the clinical and pathological features of spinal syphilis. From the standpoint of bookmaking the work is specially commendable. Taken all in all, it is a very creditable performance. cert inly one of the best of its kind in English.

Transactions of the American Padiatric Society. Nineteenth Session, Held at the Arlington Hotel, Washington, D. C., May 7, 8, and 9, 1907. Edited by LINNAUS EDFORD LA FETRA, M. D. Volume xix. New York: E. B. Treat & Co., 1908. Pp. 220.

This volume follows in the general make up its predecessors. It contains the usual society notes and the minutes of the nineteenth annual meeting, together with the papers and addresses presented to the society. Among the contributors we find B. K. Rachford, Henry L. K. Shaw, Leon K. Baldauf, Thomas M. Rotch, Ariel W. George, John Howland, Charles H. Dunn, Thomas S. Southworth, Charles G. Kerley, Maynard Ladd, R. G. Freeman, F. Forchheimer, J. P. Crozer Griffith, Frank S. Churchill, S. S. Adams, J. L. Morse, F. Huber, W. P. Northrup, C. G. Jennings, H. M. Rich, C. F. Martin, J. A. C. Tull, J. H. M. Knox, G. N. Acker, and John Ruhräh.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Yearbook of the United States Department of Agricul-Washington: Government Printing Office ture.

1908. Pp. 798.
A Textbook of General Bacteriology. By Edwin O. Jordan, Ph. D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 557. (Price, \$3.)

Taschenbuch der Therapie. Mit besonderer Berücksich-

tigung der Therapie an den berliner, wiener, u.a. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer, Redak-teur der Klinisch-therapeutischen Wochenschrift. Fünfte vermelete und verbesserte Ausgabe. Würzburg: A. Stuber,

The Physician's Visiting List (Lindsay & Blakiston's) for 1909. Fifty-eighth Year of its Publication. The Dose

for 1909. Fifty-eighth Year of its Publication. The Dose Table herein has been revised in accordance with the New U. S. Pharmacopcia (1905). Philadelphia: P. Blakiston's Son & Co., 1908. (Price, \$1.)
Fettlearneithung. Zugleich ein Vorschlag zur Verbesserung der Oelkur. Von Dr. med. Georg Köster, a.o. Professor an der Universität Leipzig. Mit 6 Tafeln. Leipzig: Dr. Werner Klinkhardt, 1908. Pp. iv-98.
General Pathology. By Dr. Ernst Ziegler, Professor of Pathological Anatomy and of General Pathology in the University of Freiburg in Breisgau. Translated from the

Pathological Anatomy and of General Pathology in the University of Freiburg in Breisgau. Translated from the Eleventh Revised German Edition (Gustav Fischer, Jena, 1905). Edited and Brought up to Date by Aldred Scott Warthin, Ph. D., M. D., Professor of Pathology and Director of the Pathological Laboratory in the University of Michigan, Ann Arbor, Michigan. With 604 Illustrations in Black and in Colors. New York: William Wood & Co., 1908. Pp. xx-781. (Price, \$5,50.) Applied Surgical Anatomy. Regionally Presented. For the Use of Students and Practitioners of Medicine. By George Woolsey, A. B., M. D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College, Surgeon to Bellevue Hospital, etc. Second Edition, Enarged and Thoroughly Revised. With Two Hundred Illustrations, Including Fifty-nine Plates, Mostly Colored. New York and Philadelphia: Lea & Febiger, 1908. Pp. viii-601. (Price, \$4,50.)

New York and Philadelphia: Lea & Febiger, 1908. Pp. viii-foot. (Price, \$4,50.)
Atlas of Clinical Surgery. With Special Reference to Diagnosis and Treatment for Practitioners and Students. By Dr. Ph. Bockenheimer, Professor of Surgery in the University of Berlin. English Adaptation by C. F. Marshall, M. D., F. R. C. S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, London. With One Hundred and Fifty Colored Figures, from Models by F. Kolbow in the Pathoplastic Institute of Berlin. In Three Volumes. New York: Rebman Company, 1908. Pp. 479. Medical Inspection of Schools. By Luther Halsey Guick, M. D., Director of Physical Training, New York Public Schools, and Leonard P. Ayres, General Superintendent of Schools of Puerto Rico, 1906-1908. New York: Charities Publication Committee, acting for the Russell Sage Foundation, 1908. Pp. 276.

Sage Foundation, 1908. Pp. 276.

New Remedies.

Sulfoid is the trade name of a colloidal sulphur for which a German patent has been issued. It is a grayish white powder, which dissolves to form a milky white solution, which, seen through transmitted light, is iridescent blue. The solutions should be freshly prepared, as they deposit sulphur on Sulfoid is insoluble in alcohol, etheralcohol, acetone, and concentrated solution of sodium chloride, but soluble in physiological salt solution. It contains about 80 per cent. of sulphur and 20 per cent. of albumin. With fats, lanolin, petrolatum, wax, and soap it mixes readily to form ointments and soaps, which exhibit the sulphur in an extraordinarily fine state of suspension.

Sullacetin is a potassium-sodium compound of pyrocatechinmonoacetic acid and guaiacolsulphonic acid, which forms a white, odorless, slightly bitter salt. It is used in tuberculosis, being administered in powder or tablet form in 71/2 grain doses.

Suprarenine (synthetic) is made by condensing catechol, with chloracetic acid to form chloroacetylcatechol, which is then treated with methylamine. and the resulting methylaminoacetylcatechol is reduced to dihydroxyphenylmethylaminomethylcarbinol, or synthetical suprarenine, which, in the form of the hydrochloride, is said to be indistinguishable in physiological action from the natural alkaloid of the suprarenal gland.

Thyreotheobromine Pills, used in the treatment of obesity, contain in each dose thyreoid gland substance 3/4 grain, and theobromine sodium salicylate, in combination with quinine and podophyllin.

Tuberculin Ointment is composed of equal parts of tuberculin-old and anhydrous wool fat, the tuberculin being incorporated with the wool fat, heated to 68° to 154° F. Kept on ice the ointment will retain its activity for months. It is used to determine the existence of tuberculosis by inunction, 10 drachms being sufficient for 100 test applications.

Tuberculin Suppositories.—A new method of administering tuberculin is described by A. Lissauer in the Deutsche medizinische Wochenschrift. No. 33, 1907. The tuberculin is given by the rectum by the aid of hollow suppositories, in which the drug is placed, either alone or mixed with petrolatum, olive oil, or a 5 per cent. carbolic acid solution. The top is sealed either by heating or by painting over with a mixture of 3 parts beef tallow and I part lard.

Velledol is the name of one of the new mistletoe derivatives which have recently been introduced into medicine. It is said to be the active principle of viscum album, and is given internally by the mouth in doses of 0.5 gramme, and hypodermically in doses of 0.5 gramme, and hypodermically in doses of 0.001 gramme, several times a day. It is said to be useful in relieving menstrual disorders and in checking post partum hæmorrhages.

Zinc Boropicrate (Chrysl).—Picric acid, 349; boric acid, 62; water, about 400; are heated together, and zinc oxide, 82, is added to the solution. The resulting yellow powder is introduced as a sedative or drying agent for use in the treatment of skin affections and for ophthalmic application.

Official Melus.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and playue have been reported to the surgeon general. United States Public Health and Marine Hospital Service, during the week ending November 13, 1908: Smallpox United States

| Places. | Date. | Cases. Deaths. |
|-----------------------|--------------|----------------|
| California-Berkeley | . Oct. 10 17 | . 1 |
| Indiana-Fort Wayne | . Oct. 17 24 | . 1 |
| Indiana-La Fayette | .Oct. 19-20 | . 1 |
| Kentucky-Lawrenceburg | .Oct. 8-31 | . 8 . |
| Kentucky-Lexington | . Oct. 18 24 | . I |

| Places. | Date. | Cases. | Deaths. |
|---|-------------------------------|---------|-----------|
| MissouriCarterville | Nov. 2 | 6 | |
| Missouri-St. Louis | Oct. 18-21 | 5 | |
| North Dakota-Bismark | . Mar. 31-Sept. 30 | 38 | |
| Ohio-Conneaut town and rown | | | |
| ship | . Sept. 1-30 | 6 | |
| Tennessee-Coulterville | . Sept. 9. Nov. 4 | 30 | |
| Tennessee-Dowelltown | . Sept. 16-Nov. 3 | | |
| Wisconsin-La Crosse | | 3 | |
| | x—Insular. | | |
| Philippine Islands-Manila | . Sept. 12-19 | 2 | 4 |
| Smallpo: | v-Forcign. | | |
| Arabia—Aden | . Sept. 20-Oct. 12 | | 22 |
| Brazil-Pernambuco | . Sept 1 15 | | 45 |
| Brazil-Rio de Janeiro | | 1,270 | 587 |
| Brazil-Santos | Sept. 6-13 | | II |
| Canada—Halifax | | | |
| Egyj t-Cairo | | | |
| India-Bombay | | | 2 |
| India—Bombay | | | 2 |
| India-Rangoon | | | 1 |
| Indo-China—Saigon | | | 3 |
| Italy—General. Italy—Napies | Oct. 5-18 | | |
| Java—Batavia | . Oct. 11-18 . Sept. 12-19 | | |
| Norway—Christiania | | | |
| Russia Victory | Sout 26-Oct 10 | 2. | 12 |
| Russia—Moscow | Sept to-of- | | |
| Spain—Vigo | .Oct 10-1" | | |
| Turkey-Constantinople | . Oct. 11-18 | | 10 |
| Turkey-Smyrna | . July 7-Oct. 6 | | 16 |
| Brazil-Pernambuco | . Sept. 1-15 | | I |
| Mexico-Merida | . Oct. 16-24 | . Stil | 1 present |
| Cholero | -Insular. | | |
| Philippine Islands-Manila | Sept 12-10 | . 1.1.1 | 96 |
| Philippine Islands-Provinces | Sept. 12-19 | 002 | 624 |
| | Foreign. | | |
| | | | |
| India-Bombay | | | 1 |
| India— Wadras | | | 140 |
| India—Rangoon Indo-China—Saigon | . Sept. 19-20 | | 6 |
| Tapan—Maii | Sept 2-26 | . 61 | 31 |
| Japan Wakamaten | Sent 8-15 | | 3 |
| Japan—Moji Japan—Wakamatsu Russia—General | To Oct to | | 10,252 |
| Russia-Moscow | . Sept. 26-Oct. 10 | 3 | 2 |
| Russia - St. Petersburg | | | 12 |
| Straits Settlements-Singapore | . Sept. 12-19 | 2 | |
| Plague | Foreign, | | |
| Brazil-Rio de Janeiro | | | 7 |
| Great Britain-Liverpool | V. 13-2, | | 1 |
| Great Binam-Liverpoor | Imported | 3 | |
| India-Bombay | | | 73 |
| India-Rangoon | . Sept. 19-26 | | 3 |
| Indo-Clana-Saigon | . Sept. 12-19 | 14 | 29 |
| | | | |
| Army Intelligence: | | | |

Official list of changes in the stations and duties of officers serving in the medical corps of the United States Army for the week ending November 14, 1908:

FIFE, J. D., Captain, Medical Corps. Sailed on the Sheri-dan, on November 5, 1908, from San Francisco, Cal., for Manila, P. I. FREELAND, H. L., First Lieutenant, Medical Reserve Corps.

Granted leave of absence for twenty days.

JACKSON, T. W., First Lieutenant, Medical Reserve Corps.

Sailed on the Sheridan, on November 5, 1908, from
San Francisco, Cal., for Manila, P. I., returning from

KILDOURNE, E. D., Captain, Medical Corps. Sailed on the Sheridan, on November 5, 1908, from San Francisco, Cal., for Manila, P. I.
KULP, J. S., Major, Medical Corps. Ordered to Denver,

Colo, for examination by an Army retiring board.
LEHARDY, J. C., First Lieutenant, Medical Reserve Corps.
Relieved from duty at Fort Lawton, Wash., and ordered to duty in the Philippines Division, sailing on

dered to duty in the Philippines Division, sailing on December 5, 1008, from San Francisco, Cal.

LINCOLN, H. F., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Sam Houston, Tex., and ordered to duty in the Philippines Division, sailing on December 5, 1008, from San Francisco, Cal.

McCallum, F. M., First Lieutenant, Medical Reserve Corps. Having been found fit for duty, ordered to return to Honolulu, H. T., on first available transport.

MOUNT, J. R., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month, about December 15, 1008.

ber 15, 1908.

RAFFERTY, OGDEN, Major, Medical Corps. Ordered to Fort
Bayard, New Mexico, for treatment at the Army Gen-

(ral Hospital at that place.

Rokhill, E. P., Captain, Medical Corps. Order for examination by an Army retiring board revoked.

SNYDER, H. M., Lieutenant, Medical Corps. Granted leave

STEPHENSON, A. V., First Lieutenant, Medical Reserve Corps. Ordered to proceed from San Francisco, Cal.,

to his home and report for further orders.

STEPHENSON, WM., Lieutenant Colonel, Medical Corps.
Sailed on the Sheridan, November 5, 1908, from San

Francisco, Cal., for Manila, P. I.
Weed, F. W., Captain, Medical Corps. Relieved from duty
at Plattsburg Barracks, N. Y., and ordered to Fort

Totten, N. Y., for duty.

Zinke, S. G., Captain, Medical Corps. Honorably discharged from the service of the United States with one year's pay, under the provisions of the Act of April 23, 1908

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the medical corps of the United States Navy for the week ending November 14, 1908:

DONELSON, M., Assistant Surgeon. Detached from duty with the Third Torpedo Flotilla and ordered to the

HOEN, W. S., Passed Assistant Surgeon. Discharged from treatment at the Naval Hospital, New York, N. Y., and ordered to the Naval Recruiting Station, Oklahoma City, Okla. LOWNDES, C. H. T., Surgeon. Detached from the South

Dakota and ordered home.

SHIPP, E. M., Surgeon Detached from the Pennsylvania

and ordered home.

SHORT, W. H., Assistant Surgeon. Detached from the
Naval Recruiting Station, Oklahoma City. Okla., and
ordered to the MacDonough for duty with the Third Torpedo Flotilla.

Births, Marriages, and Deaths.

· Married.

Doster—Wilson.—In Philadelphia, on Wednesday, November 11th, Dr. W. Wade Doster, of St. John's, Kansas, and Miss Helen Wilson.

Morris—Mitchell.—In New York, on Wednesday, November 11th, Dr. Elliston J. Morris, of Philadelphia, and Miss Josephine Clara Mitchell.

AMES.—In Wakefield, Massachusetts, on Thursday, November 12th, Dr. Azel Ames, aged sixty-three years. BEAN.-In Rutland, Ohio, on Friday, November 6th, Dr.

George Bean.

BOYNTON.—In San Antonio, Texas, on Saturday, October 31st, Dr. S. W. Boynton, aged seventy-three years. Cook.—In Fairmont, West Virginia, on Monday, November 9th, Dr. John R. Cook.

Cooper.-In Amesbury, Massachusetts, on Tuesday, No-

vember 10th, Dr. Herman Cooper, aged forty-nine years.
Covert.—In Atlantic City, New Jersey, on Saturday, November 7th, Dr. N. B. Covert, of Geneva, New York, aged

sixty-eight years.

Coxe.—In Dresden, Germany, on Saturday, November 7th, Dr. Davies Coxe, of New York, aged forty-six years. FRENZ.-In Saginaw, Michigan, on Saturday, November

7th, Dr. Engelbert Frenz, aged sixty-eight years GATES.-In Colorado Springs, Colorado, on Monday, No-

vember oth, Dr. Howard E. Gates, aged sixty-nine years.
Graffon.—In Los Angeles, California, on Monday, November oth, Dr. W. H. Grafton, aged eighty-two years.
HARRIS.—In Bloomington, Indiana, on Friday, Novem-

HARRIS.—In Biodimington, Indiana, on Friday, November 6th, Dr. John Harris.

HENDRIX.—In Crofton, Kentucky, on Monday, November 9th, Dr. A. A. Hendrix, aged seventy-eight years.

PARENT.—In San Francisco, California, on Thursay, October 29th, Dr. Charles Edwin Parent, aged forty-five years. RANDOLPH.—In Kansas City, Missouri, on Sunday, November 8th, Dr. Arthur G. Randolph, aged thirty-four, years.

Simpson.—In St. Paul, Minnesota, on Saturday, November 8th, Dr. Fred Wright Simpson, aged thirty-four

SMITH.—In Newark, New Jersey, on Tuesday, November 10th, Dr. Daniel W. Smith, aged seventy-five years.

New York Medical Journal

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WHOLE NO. 1565.

Original Communications.

THE RED CROSS IN THE ANTITUBERCULOSIS WAR.

A Plea for Centributions through a Christmas Stamp.

By S. Adolphus Knopf, M. D., New York,

Professer of Phthisiotherapy at the New York Postgraduate Medical School and Hospital; Associate Director of the Chine iss Fullmonary Diseases of the Health Department; Attending Physician to the Riverside Sanatorium for Consumptives of the City of New York, etc.



To give to the medical profession and through it to the public at large an idea of what is being done in Germany by the Red Cross Society in the combat of tuberculosis, what is being done and what also might be done in this country by the same organization, and to arouse, if

possible, a greater enthusiasm and support on the part of the laity as well as the medical profession, I will give in what follows the substance of two recent addresses on the subject. One I delivered in Brooklyn on October 27th, at the Ridge Club, before the New Utrecht Red Cross; the other, on October 28th, at the home of the Honorable George B. McClellan, mayor of New York, before the New York County Subdivision of the American National Red Cross. The suggestions offered received the cordial approval and hearty support of both audiences.

One of the most interesting contributions which were presented at the International Congress on Tuberculosis in Washington, which has just come to a close, was a book of nearly 250 pages, prepared by B. von dem Knesebeck, the president, and Professor Pannwitz, the secretary of the German Red Cross Society. The work was entitled Das Deutsche Rothe Kreuz und die Tuberkulose Bekümpfung (The German Red Cross and the Fight against Tuberculosis). In this interesting volume there are enumerated, illustrated, and described:

1. Sanatoria established and conducted by the German Red Cross Society, of which the most important ones are the one at Grabowsee, the sanatorium for women called *Vogelsang*, near Magdeburg, and the *Sophie Sanatorium*, near Berka, on the Ulm, in Saxony-Weimar.

2. So called research stations and societies for the purpose of coming to the assistance of such families as are deprived of their bread winners because of the latter's sojourn in a sanatorium. They are the Association against Tuberculosis of the Patriotic Women of Charlottenburg, and the Association against Tuberculosis of the German Sisters of Charity.

3. Homes for tuberculous convalescents—adults and children—at Berlin and Frankfort on the Main.

4. Sanatoria for tuberculous children—the Vicitoria Luise Kinder Heilstätte at Hohenlychen, and the Cecilienheim at the same place.

5. The agricultural colony for the tuberculous, known as the Königin Louise Andenken.

6. The vacation colonies, also located at Hohen-

lychen.
7. A school for training nurses for the tuber-

culous.

8. The seaside home at Swinemunde for the tuberculous wives and children of noncommissioned

officers of the German army.

9. Gardens or horticultural colonies for tuberculous workers.

10. The bureau which has for its purpose to procure work for the patients leaving the sanatorium,

All these institutions, societies, and bureaus are a part of the work which the Red Cross of Germany is doing. The Woman's Branch alone of the Red Cross has 400,000 members, its funds and the value of its property amount to over \$5,000,000, so you can perceive the importance of the work the Red Cross can do in Germany in time of peace as well as in time of war.

If I am right, the Red Cross was founded at Geneva in the year 1863. It owes its origin to the feeling of sympathy awakened throughout Europe by the sufferings occasioned by the Crimean war. The object of the Red Cross Society is in the main to mitigate the evils inseparable from war. All the civilized nations of the world have branches of this truly international association.

Ever since its establishment, forty-five years ago, this unique and humane society has done glorious work in all the wars which civilized nations have chosen to wage. With the advance of higher humanitarian conceptions and thanks to the enthusiastic labors of high minded men and women in all countries, wars are becoming less frequent. But we have not yet advanced far enough to say with certainty there shall be no more war; and to lessen the horrors of the battle field when war does come, the Red Cross societies all over the world continue their existence and hold themselves in readiness.

Some of them—as, for example, the before mentioned German Red Cross Society, and, of late, some branches in our own country—have in the meantime directed their energies toward an enemy far more terrible, far more murderous, far more costly than the mightiest army of the mightiest

nation. If I say far more murderous I say so advisedly, for can you conceive of an enemy which would slay every year, and year after year, more than 100,000 inhabitants in the United States alone? Yet this enemy has existed within our midst for years, exists and will continue to exist unless we begin to fight him more vigorously than we have done heretofore.

That great, immortal poet and physician, Oliver Wendell Holmes, has called this enemy "the great white plague," but it is also known to us all by that significant word consumption. This latter word has two meanings. The disease bearing this name consumes not only the vital forces of man and leads him to an early grave, but it also, in most instances, consumes the material prosperities of the individuals

of families afflicted.

Professor Victor C. Vaughan, of Ann Arbor, a careful observer, told us at the recent Tuberculosis Congress at Washington that from 200,000 to 250,000 citizens of this country die annually of tuberculosis. Taking now only the lower estimate, we must in our calculation admit that two thirds to three fourths of these, our fellow countrymen, die between the ages of eighteen and forty-five, that is to say, at the time of life when the earning capacity is greatest. When we now, with Darlington, esti-mate the value of a single individual during the prime of his life to be only \$1,500, and taking again the lower estimate of two thirds, and not the higher estimate of three fourths, the economic loss which accrues to the United States through this single disease is no less than \$150,000,000 annually. Add to this the anguish and sorrow, the tears of mothers, orphans, and widows, and then you will agree with me when I say that tuberculosis is the most murderous, most costly affliction of all the enemies of the human race.

Another interesting and more startling calculation of the cost of tuberculosis in the United States and its reduction was presented at the International Congress on Tuberculosis in Washington by Professor Irving Fisher. He estimated the death rate from tuberculosis in all its forms in the United States at 164 per 100,000 of population, and the number of deaths in 1906 as 138,000, and he summarized as follows: "At this rate, of those now living in the United States 5,000,000 people will die of tuber-The average age at death for males is 37.6 years; for females 33.4 years. The expectation of life lost (though estimated on a specially high mortality rate) is at least twenty-four years, of which at least seventeen fall in the working period. The average period of disability preceding death from tuberculosis exceeds three years, of which the latter half is a period of total disability."

The money cost of tuberculosis, including capitalized earning power lost by death, exceeds \$8,000 each death. The total cost in the United States exceeds \$1,100,000,000 each year. Of this cost about two fifths, or over \$4,40,000,000, falls on others than the consumptive. An effort to reduce the mortality by one fourth would be worth, if necessary, an investment of \$5,500,000,000.

Yet the experience of the past twenty-five years has demonstrated the feasibility of the successful

combat of this enemy. Thanks to the epoch making discovery of the great German scientist, Robert Koch, we know the very nature of the disease, its microbic origin, and the means of preventing its spread. Thanks to the labors of such men as Brehmer and Dettweiler in Germany, and Trudeau and Biggs in the United States, we have learned how to treat and control, or, in other words, successfully fight this enemy. By education and sanitary control we have succeeded in a number of localities to prevent the spread of the disease. By the establishment of sanatoria, special hospitals, tuberculosis dispensaries, day camps, etc., we have succeeded in successfully treating and isolating thousands of patients. With this knowledge and experience before us I am free to confess that it has been a great surprise and disappointment to me that the Red Cross Society of this country has as yet done so little to imitate its German sister's magnificent antituberculosis crusade. I sincerely hope and pray that this great society will awaken to its oppor-

The cited enumeration of the activities, the membership, and wealth of the German Red Cross must have shown the vast field of usefulness to which our own glorious society could put its energy in

time of peace.

We have already the Washington Day Camp of the District of Columbia branch of the Red Cross. There is the Red Cross Day Camp of the New York State branch at Schenectady. The Albany subdivision has a capital of \$1,500, and plans for a camp are in formation. At this moment they are preparing a magnificent day camp on the roof of the Vanderbilt Clinic of the city of New York, and Dr. Samuel W. Lambert, the dean of the faculty of the Medical Department of Columbia University, informs me that it will be ready to receive patients on December 1st. The Buffalo subdivision of the Red Cross is helping in the maintenance of Dr. Pryor's Tuberculosis Day Camp, and the Delaware Red Cross branch is aiding the State's antituberculosis society in its dispensary work.

If you should ask me in what direction the American Red Cross could do most in the combat of tuberculosis at this time, I would say: First, it should join with the already existing local antituberculosis agencies, and by cooperating with them, learn of what there is the greatest local need. In some instances there may be urgent need of a hospital to take care of and isolate the seemingly hopeless cases; in others, a sanatorium for the early and curable cases; again, tuberculosis dispensaries may be needed to take care of the ambulant tuberculous patients; a day camp or perhaps a night camp may

be of urgent necessity.

To the best of my knowledge, the credit of the night camp idea belongs to Dr. William Charles White, medical director of the Tuberculosis League in Pittsburgh, who first proposed it to the profession. Of these latter institutions we have as yet but very few in this country; still it is my firm conviction that night camps do as much good as day camps. Many a tuberculous patient is obliged to work for his own maintenance or the support of his family. Upon the advice of his physician he may have changed his indoor occupation to an outdoor occupation, yet what good does it do him if he is obliged

to sleep in an unsanitary tenement or lodging house? And to what danger is not his family exposed when they are numerous and obliged to live

in close proximity with the sufferer?

I am convinced that the greatest number of infections originate in the sleeping rooms of our consumptive tenement house dwellers and at night time. It is then that the consumptive member of the family unconsciously expels the bacilliferous droplets during the cough which renders the atmosphere infectious. Fearing to have the other members of the family feel uncomfortable or cold, he will consent to have the windows closed at night, or close them himself in spite of the doctor's injunction to keep them open.

Through the night camp the family of the consumptive will be protected, and he himself assured of a good bed in a well aired room or shack.

When compared with other countries we are lacking most sadly in hospitals for tuberculous and scrofulous children. We physicians have felt for vears the need of seaside sanatoria, where the results of the treatment of tuberculous children are so splendid. In Charities of October 12, 1901, I suggested as a McKinley memorial a seaside sanatorium, with a pavilion for every State, for the treatment of children suffering from tuberculous and scrofulous diseases or predisposed to consumption. thinking that we could not possibly better honor the martyr President than by erecting to his memory life saving stations for children. There was some response to my appeal, but it has been left to the American National Red Cross to bring this matter before the public in a most practical way. After the example of the Delaware Red Cross branch, the American National Red Cross has decided to issue a beautiful stamp especially designed by Howard Pyle, the famous artist. It bears a wreath of holly, "Merry Christmas" and "Happy New Year." It will be on sale at the Red Cross headquarters in each State, and it probably can also be obtained from local dealers in almost every town after the 1st of November, 1908. It will be sold in sheets, like an ordinary stamp, and also in small books, nine for 10 cents, twenty-four for 25 cents, forty-eight for 50 cents, like the government stamps.

The Christmas stamp is not good for postage. It will not carry any kind of mail, but any kind of mail will carry it. Each one who uses this holiday stamp will help to "stamp out the white plague. It has been printed this time by the million to supply the demand, so any quantity can be ordered, but cash must be sent with each order, this rule having been followed last year with success. Nobody makes any profit on the Christmas stamp, but it was found last Christmas that every one was glad to help it along on these terms. For an order of one stamp or a thousand the price is the same, except in the little books, which add the cost of the binding, just as the government does. The proceeds in each State go toward tuberculosis work in that State, and particularly to tuberculosis work among children.

Thus, I believe my dream of 1901, of a tuberculosis sanatorium, with a pavilion for every State, may yet become true. Whether it will be named after McKinley or not may be immaterial to many, nevertheless, I believe to his many admirers this

might perhaps be an incentive to help. May I therefore be permitted to say in conclusion what I said just seven years ago, for the situation has not yet changed?

To realize the urgent need of seaside or inland sanatoria for children one must have visited the crowded tenement districts of our great cities and seen the large number of scrofulous and tuberculous children there, and the many who bear on their pale little faces the stamp of candidates for consumption

(pulmonary tuberculosis).

There are already laws in some States prohibiting the tuberculous child from attending public school; but as far as I know none of these States have provided other places where children suffering, it is true, from a chronic, communicable, but also curable disease can receive the education to which they are entitled, much less where they could have a chance of being cured from their affliction. The results obtained in some of our American sanatoria for the treatment of tuberculous adults are as good as any of those obtained in European institutions. The preventive measures inaugurated by our New York Board of Health have not only served as models for other American cities, but have been imitated by many European municipalities, and found to be the most practical and efficacious. We have already a number of sanatoria for the treatment of the consumptive poor adults, though by no means enough. However, in nearly every State of the Union the question of providing institutions for adult tuberculous patients with little or no means is now being agitated. Only for the countless little ones suffering from the same or other tuberculous diseases there is nothing done.

Our good McKinley had two children and these he lost. He dearly loved little children, and the creation of a sanatorium for the treatment and prevention of a disease with which so many American children are afflicted would surely be as fitting a memorial to this great man and lover of children as the monument of stone erected in Dayton. "McKinley Sanatorium for the Treatment and Prevention of Tuberculous Diseases in Children" should be the name of the institution suggested.

The meaning of the name William McKinley, written on the portals of these houses of hope for many a suffering mother's heart will be made clear to these little inmates by their teachers and grown

up friends.

In letting the children of parents of means who are happy and well bring their mites toward a movement of this kind, a lesson of charity and patriotism may be taught to them as well. There will be found in every community responsible and patriotic citizens to take this matter in hand and bring it to a successful issue. Let each State contribute enough to have its own pavilion to which to send its children. Let the Atlantic and Pacific coasts be dotted with such institutions, one or two pavilions for each State, according to its needs. Let good schools be attached to each sanatorium, so that the intellectual development of the children may not suffer.

The above described ingenious method of a Christmas stamp issued by the Red Cross will enable the poorest child to contribute toward the work. I believe it will appeal to poor and rich alike. To

cure the child of to-day means to save the community the expense of providing for the consump-

tive invalid of to-morrow.

While I believe that children's sanatoria are one of our most urgent needs, I by no means wish to underestimate the value of other means tending toward the eradication of tuberculosis as a disease of the masses. The decision of the Red Cross directors that the proceeds from the sale of Christmas stamps in each State shall go toward the tuberculosis work in that State is a most wise provision.

The National Red Cross brings this Christmas stamp to the whole nation this year. If each American man, woman and child buys one eighty million will be sold, and tuberculosis work from Maine to California will be reinforced and urged forward. The Red Cross is already an organized body; it has among its members the noblest, best and most patriotic of men and women. Surely, with such material, and the resources that are at its disposal, the Red Cross of America should become a mighty factor in the combat of tuberculosis and the eradication of the great white plague.

May the symbol of the Red Cross, which is international, join the double cross of the International Association for the Combat of Tuberculosis, and by their combined efforts help to subdue the greatest

enemy of human kind.

16 WEST NINETY-FIFTH STREET.

THE INTERNATIONAL CLASSIFICATION AS APPLIED TO MORBIDITY RETURNS.*

By Major Charles F. Mason, Medical Corps, U. S. Army, Washington, D. C.

Until 1805 the classification of diseases used by the Medical Department of the Army was based on that of the College of Physicians of England. In that year a new classification, devised by the surgeon general of the army, was adopted and used until 1904, when the International Classification of Causes of Death was adopted and has been in use ever since.

In his annual report for 1904 the surgeon general published the new classification, and said: "The old nomenclature was a thoroughly scientific one, but was not comparable with the International Classification of Causes of Death, which may now be properly regarded as the general system of the country, it having been adopted by the Census Office, by all the registration States, and by almost all of the registration cities for their local statistics.

"In the interests of uniformity, therefore, beginning with this year, army statistics will henceforth be based on the international classification; however, as morbidity as well as mortality statistics are compiled for the army, and as many diseases are encountered in the tropics which naturally are not classified separately under the international system; it has been found necessary to expand the detailed form of the census to meet army requirements."

In the Manual for the Medical Department, which is the official guide for medical officers, par.

427, are these instructions in regard to the use of the new classification for purposes of nomenclature: "Medical officers in recording the causes of admission to sick report will make use of the nomenclature given in paragraph 428 in all cases for which a specific title is provided. Experience has shown that it includes most of the causes of disability likely to occur in army practice. In recording cases for which a title is not specially provided, as, for instance, those which in a consolidation of the statistics would be tabulated under Mixed Infections and Other Dysenteries, or Other Epidemic Diseases, etc., such terms will be used as will briefly and accurately describe the disease or injury, while conforming as far as possible to the nomenclature generally accepted by the profession. Medical officers will report in this way also when the cases are to be consolidated on the classified list under a general term, as in certain of the diseases of the skin.

"(a) The organ or part affected should be specified when the name of the morbid condition fails to indicate it, as in paralysis, aneurysm, ulcer, herpes, etc., as also in inflammations, as adenitis, osteitis, arthritis, synovitis, etc., and in local injuries, as abrasions, burns, contusions, disloca-

tions, etc.

"(b) The surgical characteristics of wounds, fractures, hernia, etc., should be stated, and in all cases of poisoning the name of the poison should be given."

Since that time the classification has been modified slightly in detail from time to time, and the

latest form is shown in the table.

Of course army statistics deal only with adult males, so that all the diseases peculiar to women and children are omitted. Other titles omitted are scrofula, dropsy, and amputations, terms which are

not accepted as a diagnosis.

The following titles have been changed as indicated because the original terms are not accepted as diagnoses by this office: (4) Intermittent fever and malarial cacheria to malarial fevers; (9) diphtheria and croup to diphtheria: (22) malignant pustule to anthrax; (30) Potts disease; (31) cold abscess, abscess by congestion, and (32) white swelling consolidated as tuberculosis of the bones and joints; (120) Bright's disease to chronic nephritis.

Epidemic cerebrospinal meningitis (61) has been taken out of Class II, diseases of the nervous system, and placed in Class I, general diseases.

Inasmuch as the classification is used by the army for morbidity as well as mortality statistics, it has been necessary to considerably expand the detailed classification, but this has been done in such a way that the original international units can always be reconstituted; the number of titles has been about doubled and includes a good many tropical and other diseases which do not even appear in the index. Some of the titles have been duplicated, others subdivided; two series of numbers are used, those of the detailed international classification, and another consecutive series for each of the duplications or subdivisions.

Though of course some difficulties have been met with in the use of the classification for morbidity returns, on the whole it has proved its adaptability for such purposes in a very satisfactory manner.

^{&#}x27;Rear heavier the American Public Health As ociation at the meeting held in Winnipeg, Canada, August 25 to 28, 1908.

I.-GENERAL DISEASES.

To adapt the classification for morbidity uses I would suggest the changes shown in the accompanying list; these changes, except most of the duplications and subdivisions, are also suggested for

| | 1 2 | Typhoid fever. Exanthematic typhus. Relapsing fever. | 1 2 | | | 76 | Scurvy. Diabetes. | 49 50 | | 137 | Pericarditis. 778 |
|-----------|----------------|---|----------|--------------------|----------|----------|--|----------|-----------|------------|---|
| | 3 | Relapsing fever. | 3 | | | 78 | Exophthalmic goitee. | 51 | | 139 | Organic diseases of the heart. 79 |
| | , | Malarial fevers. Quartan, | 1 | - | . 7 | 79 80 | Addison's disease, Leuchæmia. | 52 | | 140 | Angina pectoris. 80 |
| | 5 | Tertian. | 1 | - | DIVERGIS | 81 | Ansenia | 5.4 | | 141 | |
| | 6 | Æstivoautumnal. Malarial cachexia and unde- | 4 | 7 | = | 83 | | 55 | > | 143 | Embolism and thrombosis. 82 |
| | - | terminated infection. | 1 | | | 34 | Delirium tremens. | 56 | Ž. | | Varicocele. 83 |
| | 10 | Hæmoglobinuric fever. Smallpox. | 4 | - | Cirni | 35 | | 56 | STE | 145 | Hæmorrhoids. 83 |
| | 12 | Measles. Scarlet fever. | 6 | ANN STATE TANABASE | 3 | 87 | Other chrimic poisonings (20 cupational). | 57 | 20 | 147 | Filleditis. 83 |
| | 13 | Scarlet fever. Whooping cough. | 7 | 2 | 2 | | | | > | | Adenitis nonvenereal 9. |
| | 15 | Diphtheria. | 9 | - | Olling | 80 | Drug habit. Narcotic poisonings, chronic. | 59 | 25 | 150 | Lymphangeitis, nonvenereal. 84 |
| | 16 17 | Influenza. Miliary fever | 10 | | - | . 90 | Other chronic poisonings. | 59 59 | CULATORY | 151 | Other diseases of the lum. |
| 4 | 1.8 | Miliary fever. Asiatic cholera. Cholera nostras. | 1.2 | - | () | - | | | | _ | phatic system. 84 |
| SV | 19 | Dysentery. | 13 | | | | TOTAL FOR OTHER GENERAL DIS- EASES. | 15 | 5 | 153 | Hæmorrhages. 85 |
| I)ISRASPS | 20 | Amœbic. Bacillary. | 1.4 | | _ | | | | CIR | 154 | Filariasis. 80 |
| | | Bacillary. Mixed infections and other | 1.4 | | | | TOTAL (carried forward). | | 3 | 155 | 1. Lymphatic varix. 86 2. Lymph scrotum. 86 3. Chyluria. 86 4. Chylocele. 86 |
| MIG | | dysenteries. | 14 | | | | | | THE | 157 | 4. Chylocele. 86 |
| EPIDEMIC | 23 | Bubonic plague. Yellow fever. | 15 | | | | Toral (brought forward). | | | 158 | 5. Lymphangeitis and elephan- toid fever, 86 |
| G. | | .enrosy. | 17 | | | - | Torke obrought forward. | | OF | 159 | 6. Elephantiasis. 86 |
| (1) | 26 | Erysipelas. Cerebrospinal meningitis, epi- | 13 | | | 91 | Encephalitis. | 60 | S | 160 | Trypanosomiasis. 86 Bilharziosis. 85 |
| • | | demic. | 91 | | | 92 | Meningitis, cerebral. | 0.1 | SE | 101 | Endemic hæmaturia (schisto- soma hæmaturia). |
| | 28 | Beriberi. Dengue. | 19 | | | 93 | | 61 | EASE | | Rectal bilharziosis (schisto- |
| | 39 | Mumps. | 19 | | | 94 | Other diseases of the spinal | 62 | DISI | 162 | |
| | 31 | Rubella. Varicella. | 61 | | · · | 95 | cord. Cerebral congestion and ha- | 6.3 | 7 | 163 | Other parasitic diseases of |
| | 33 | Vaccinia. | 19 | J. | SYSTEM | | morrhage | 0.1 | Ë | 164 | Functional disease of the |
| | 34 | Kala azar. Malta fever. | 19 | SENSE | 25.0 | 93 | Softening of the brain. Paralysis, without specified | 65 | _ | 165 | heart. Other diseases of the circu- |
| | 36 | Acute infectious jaundice (Weil's disease). Yaws (Frambesia). | 10 | | , | | cause. | 66 | | 203 | latory system. 86 |
| | 37 | Yaws (Frambesia). | 19 | 7 | - 5 | 99 | General paralysis. | 67 68 | | | |
| 5 | 39 | Epidemic dropsy. Other epidemic diseases. | 19 | Ę | Z | 101 | Hypochondriasis. | 68 | | | TOTAL FOR THE CIRCULATORY SYSTEM. |
| C. | | | - | SPECIAL | | 102 | Melancholia. Nostalgia. | 68 68 | | 166 | Comme |
| - SE | 1 | OTAL FOR EPIDEMIC DISEASES. | I 2 | | 1 H è | 104 | Epilepsy. | 69 | ٠. | 167 | Coryza. 87 Chronic nasal catarrh. 87 |
| | 40 | Purulent infection and septi- chæmia. | 20 | Ó | 0 | 105 | Tetanus. Chorea. | 72 | RATORY | 168 | Nasal polypus. Myiosis of the nasal fossæ. Other diseases of the nasal |
| 1 | 41 | Glanders and farcy. | 21 | ORGANS | | 107 | Neuralgia. | 73 74 | I | 170 | Other diseases of the nasal |
| 2 | 42 | Anthrax. Rabies. | 23 | 3 | (4) | 108 | Neuritis. | 74 | K.A | 171 | |
| | 44 | Actinomycosis. | 24 | ž | | 110 | Neurasthenia Other diseases of the nervous | 74 | SPI | 173 | Diseases of the thyreoid |
| 3 | 45 | Trichinosis. Pellagra. | 24 | | | _ | system. | 7.4 | RES | 173 | body. Acute bronchitis. Chronic bronchitis. 90 |
| | | Tuberculosis (all), 26 to | | THE | | 1 | MAL FOR NERVOUS SYSTEM. | Ha | | 174 | |
| | 47 48 | Tuberculosic of the larvay | 26 | | _ | | | | STEM. | 176 | Pneumonia. |
| | 49 | Tuberculosis of the lungs. Tuberculosis of the meninges. Tuberculosis of the abdomen. Tuberculosis of the bones and | 28 | 0 | | III | Chalazion. | 75 75 | [S] | 177 | Pleurisy. Congestion of the lungs. |
| | 50 | Tuberculosis of the abdomen. | 29 | | | 112 | Other diseases of the lids. | 75 75 | S OF | 179 | Gangrene of the lungs. 96 |
| | 5.2 | Tuberculosis of other organs. | | AND | | 114 | Other diseases of the lids. Lachrymal apparatus, diseases | | SS | 181 | Asthma. 97 Pulmonary emphysema. 98 |
| | 53 | General tuberculosis. | 33 34 | | F.X.A | 115 | Conjunctivitis, acute. Conjunctivitis, chronic. | 75 75 | S | 182 | Endemic hæmoptysis (parago- |
| on. | 54 | Syphilis (all). | 36 | SYSTEM | ADN | 110 | Pterygium. | 75 75 | -DISEASES | 183 | nimiasis). Other diseases of the respira- |
| FAS | 5.5 | Syphilis, primary. Syphilis, secondary. | 36 36 | s. | | 117 | Keratitis. | 75 | 101 | | tory system, phthisis ex- |
| DISFASE | 56 57 | Syphilis, tertiary. Syphilis, hereditary. | 30 | | ILS | 120 | Sclerotitis. Choroid, diseases of. | 75 75 | | | |
| | 57 58 59 | Chancroids. Chancroidal bubo. | 36 | 25 | | 121 | Iritis. Retinitis. | 75 | > | T | OTAL FOR THE RESPIRATORY SYSTEM. IV |
| X. | 59 | Gonorrhea (all). | 36 | RVOU | | 123 | Snow blindness. | 75 | - | | |
| GENFRAL | 60 | Gonorrhœa. | 37 | 1X | - | 124 | Asthenopia. Cataract. | 75 75 | | 7 | TOTAL (brought forward). |
| | 01 | Gonorrheal epididymitis and orchitis. | 3.7 | Z. | | 126 | Glaucoma. Amblyopia | 75 | | | ** |
| OTHER | 63 | Gonorrhœal ophthalmia. Gonorrhœal rheumatism. Gonorrhœal bubo. | 37 | 22 | | 128 | Amaurosis | 75 | i | 184 | Diseases of the salivary glands and ducts. |
| Ç | 65 | Gonorrheal bubo. | 37 37 | THE | _ | 129 | Night blindness. Errors of refraction. | 75 | System, | 185 | Diseases of the teeth, gums. |
| (9) | 66 | Other forms of gonorrhoeal in- fection. | 37 | | (9) | 131 | Errors of refraction. Other diseases of the eye and its adnexa | /3 | .Y. | 186 | Disease of the mouth and tongue. |
| _ | _ | Cancer (all). 30 to | | Ċ | | | adnex1 | 75 | 2 | - 0 | |
| | 68 | tumors of the buccal cavity | | · | | Т | TAL FOR THE EYE AND ITS | | estin | 187 188 | Tonsilitis. 101 Other diseases of the pharynx. 101 |
| | 69 | Cancer and other malignant tumors of stomach, liver. | 39 | ASES | _ | | ADNEXA. | IIb | 18 | 189 | Draman of the contract |
| | 70 | Cancer and other malignant | 40 | - | _ | 122 | Diseases of the external | 26 | | 190 | Uleer of the stomach 103 |
| | | Cancer and other malignant tumors of the peritonaum, | | DISI | AND | 133 | Diseases of the tympanum. | 76 | | 192 | Gastritis. 104 |
| | 71 | intestines, rectum. Cancer and other malignant tumors of other organs and unspecified. | 41 | 1 | AR. | 134 | Diseases of the external ear, Diseases of the tympanum, Diseases of the middle and internal ear. Disease of the mastoid. | 76 | 0 | 193 | Other diseases of the stomach, except cancer. |
| | | tumors of other organs and | 45 | = : | a G | 1343 | Disease of the mastoid. Deafness. | 70 | 356.8 | _ | Diarrhœal diseases, including |
| | 72 | Timors, nonmalignant | 45 | | Ap | | Other diseases of the ear and | 76 | 36 | 104 | enteritis. 106 Diarhœa, acute. 106 |
| | 73 | Acute articular rheumatism. Rheumatism, subacute and | 47 | | 115 | | its adnexa. | 76 | - | 195 | Diarrhea, chronic. 130 |
| | | chronic. | 48 | | _ | T | OTAL FOR THE EAR AND ITS | | > | 196 | Enteritis. 106 Colic, intestinal. 106 Sprue (Psilosis). 106 |
| | 75 | Gout. | 48 | | (2) | | ADNEXA. | II¢ | | 198 | Sprue (Psilosis). 106 |
| | | | | | | | | | | | |

| HE DIGESTIVE SYSTEM. | 200 201 202 203 204 205 206 207 208 | Intestinal parasites. 1. Tama sagmata. 2. Tama sagmata. 3. Hymenologisis nama. 4. Bothriocephalus latus. 5. Tremateda. 6. Ascaris lumbricoides. 7. Oxyuris vermicularis. 7. Oxyuris vermicularis. 7. Oxyuris vermicularis. 7. Oxerator Americanus. 10. Trichocephalus trichiuris. 11. Other intestinal parasites. Inguinal hernia. Other herniae. Intestinal obstruction. Constipation. Fistula in ano. Other diseases of the intestines. Acute yellow atrophy of the liver. | 109 | X. | 259 260 261 262 263 264 205 265 267 268 269 271 272 273 274 | Prickly heat. 14 Erythemata. 14 Hetpes. 14 Eczema and pemphigus. 14 Impetigo and acne. 14 Urticaria. 14 Urticaria. 14 Iggers. 14 Iggers. 14 Iggers. 14 Iggers. 14 Irinia imbricata. 14 Ground itch. 14 Filaria medinensis. 14 Other parasitic diseases. 14 Other diseases of the skin and cellular itssue. 14 Colal For THE SKIN AND CELLULAR TISSUE. VIII | 5 6 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | TOTAL ADMITTAD. DISCHARGED. AND DIED FROM DISEASE (CAT- ried forward). (BROWLER TOWN AND, TOTAL AD MITTED, DISCHARGED AND DIED. 205 Fractures of the spinal col- unin. 208 Other fractures, exclusive of 209 Dislocations. 301 Syrain. 302 Abrasions and blisters (me- chanical). 302 Concussion of the brain. 303 Concussion of the spine. 304 Concussion of the spine. 305 Concussion of the spine. 306 Concussion of the spine. 307 Concussion of the spine. 308 Concussion of the spine. 309 Concussion of the spine. 301 Concussion of the spine. 305 Concussion of the spine. 306 Concussion of the spine. |
|-----------------------------------|--|---|---|---------------------------------|---|--|---|--|
| V.—DISEASES OF TE | 217 218 219 220 221 222 223 224 225 226 227 228 | Hydatid tumors of the liver. Cirrhosis of the liver. Biliary calculi. Congestion of the liver. Acute hepatitis. Hydroxide the state of the liver. Acute hepatitis. Hydroxide the state of the liver. Diseases of the spleen. Simple peritonitis. Appendicitis and abscesses of iliac fosse. Other diseases of the digestive system, cancer and tuber culosis excepted. Total for the Digestive | 111 112 113 114 114 114 114 115 116 | SEASES OF ORGANS OF LOCOMOTION. | 275 276 277 279 280 281 282 283 284 285 | Osteomyelitis. Caries and necrosis of bone, nontubercular. Periostitis. Cases of the bones. Cases of the b | 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | 306 Wounds, contused. 166 307 Wounds, incised. 166 308 Wounds, lacerated. 166 309 Wounds, purchasted. 166 Wounds, gunshot. 166 Wounds, gunshot. 166 311 Crushing. 160 312 Crushing. 161 313 Secondary results of injuries. 166 313 Secondary results of injuries. 166 313 Secondary results of injuries. 168 315 Burns by corrosive substances. 168 315 Burns by corrosive substances. 168 316 Sunstroke 169 317 Heat exhaustion. 169 318 Frostbite. 170 318 Frostbite. 170 320 Lightning. 171 322 Inantiton (starvation, exclusive of disease). 323 Absorption of deleterious gases. 174 324 Absorption of deleterious gases. 174 325 Absorption of deleterious gases. 174 326 Absorption of deleterious gases. 174 327 328 Absorption of deleterious gases. 174 327 328 Absorption of deleterious gases. 174 328 Absorption of deleterious gases. 175 328 Absorption of deleterious gases. 176 328 Absorption of deleterious gases. 176 328 |
| TEREAL) OF THE (| 229 230 231 232 233 234 235 236 237 233 239 | System. Acute nephritis. Chronic nephritis. Pyelitis and pyelonephritis. Other diseases of the kidneys Renal calculi. Cystus. Other diseases of the bladder. Stricture of the neithra. Other diseases of the urethra Prostatitis. | 119 120 121 121 122 122 123 123 | ALFOR. IN -DIS | 7 | of locomotion. 14 OTAL FOR THE ORGANS OF LOCOMOTION. 11 Congenital malformations and arrested development. 15 | - | 324 Narcotic poisonings, acute. 325 Corrosive and irritant poisonings, acute. Venomous bites, stings, and wounds. 175 326 1. Snake bites. 175 329 Other acute poisonings. 175 329 Explosions. 176 330 Suffocation, exclusive of discase. 231 Foreign bodies, presence of 176 |
| DISEASES (NONVER GENITOURINARY | 241 242 243 244 245 246 247 248 | Prostatic hypertrophy. Other diseases of the prostate Balanitis. Paraphimosis. Phimosis. Hamatocele. Hydrocele. Orchitis. Other nonvenereal diseases of the genital organs. | 125 126 126 126 126 126 126 126 126 | NII.— N.— MALFO | 289 | Senile debility. | 54 | Electric shock, 332 Other external violence. 176 TOTAL EXTERNAL CAUSES. XIII GRAND TOTAL ADMITTED, DISCHARGED, AND DIED. 155 Suicide by poison. 155 Suicide by asphyxia. 156 |
| II - Diseases of the Skin, TVI | 249 250 251 252 253 254 255 256 250 257 258 | TOTAL FOR THE GENTIOURI NARY SYSTEM AND ITS ADMEXA. Gargierie. Carbuncle. Furuncle. Acute abscess, phlegmon. Corns and warts. Ingrowing nails. Chilblain. Tropical uleer. Tropical uleer. Tropical uleer. Tropical thagedena. Uleets, other Dermatitis from poisonous plants. | VI 142 143 143 144 145 145 145 145 145 | XIV.—UL.DEFINED DISEASES. | 290 291 292 293 294 295 | Sudden death. Malingering. Febricula, simple continued, and other undetermined probability following operation and disease. Exhaustion from over exertion 27 Exhaustion from over exertion and exposure. Under observation, undiagranter of the probability of the | SUB-CLASSIFIC | Succide by hanging or strangula- tion. too. too. Suicide by firearms. Suicide by firearms. Suicide by cutting instruments. Suicide by cutting instruments. Suicide by crushing. S |

AT WHAT AGE PERIODS AND IN WHAT MEAS-URE HAS THE REDUCTION IN THE MOR-TALITY RATE FROM TUBERCULOSIS MANIFESTED ITSELF IN THE CITY OF NEW YORK DURING THE PAST FORTY YEARS?*

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In studying the names given to the tuberculous causes of death of forty years ago we are struck with what appears to be an entire change of nomenclature when compared with the terms in vogue at

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the present day; phthisis pulmonalis has been superseded by pulmonary tuberculosis, hydrocephalus by tuberculosis of the meninges, tabes mesenterica by abdominal tuberculosis, psoas abscess and disease of spine by Pott's disease, hip joint disease by tuberculous hip joint disease; the only allied term that has held its own during all these years being scrofula; these changes indicative of infection by a specific agent and consequent upon the discovery by Koch of the tubercle bacillus, represent the establishment upon a firm basis of the recognized principles of preventive and curative ways and means employed in the extermination of this dread destroyer.

The late Dr. Elisha Harris, the first registrar of vital statistics of the Metropolitan Board of Health

of the City of New York, and one of the ablest and toremost pioneers in blazing out the paths to be followed in sanitary and statistical warfare—for in those days it was actual warfare—wrote into the pages of its third Annual Report, in 1868, the following sentences:

Hygienists now can measurably restrain and prevent the generation of this disease, which in our northern and middle States prematurely destroys from twenty to thirtyfive per cent. of all persons who pass the age of childhood, or from twelve to eighteen per cent, of the total at all ages; for, at least four of its factors of causation are now recognized in the list of avoidable conditions, to wit: 1, Wetness of grounds and habitation; 2, impurity of air and unwholesomeness of circumstances in indoor life; 3, defective sunlighting of dwellings; 4, needless exposure of nonconsumptive persons to the consumptive in unventilated places; avoidance of the contagious element in phthisis and of the circumsfances that render its contagious property operative. Even the hereditary constitutional perpetuating property of tuberculosis may year by year, and generation after generation, be diminished in the extent of its operation, for hygienic considerations should, and in a higher civilization will, favorably influence intelligent men in the selection of wives who are to be the mothers of their children; yet this may be the last in the series of preventive measures against phthisis; and, like the physiological requirements of hygienic alimentation, exercise, and sunlighting, the applications of hygiene to the hereditary improvement of the quality of our race will be attained only in a higher state of the popular intelligence.

The man who formulated such doctrine forty years ago could not but view with contented eyes, in the event of a visit as a reincarnated spirit to this hustling mundane sphere, the segregation of consumptives, the open air treatment, the avoidance of the infectious element, the sunlighting of dwellings, the establishment of parks, hygienic alimentation and sanitation, and last, but not least, the elevation of popular intelligence to a higher plane; the phrase "a higher civilization will favorably influence intelligent men in the selection of wives who are to be the mothers of their children" reveals us to-day in the position of "side stepping" this knotty problem. No small wonder then that the work of comparison of the statistics of the present day with those compiled under his supervision was simple in the ex-

The first striking feature of the reduction in the mortality rates is that at every age group in both males and females the proportion of decrease is considerable with the exception of the age group 45-55 in the males, in which the reduction is only one per cent., and the group 10-15 in the females, in which it reached the comparatively low mark of seven per cent., this latter explainable by the impaired general physical condition attendant upon the assumption of the generative function and thereby an increased liability to tuberculous infection.

The second feature of the decrease in the pulmonary tuberculosis rate is the greater decrease at all age groups among the females compared with those of the males, with the exception of the ages under five and between ten and fourteen; the reduction per cent. of the female mortality at all ages is fifty-five, and that of the males only twenty-nine, slightly more than one half that of the females. This is the more remarkable when we consider that of late years the female has taken up occupations classed as dangerous from an infectious standpoint,

such as those of typewriting, sales woman, flower making, feather working, etc. Why should the rate from this cause of death be almost fifty per cent. lower in the female sex than in the male? Exposure to the elements on the part of the latter has been offered as an explanation, and is true to some extent, as the death rate from pulmonary tuberculosis up to the twenty-fifth year is almost the same in the male as in the female, and at all ages above twenty-five the rate among males is greatly in ex-The abuse of alcohol is undoubtedly one of the potent factors in rendering the male more prone to infection and less amenable to recovery than the female; even the use of alcohol in the treatment of tuberculosis is being gradually discarded by the careful physician of to-day.

A third explanation of this phenomenon of the weaker sex surviving the stronger is that based upon anatomical and physiological difference of sex, the female by reason of the predominance of superior costal breathing more fully expands the apices of the lungs, and as tuberculous inflammation generally begins at the apices, consequently the natural physiological exercise of these parts militates against harboring of the bacillus tuberculosis

herein.

The table also shows that at the ages above sixty-five years in both sexes the reduction in the death rate has been greatest; that the age group at which the heaviest mortality prevails is that of 45-54 in males and both sexes combined, and 35-44 in females; that at the age group 45-54, seven males died to two females.

The assertion made as to the considerable reduction (forty-one per cent.) in the death rate from pulmonary tuberculosis at all ages, being one based upon the certification in early years of obscure pulmonary diseases as phthisis pulmonalis-the greater accuracy in diagnosis and certification of the present day serving to enter causes of death under their proper titles—are not capable of statistical proof; on the contrary, it is fair to assume that in the past if crude diagnoses placed doubtful pulmonary diseases under the heading "phthisis," thus transferring them from their proper heading from under "diseases of the respiratory organs," we should expect to find the death rates from the latter causes increased in harmony with the decrease from pulmonary tuberculosis. Such is not the case, however. Upon comparing the returns (see Table 2) for the years 1868 and 1907 we find that at those age groups at which the maximum number of deaths from pulmonary tuberculosis is reported, that is between fifteen and forty-five years, the death rate decreased forty per cent. in pulmonary tuberculosis, while that from diseases of the respiratory organs not only did not increase at the ages mentioned, but at these as well as at all ages showed a decrease of seven per cent. Again we must take into consideration that since influenza has become a factor in mortality tables, the deaths from respiratory diseases have increased considerably, and in the year 1907 this was especially true by reason of the severity of the epidemic; it may be argued that deaths which should have been entered as pulmonary tuberculosis in the year 1868 were credited to causes other than those of the respiratory organs,

as evidenced by the increased death rates from all causes at age groups forty-five years and over as shown in the table, but that argument may be met by a glance at the second table, which shows that the increase is due to the extraordinary rise in the death rates from circulatory, urinary, and cancerous diseases, and the moderate one in the rates from respiratory diseases at these age groups; the increased percentage in the death rate at ages forty-five years and over was 251 in circulatory, 153 in urinary, 124 in cancerous, and forty-three in respiratory diseases.

The death rate from other tuberculous diseases at all ages shows a much greater decrease than that from pulmonary tuberculosis, the percentage reduction being almost the same for males and females, seventy-eight against seventy-six, this equality in the decrease is all the more curious by reason of the large discrepancy in the reduction of the rate from pulmonary tuberculosis in the female compared with that in the male. The rates at age groups other than those under ten years should be disregarded by reason of the small number of deaths compared, especially those of the year 1868. Eighty per cent, of the deaths under ten years of age from other tuberculous diseases are reported as tuberculous meningitis, and it is likely that the decreased mortality from this cause is a real one, as the varieties of meningitis other than tuberculous show a considerable reduction in their death rates.

The death rates from all forms of tuberculosis show a considerable decrease at all ages, the reduction reaching forty-one per cent. among the males and sixty per cent. among the females, that of both

sexes being exactly fifty per cent.

The different age groups of the males show considerable decreases with the exception of that of 45-54 years, the increase being almost one per cent., which for all practical purposes may be disregarded; among the females the age group 10 to 14 years

shows an increase of fifteen per cent.

The third chart is based upon the absolute number of deaths reported in 1868 and 1907 from pulmonary tuberculosis, and shows the five age groups at which the highest mortality occurs arranged by sex and person in the order of their numerical supremacy. It shows that among the males the greatest number of deaths in 1868 occurred at the age group 25-34 years, and the second greatest number at 35-44, and then follows the groups 15-24 and 45-54; in the year 1907 the first two mentioned groups exchanged places, as did the second twoin other words, that there was a postponement of the fatal issue in many instances, a comparatively short one considering the intervening gap of forty years; among the females the age groups in question maintain the same position in 1907 as in 1868, that is, there has been apparently no lengthening of life among females suffering from this disease, in fact, the comparison of the ratios between the figures of alternate age groups for 1868 with those of 1907 warrants us in deducing that life has been shortened; as regards both sexes the age groups maintain the same position in 1907 as in 1868, but a study of the figures of both years justifies us in the conclusion that there is no shortening of the rluration of life. In order to ascertain whether these conclusions may be drawn calculations were

made as to the mean age at death from pulmonary tuberculosis of both sexes combined and males and females separately between the ages 15-64; admission is made that using this test as a measure of the duration of human life is open to serious objection, but the percentages of the age groups 15-64 of the entire population in 1907 are fairly identical with those of 1868—the percentages under fifteen years and over sixty-five years of the populations in 1868 and 1907 varying considerably; these latter age groups were therefore excluded—and as the results are used simply to corroborate deductions drawn from the table under consideration, we hold that the use of this test is allowable. The mean average age at death of males from this cause in 1868 was thirty-six years and three months, and in 1907, thirty-eight years and three months, an increase in length of life of two years; the mean average age at death of females from this cause in 1868 was thirty-six years and one month, and in 1907, thirty-three years and eight months, a shortening of the duration of life by one vear and five months; the figures for both sexes combined were thirty-six years and one month in 1868, and thirty-six years and nine months in 1907, an increase of eight months; from this we must infer that the prolongation of life in tuberculous patients has been on the whole comparatively meagre, that the male by reason of his preponderance over the female as to tuberculous infection and probably by the self sacrifice of his consort has received more attention at the hands of the public officials than the female, and in consequence the latter has not fared so well as to the added duration of life; it is true she has progressed further as to the diminution of the death rate at most age groups and at all ages, when compared with the male; she has probably sought medical aid earlier than the male in the commencement of the disease, and consequently more cases of complete cure are credited to her sex than to the The figures reiterate the necessity of early diagnosis and treatment, for without these the outlook for the eradication of tuberculosis is indeed

The brighter side of the question may be viewed from the standpoint that thousands of lives are saved yearly as shown by the decrease in the death rate at all ages. If the death rate at all ages of both sexes in the year 1868 is applied to the population of the present Boroughs of Manhattan and the Bronx, there would have been 10,190 deaths recorded from pulmonary tuberculosis against 6,030 actually recorded, a difference of 4,160; that coincident with the saving of lives there has been a saving in health to the community immeasurable in its value; another and darker view may be presented by the fact that during the past five years the death rate from tuberculosis has been almost at a standstill in the city of New York, and it seems to me that more drastic steps must be taken if we are to progress in our work; standing still is retrograding; the city, State, and nation must provide for the old, advanced cases for whom but slight provision has been made in the past and who undoubtedly are the chief factors in the dissemination of infection; when this duty is fully performed, and not until then, we may hope to see the arrival of the happy day when tuberculosis has disappeared from the civilized world.

TABLE I.

DEATHS AND RATES IN 1,000 AT DIFFERENT AGE PERIODS WITH INCREASE OR OPEREASE PYERCENTAGE FROM ALL CAUSES AND TUBERCULOUS RISEASES FOR THE YEARS SOS AND 1907.

OLD CITY (MANHATTAN AND BRONX).

| | | . 11 | | | Per cent., | | D | tube reulosis | | Per cent., |
|---------------|--------|----------------|---------|--------------|--------------|-------|------------|---------------|--------|------------|
| | 1) | aths | causes. | | 111111111111 | De | aths. | | tes. | Increase. |
| | .808. | 1007. | 1868. | 1907. | decrease. | 1868. | 1907. | 1868. | 1987. | dectrase. |
| MALES. | | | | | | | | | | |
| Under 5 years | 6.909 | 8,455 | 130.6 | 57.85 | - 50 | 70 | | 1.40 | 0.45 | |
| 5-9 | 452 | 577 | 10.1 | 4.50 | 5 | 18 | - 4 | 43 | 0.19 | 56 |
| 10-14 | 100 | 286 | 5.04 | 2.68 | 4.7 | 10 | 10 | 0.48 | 0.15 | -69 |
| 15-19 | 249 | 545 | 0.14 | 5.24 7.62 | 1.5 | .79 | :71 | 1.95 | 2.65 | -15 -54 |
| 20-24 | 518 | 945 | 13.42 | 9.42 | -43 -42 | 218 | 329 492 | 5.75 6.46 | 3.54 | |
| 30-34 | 047 | 1,309 | 18.01 | 12.50 | 31 | 242 | 500 | 6.54 | 4.48 | 32 |
| 35:44 | 1.210 | 3,594 | 20.32 | 18.25 | -10 | 369 | 1.087 | 6.15 | 5 - 52 | -10 |
| 45-54 | 002 | 3,468 | 20.30 | 31.84 | - 21 | 267 | 764 | 7.09 | 7.01 | I |
| 55-04 | 073 | 2,822 | 42.15 | 49.87 | -18 | 159 | 305 | 9.96 | 5 - 39 | -46 |
| 65 and over | 770 | 3.032 | 03.71 | 107.1 | + 3 | 1000 | 1.4 | 13-37 | 4.03 | -70 |
| All ages | 13.360 | 20,014 | 32.12 | 21.13 | -34 | 1.812 | 3.033 | 4.38 | 3.12 | -29 |
| FEMALES. | | | | | | | | | | |
| Under 5 years | 6,158 | 7.190 | 118.9 | 49.57 | -58 | 18 | 1.7 | 1.31 | 0.46 | 65 |
| 5-9 | 404 | 473 | 9.08 | 3 - 7 4 | -59 | -3 | -: | 0.52 | 0.17 | 67 |
| 10-14 | 134 | 296 | 3.36 | 2.70 | 18 | ~ ~ | - 5 | 0.55 | 0.51 | — 7 |
| 15-19 | -74 | 510 | 5.74 | 4.14 | S | 46 | 185 | 2.01 | 1.50 | |
| 20-24 | 525 | 815 | 10.01 | 5.45 | —47 | 248 | 298 342 | 5.48 | 2.40 | 56 |
| 25-29 | 520 | 974 | 14.24 | 8.85 | -47 -38 | 180 | 201 | 5.00 | 2.54 | —50 —50 |
| 30-34 | 944 | 2,140 | 15.83 | 12.44 | 21 | 332 | 401 | 5.57 | 2.67 | 34 |
| 45:54 | 044 | 2,040 | 17.60 | 19.67 | 11 | 173 | 210 | 4.77 | 2,03 | 57 |
| 55-04 | 498 | 2,220 | 29.37 | 38.43 | +31 | 119 | 96 | 7.02 | 1.66 | 76 |
| 65 and over | 909 | 3.308 . | 88.40 | 97-30 | +10 | 87 | 71 | 8.46 | 2.03 | 76 |
| All ages | 11.580 | 21.084 | 26.52 | 10.53 | 38 | 1,602 | 2.097 | 3.67 | 1.04 | 3 5 |
| BOTH SEXES. | | | | | | | | | | |
| Under 5 years | 13.007 | 15.045 | 124.8 | 53-74 | -57 | 147 | 132 | 1.40 | 0.45 | 08 |
| 5.9 | 856 | 1.050 | 9.60 | 4.10 | -57 | 41 | 4.5 | 0.40 | 0.18 | |
| 10-14 | 333 | 582 | 4.19 | 2.72 | -35 | 4.1 | 21 | 0.52 | 0.33 | -37 |
| 15-19 | 523 | 1,055 | 5.92 | 4.05 | -21 | 175 | 350 | 1.98 | 1.57 | —21 —=8 |
| 20-24 | 1,043 | 1,760 2,283 | 12.03 | 0.43 8.11 | -47 -44 | 470 | 834 | 5.94 | 2.06 | —50 —50 |
| 25:29 | 1.186 | 2,594 | 10.13 | 10.77 | 3.3 | 428 | 224 | 5.82 | 3.50 | -39 |
| 30-34 | 2,163 | 5,740 | 18.08 | 15.54 | 11 | 701 | 1,548 | 5.86 | 4.10 | -29 |
| 45:54 | 1,634 | 5,508 | 22,10 | -5.90 | - 17 | 440 | 974 | 5.95 | 4.58 | -23 |
| 55:04 | 1.171 | 5.051 | 35-59 | 44.00 | -24 | 278 | 401 | 8.45 | 3.50 | -59 |
| 65 and over | 1,685 | 6,430 | 94.84 | :01.7 | 7 | 187 | 185 | 10.53 | 2.93 | -72 |
| All ages | 24.889 | 47,698 | 29.24 | 18.97 | -35 | 3.414 | 0.630 | 4.01 | 2.37 | 41 |
| | | | | | | | | | | |

| | T) | Other tu | berculous, | | Per cent., increase | De | All tube | | tes. | Per cent., increase |
|---|--------|----------|------------|-----------|------------------------|------------|------------|--------|--------------|------------------------|
| | :508. | 1907. | 1808. | 1907. | decrease. | 1808. | 1907. | :868. | 1907. | decrease. |
| MALES. | | . 507. | | - 3 - 7 - | | | | | | |
| Under 5 years | 551 | 230 | 10.40 | 1.57 | -85 | 030 | 203 | 11.01 | 2.02 | -83 |
| 5-9 | 23 | 4.3 | (. 3.2 | 1.34 | -35 | 41 | e - | 0.92 | 0.53 | 42 |
| 10-14 | 13 | 11 | 33 | (+, I) | 72 | 3.2 | -7 | 0.80 | 0.25 | 69 |
| 15-19 | 4 | 13 | 0.10 | 0.13 | + 30 | 83 | 184 | 2.04 | 1.77 | -13 |
| 20.24 | 1 | 19 | 0.03 | 0.15 | +400 | 223 | 348 | 5-77 | 2.81 | 51 |
| 25-29 | 3 | 5,0 | 0.08 | 0.21 | 163 | 201 | 521 | 6.54 | 3.75 | -43 |
| 30-34 | 1 | 10 | 0.03 | 0.13 | +333 | 243 | 582 | 6.57 | 4.60 5.66 | 30 10 |
| 35-44 | 10 | 27 32 | 0.17 | 0.14 | -18 -181 | 379 273 | 790 | 7.25 | 7.31 | - 1 |
| 45.54 | 8 | 3-2 | 0.50 | 0.1; | -74 | 107 | 312 | 10.46 | 5.51 | 47 |
| 55-64 | 0 | 4 | 1,20 | (.)4 | \$\$ | 100 | 118 | 14.57 | 4.17 | -71 |
| All ages | 029 | 431 | 1.52 | 9.34 | | 2.441 | 4.304 | 5.80 | 3.47 | -41 |
| | | 43- | | - 5 | .,- | | 4.0.4 | J | 0 | |
| FEMALES. | | | | | | | | | | |
| Under 5 years | 453 | 181 | 8.74 | 15 | -86 | 5.21 | 248 | 10.06 | 1.71 | -83 |
| 5.9 | 1.2 | 37 | 0.27 | 0.20 | +7 | 3.5 | = 8 | 1.06 | 0.79 | -42 |
| 10-14 | 2 | 19 | 0.05 | 0.18 | +260 | 24 | 74 | 0.60 | 0.69 | -15 |
| 15-19 | 5 | 2.3 | 0.10 | (1.19 | +90 | 101 | 208 | 2.11 | 1.69 | -20 |
| 20-24 | 1 | 20 | 0.02 | 0.13 | + 550 | 249 | 318 | 5.17 | 2.13 | - 59 |
| 25.29 | 1 | 18 | 0.02 | 0.13 | - 550 | 188 188 | 300 | 5.51 | 2.52 | 54 48 |
| 30-34 | 2 | 14 | 0.05 | 5.12 | +140 | | 305 478 | 5.15 | 2.77 | -51 |
| 35°44 · · · · · · · · · · · · · · · · · · | 4 I | 1 7 | 0.07 | 0.10 | +43 | 330 | 215 | 4.79 | 2.07 | —ŝ: |
| 55-64 | 4 | 10 | 0.24 | 0.17 | -20 | 1=3 | 100 | 7.26 | 1.83 | -75 |
| 65 and over | 11 | 4 | 1.07 | 0.11 | 00 | 08 | 7.5 | 9.53 | 2.15 | |
| All ages | 490 | 348 | 1.14 | 0.2" | 76 | 2.098 | 2.445 | 4.80 | 1.92 | (10) |
| BOTH SEXES. | 47- | radio. | | | ,- | | | | | |
| Under 5 years | 1,004 | 411 | 0.00 | 1.41 | -85 | 1,151 | 5.1.3 | 10.99 | 1.87 | 83 |
| 5-9 | 35 | 80 | 0.39 | 0.32 | -18 | 76 | 125 | 0.85 | 0.50 | 41 |
| 10-14 | 15 | 30 | 0.10 | 0.14 | 26 | 56 | 101 | 0.70 | 0.47 | 33 |
| 15-19 | 9 | 36 | 0.10 | 0.10 | 60 | 184 | 302 | 2.08 | 1.73 | -37 |
| 20-24 | 2 | 39 | 1.02 | 0.14 | +600 | 472 | 066 | 5 - 45 | 2.43 | 55 |
| 25-29 | 4 | 47 | 0.05 | 0.17 | 240 | 510 | 881 | 5.99 | 3.13 | -48 |
| 30-34 | 3 | 341 | 0.04 | 0.12 | 200 | 431 | 88; | 5.86 | 3.68 | -37 |
| 35:44 | 1.4 | 44 | 0.12 | 0.12 | | 715 | 1.50- | 5.98 | 4 - 3 1 | |
| 45.54 | 7 | 37 | 0.00 | 0.17 | -80 | 447 | 1.011 | 6.05 | 4.76 | 2 1 |
| 55-04 | 1.2 | 12 | 0.37 | 0.15 | -50 | 290 | 418 | 8.81 | 3.65 | — 5 Q |
| 65 and over | 5.0 | 8 | 1.13 | 0.12 | -80 | 505 | 193 | 11.65 | 3.05 | -74 |
| All ages | :.:25 | 779 | 1.32 | C.31 | 7.7 | 4 = 30 | 0,809 | 5.33 | 2.68 | -50 |

TABLE 11.

DI ATHS AND RATES IN 1,0000 AI DHTERENT AGE GROUPS WITH INCREASE OR DECREASE PERCENTAGE FROM CIIGCULATORY, URINARY, RESPIRATORY, AND CANCEROUS DISEASES. YEARS 1868 AND 1907 OLD CITY (MANHATTAN AND BRONX).

| OLD CITY (MANHATTAN AND BRONX). | | | | | | | | | | |
|--|--|--|---|--|---|--------------|--|--|---|--|
| | | | | | Per cent., | | | | | Parent, |
| | | Datts | atory. Rati | 115. | increase | Deat | h- Ciir | ary, | | increase |
| 24.14.70.1 | 1858 | 111 | 1868 | 1907. | decrease. | 1804 | 1907. | 1868. | 1907 | decrease. |
| MALES. Under 5 years | | | 0.32 | 0.38 | + 19 | (0) | 5.5 | 0.57 | 0.38 | -33 |
| 5-9 | 1 . | 3: | 0.27 | 0.28 | + t 21 | 14 | 1.5 | 0.3: | 0.14 | -55 -78 -40 |
| 10 14 | | 4 5 | 0.40 | 0.34 | 21 | 3 | 4 | 0.18 | 0.12 | -70 |
| 20-24 | 2 ' | 3- | 0.85 | 0.51 | -11 | 21 | 37 | 0.54 | 0.30 | 44 49 |
| 30:34 | 3.2 | 1., | 0.80 | 0.82 | ± 3.2 | 35 37 | 74 | 1,400 | 0.82 | -13 |
| 35-44 | 1,4 | 1 · . 358 | 1.13 | 4.28 | +61 | 98 79 | 306 408 | 1.47 | 3-75 | +5 |
| 45.54 | 7.5 4.4 | \$1. 7. | 2.70 | 9.10 | ± 230 | 5.3 | 414 | 3.3- | 7.3= | I 20 |
| 65 and | 0.3 | 7. | 8.40 | 20.00 | F 221 | 65 | 505 | 8.69 | 17.83 | + 105 |
| Total | 391 | 2 5) 5 | 0.91 | 1.99 | 7 112 | 428 | 1,936 | 1.03 | 1.54 | - 50 |
| TEM VIES | | | | | | | | | | |
| Under , we as | 1. | | 21 | 0.46 | T 110 | 25 | 36 | 0.48 | 0.15 | 1,3 |
| 5 9 | 14 | 34 | 0.41 | 0.27 | -3+ +56 | 1.7 | 1.3 | 0.23 | 0.10 | - 57 - 33 - 6 |
| 15-19 | | 4-2 | 0.25 | 0.39 | rt 21) | 6, 8 | 11 | 0.15 | 0.10 | <u>33</u> |
| 20-21 | 27 | 4.5 | 0.42 | 0.45 | +10 | 29 28 | 30 | 0.62 | 0.20 | -19 |
| 25·29 | 3 . | 118 | 0.82 | 1.03 | +26 | 30 | 7.2 83 | 0.82 | 0.73 | |
| 35-44 | 3.5 | 295 | 0.75 | 1.71 | + 202 | 7.1 \$0 | 231 | 1.19 | 1.34 | +13 |
| 55.04 | | 401 | 2.12 | 3.17 8.03 | +279 | 2.1 | 270 28s | 1.24 | 4.91 | +206 |
| 65 and corr | 1 - | | 4 - 57 | 23.40 | +412 | 38 | 439 | 3.70 | 12.57 | +240 |
| Total | 287 | | 0.00 | 1.8, | + 183 | 312 | 1,476 | 0.71 | 1.16 | -63 |
| BOTH SEXES. | | | | | | | | | | |
| Under a year | -8 | 1.; | 01.27 | 0.22 | + 56 | 5.5 2.4 | 81 | 0.53 | 0.28 | -47 56 |
| 5.9 | 30 | 53 | 0.34 | 0.27 | -21 +5 | 1.3 | 30 | 0.27 | 0.12 | 56 56 |
| | 25 42 | 130 | 0.28 | 0.45 | +61 | 16 50 | 28 67 | 0.18 | 0.12 | —33 —57 |
| 20-24 | 5.5 | 17.2 | 0.65 | 0.61 | 6 | 63 | 146 | 0.74 | 0.52 | - 30 |
| 30 34 | 53 | 222 | 0.72 | 1.77 | + 28 +86 | 67 139 | 187 | 0.91 | 0.78 | -11 -11 |
| 45.54 | 113 | 795 981 | 1.62 | 3.74 | 4121 | 110 | 537 678 | 1.66 | 3.19 | +92 |
| 55-64 | 85 | 981 1,555 | 2.43 5.19 | 24.50 | +252 +207 | 74 103 | 699 941 | 2.25 5.80 | 0.10 | +171 +157 |
| 03 4114 | | | | | 1 - 27 | | - | - | | |
| Tutal | 6-8 | 1335 | 0.85 | T 0.2 | etc 1 (c) | = 10 | 2 11 1 | 0.87 | 1.31 | 54 |
| Total | 678 | 4.335 | 0.8) | 1.92 | + 140 | 740 | 3.412 | 0.87 | 1 - 3 4 | 54 |
| Total | 678 | | | 1.02 | Per cent., | 740 | | | 1.31 | Per cent., |
| Total | | Respi | ratory, Rai | tes. | Per cent., increase | Dea | Cano | erous, | e. | Per cent., increase |
| MALES. | 1803 | Respi Death: | ratory, Rai 1868. | ies. 1907. | Per cent., increase or decrease. | | Cano | erous. | | Per cent., increase or decrease. |
| MALES. Under a year- | 1803 | Respi | ratory, Rai 1868. | ies. 1907. | Per cent., increase or decrease. | Dea | Cano | erous, | e. | Per cent., increase |
| MALES. Under a year- | 1863 997 39 | Respi Death: 1907. | 1868. 17.15 .873 | ies. 1907. | Per cent., increase or decrease. | 1864 Dea: | Canc ths. 1907. | erous, Rat 1868 | es 1907. | Per cent., increase or decrease. |
| MALES. Under a year- | 1863 907 39 11 | Respi Deaths 1907. 2.12. 39 53 | 1868. 17.15 .873 .279 | ies. 1907. | Per cent., increase or decrease. -15 -37 +31 +22 -10 | Dea: | Cance ths. 1907. | erous, Rat 1868. | es 1907. | Per cent., increase or decrease. |
| MALES. Under 5 year 5.9 10-14 15-19 22-24 25-29 | 1865 907 30 11 17 | Respi Deaths 1907. | 1868. 17.15 .873 .279 .419 | 1907. 14.51 .548 .365 .510 .847 | Per cent., increase or decrease. | Dea: | Cancella Can | erous, Rat 1868 | ex 1907. 0.06 | Per cent., increase or decrease. |
| MALES. Under 5 year 5.9 10-14 15-19 22-24 25-29 | 1863 907 30 11 17 42 58 71 121 | Respi Deaths 1907. 2.12 | Ratory, Rat 1868. 17.15 -873 -279 -419 1.41 | 1907. 14.51 - 548 - 365 - 510 - 847 1.12 1.61 | Per cent., increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868 0.02 0.05 0.11 0.22 | 1907. 0.06 0.09 0.18 | Per cent., increase or decrease + 200 + 54 + 145 |
| MALES. Under 5 year- 5 9 10-14 17-19 21 24 25 20 30-34 35 34 45 54 | 1863 007 30 17 47 53 71 124 118 | Respi Deaths 1907. 2.12 - | 1868. 17.15 .873 .279 .419 1.41 1.92 2.07 | 1907. 14.51 - 548 - 365 - 510 - 847 1.12 1.61 | Per cent., increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868 | es 1907 | Per cent., increase or decrease + 200 + 54 + 145 |
| MALES. Under 5 year- 5 9 10-14 15-19 2 24 25 29 30-34 35 34 | 1863 907 30 11 17 42 58 71 121 | Respi Deaths 1907. 2.12. 5.3 5.3 1.75 1.56 2.14 | ratory, Rai 1868. 17-15 -873 -279 -419 1-41 1-42 2-07 | 1907. 14.51 - 548 - 365 - 510 - 847 1.12 | Per cent., increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868 0.02 0.05 0.11 0.22 | 1907. 0.06 0.09 0.18 | Per cent., increase or decrease. + 200 |
| MALES. Under 5 year- 5 5 11-14 12-14 25 20 30:34 35 31 45 14 55 14 65 16 | 1865 907 30 11 17 47 47 55 71 123 118 | Respi Deaths 1907. 2.1.2 - 3.9 39 53 1.15 2.14 5.5 2.4 477 447 477 447 50 . | 1868. 17.15 .873 .279 .419 1.41 1.42 2.07 3.14 6.26 15.64 | 1907. 14.51 -548 -365 -510 -847 1.12 1.61 -2.57 4.38 7.88 19.80 | Per cent increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868. 0.92 0.05 0.11 0.22 0.56 | es 1907 | Per cent., increase or decrease |
| MALES. Under 5 years | 1863 997 39 11 17 47 58 71 124 118 109 117 | Respi Deaths 1907. 2.12 | 1868. 17.15 .873 .279 .419 1.41 1.42 2.07 3.14 6.26 | 1907. 14.51 -548 -365 -510 -847 1.12 1.61 2.57 4.33 7.88 | Per cent increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868. 0.92 0.05 0.11 0.22 0.56 1.44 2.14 | es 1907. 0.06 0.09 0.18 0.54 1.97 4.33 7.20 | Per centt., increase or decrease |
| MALES. Under 5 year- 5 9 10-14 15-19 21-24 25-29 30-33 35-34 45-54 55-54 65-51 Tatal FEMMIN Under 5 years. | 1863 907 30 11 17 41 41 41 41 118 118 118 118 11 | Respi Death 1997. 2.12 - 199 53 - 195 135 - 195 144 - 195 4.739 | 1868. 17.15 .873 .279 .419 1.41 1.42 2.07 3.14 6.26 13.54 | 14-51 -548 -365 -510 -847 1.12 1.61 2.57 4.38 19.80 3.76 | Per cent., increase or decrease. | Dea: 1868 | Canc. 1907 | erous, Rat 1868. 0.92 0.05 0.11 0.22 0.56 1.44 2.14 | es 1907. 0.06 0.09 0.18 0.54 1.97 4.33 7.20 | Per centt., increase or decrease |
| MALES. Under 5 year- 5 9 10-14 15-19 21-24 25-29 30-33 35-34 45-54 55-54 65-51 Tatal FEMMIN Under 5 years. | 1863 907 30 11 17 47 55 74 124 118 117 1.65 2.55 2.75 | Respi Death 1997. 2.12 - 199 53 - 195 135 - 195 144 - 195 4.739 | 1868. 17.15 .873 .279 .419 1.41 1.42 1.42 2.07 3.14 6.26 15.64 3.96 | 1997. 14-51 -548 -365 -510 -847 1.112 1.61 2.577 4.33 7.88 19.80 -3.76 | Per cent., increase or decrease. | Dea: | Cancella Can | erous, Rat 1868. | es 1907. 0.06 0.09 0.18 0.54 1.97 4.33 7.20 | Per centt., increase or decrease |
| MALES. Under 5 years 59 10-14 15-19 21-24 25-29 30-33 33-31 33-54 45-54 65-71 T-tol. FEMALIS Under 5 years 19 11-41 11-41 | 1863 007 30 17 47 58 74 118 100 117 1,675 | Respi Death 1997. 2.12. 39 39 195 185 291 477 419 19, 24 47, 39 4.739 4.739 4.749 4.749 4.749 4.749 4.749 | 1865. 17-15 .8873 .279 .419 1.41 1.42 1.42 1.43 1.44 1.42 1.42 1.43 1.43 1.43 1.44 6.26 1.5.26 1.5.26 1.5.26 1.5.26 1.5.26 1.5.26 0.85 0.25 | 1907. 14-51 -548 -365 -510 -847 -1.12 -1.61 -2.57 -4.33 -7.88 -19.80 | Per cent., increase or decrease. -15 -37 +31 +22 -19 -23 -16 +26 +26 +26 +3 -47 -47 -11 +5 | Dea: 1868 | Canc | erous, Rat 1868 | 1997. 0.06 0.09 0.18 0.54 1.97 4.33 7.20 7.67 | Per cent., increase of the cent. increase of the cent. I have a second of |
| MALES. Under 5 years 59 10-14 15-19 20-24 25-29 30-34 35-34 45-54 55-54 16-5-71 Total FEMILIS Under 5 years | 1863 907 30 11 17 47 55 74 124 118 117 1.65 2.55 2.75 | Respi Death: 1907. 2.12. 309 339 155 291 507 477 119 50. 4.749 4.749 1., 15 2.7 2.4 3.5 6.7 | 1868. 17.15 8.73 8.72 8.74 9.14 9.14 1.45 1.45 1.45 1.45 1.46 1.46 1.46 1.47 1.48 1.92 1.49 1.49 1.49 1.49 1.49 1.49 1.49 1.49 | 14-51 -548 -365 -510 -847 -1.12 -1.61 -2.57 -4.38 -7.88 -19.80 | Per cent., increase or decrease. —15 —37 —37 —428 —16 4 49 6 6 127 —3 —3 —47 —41 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | Deat 1868 | Cane this. 1907 | 1868. Rati 1868 | es 1907 | Per cent., increase of the cent. increase of the cent. I have a second of |
| MALES. Under 5 years 59 18-19 18-19 20-24 | 1865 907 30 117 47 49 58 71 118 117 1.655 5,76 5,76 5,76 6,77 1,655 | Respi Death 1997. 2.12. 3.12. 3.13. 3.15. 2.14. 4.77. 4.77. 4.77. 2.4 4.3.3 5.7 2.4 4.3.3 5.7 2.4 4.1 5.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6 | 1869. 17-15 -873 -279 -419 1-41 1-92 -2-07 1-6-2-6 -2-6 -2-6 -2-6 -2-6 -2-6 -2-6 - | 1907. 14-51 -548 -3055 -510 -847 -1.12 -1.62 -1 | Per cent., increase or decrease. —15 —37 —431 +29 —10 0 +24 +40 0 +27 —3 —37 —411 +5 —62 | Dear 1868 | Cane 1907 | erous, Rat 1868 0.92 0.05 0.11 0.22 0.56 1.44 0.20 0.02 0.04 | es 1997 | Per cent., increase of decrease, + 200 |
| MALES. Under 5 years 59 10-14 15-19 21-24 25-29 30-34 | 1865 907 30 117 47 47 48 118 117 1,000 Spoots 10 41 41 41 41 42 75 | Respi Death 1997. 2.12. 399 53 1.15 2.14 1.15 4.77 4.77 4.77 4.77 4.74 4.3 5.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 2.44 4.3 6.59 6.77 1.11 4.74 4.3 6.59 6.77 1.11 4.74 4.3 6.59 6.77 4.74 4.3 6.59 6.77 6.77 6.77 6.77 6.77 6.77 6.77 6.7 | ratory, Rail 1868. 17.15 | 1907. 14.51 -548 -3055 -510 -847 -1.12 -1.611 -2.57 -4.38 -7.88 -7.88 -7.88 -7.80 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 -7.61 | Per cent., increase or decrease. —15 —37 —23 —16 —17 —37 —37 —47 —47 —48 —55 | Dear 1868 | Cane this. 1907 | Ratir868. | 0.907. 0.906 0.009 0.18 0.18 0.18 1.22 3.44 | Per cent., increase of decrease, |
| MALES. Under 5 years 59 10-14 15-19 21-24 25-29 30-34 | 1803 007 30 30 10 11 12 40 40 41 118 118 118 118 118 118 118 | Respi Death 1907. 2.12. 39 39 33 135 135 291 477 119 4.7 tr 11, 34 37 24 4.3 tr 240 386 | ratory, Rail 1868. 17.15 | 1907. 14-51 -548 -305 -305 -305 -317 -1.12 -1.61 -2.57 -4.38 -7.88 -3.76 12.40 | Per cent., increase or decrease. —15 —37 —23 —16 —17 —37 —37 —47 —47 —48 —55 | 1868 | Cane 1907 | erous, Rat 1868 | 0.00 0.06 0.08 0.08 0.05 1.97 4.33 7.20 3.67 | Per cent., increase or decrease, + 200 + 0.1 + 145 + 232 + 232 + 100 + 144 + 633 + 231 + 232 + 100 + 144 + 643 + 110 + 111 |
| MALES. Under 5 year. 59 10-14 15-19 27-24 25-29 30-34 35-34 45-54 55-51 77 and FEMILIN Under 5 years. 19 10-24 10-34 10- | 1863 907 30 11 17 17 58 71 114 116 117 1.65 2.7 10 41 41 42 43 44 45 45 47 47 47 47 47 47 47 47 47 47 | Respi Death 1907. 2.12. 3.13. 3.53. 1.54. 1.55. 4.77. 4.77. 4.77. 4.77. 4.77. 4.78. 5.7. 2.4. 4.3. 5.5. 0.7. 11. 2.6. 3.6. 3.6. 3.6. 3.6. | 1863. 17.15 .8739 .2739 .4499 .4491 .1.41 | 14.51 -54.8 -34.5 -34.5 -34.5 -34.5 -34.5 -34.5 -3.76 -3 | Per cent., increase or decrease. -15 -37 -481 -492 -293 -294 -494 -496 -197 -475 -488 -496 -496 -496 -496 -496 -496 -496 -496 | Deat 1868 | Cane 1907 38 12. 23. 100 214. 204. 837 23 343. 243. 244. 345. 310. 310. 344. | Ratir868. | 0.21 0.21 0.38 0.54 1.97 4.33 7.20 7.67 | Per cent., increase of decrease, |
| MALES. Under 5 years 59 10-14 11-10 21-24 22-59 35-11 35-11 45-14 15-11 T-tel FEMALIS Under 5 years 19 10-21 10-2 | 180X 007 30 11 17 40 40 57 11 124 148 100 117 1,000 870 40 40 40 40 40 40 40 40 40 4 | Respi Death 1907. 2.12. 39 39 33 135 135 291 477 119 4.7 tr 11, 34 37 24 4.3 tr 240 386 | ratory, Rail 1868. 17.15 | 1907. 14-51 -548 -305 -305 -305 -317 -1.12 -1.61 -2.57 -4.38 -7.88 -3.76 12.40 | Per cent., increase or decrease. —15 —37 —23 —16 —17 —37 —37 —47 —47 —48 —55 | 1868 | Cane ths. 1907. 35. 12. 23. 106. 214. 244. 204. 837. 310. 43. 23. 43. 210. 310. 310. | erous, Rat 1868. 0.92 0.95 0.11 0.22 0.56 0.1.44 2.14 0.20 0.56 0.15 0.19 0.15 0.19 0.15 0.15 0.15 0.15 0.15 | 0.21 0.38 1.20 0.38 1.20 0.38 1.20 0.38 1.20 0.38 | Per centt., increase or decrease + 200 + 80 + 145 + 252 + 232 - 232 - 100 + 86 + 146 + 146 + 146 + 146 + 146 + 147 + 147 + 147 + 147 |
| MALES. Under 5 years 59 10-14 15-19 20-14 25-29 30-33 33-31 35-31 45-54 55-54 65-71 Total FEMMIS Under 5 years 19 10-41 | 1895 097 39 117 147 47 47 47 149 119 119 119 119 119 119 119 | Respi Death 1997. 2.12. 39 83 195 155 291 477 477 477 477 477 478 55 07 67 67 67 68 886 | ratory, Rail 1868. 17.15 - 873 - 879 - 449 - 1.04 - 1.04 - 1.04 - 1.04 - 1.04 - 1.04 - 1.05 | 1907. 14-51 -548 -548 -5510 -847 -1.12 -1.61 -2.57 -4.38 -19.80 -11.10 -1.11 -0.17 -0.06 -1.10 | Per cent., increase or decrease. -15 -37 -481 -492 -293 -294 -494 -496 -197 -475 -488 -496 -496 -496 -496 -496 -496 -496 -496 | Dear 1868 | Cane 1907 38 12. 23. 100 214. 204. 837 23 343. 243. 244. 345. 310. 310. 344. | erous, Rat 1868. 0.92 0.95 0.11 0.22 0.56 0.1.44 2.14 0.20 0.56 0.15 0.19 0.15 0.19 0.15 0.15 0.15 0.15 0.15 | 0.21 0.38 1.20 0.38 1.20 0.38 1.20 0.38 1.20 0.38 | Per centt., increase or decrease + 200 + 80 + 145 + 252 + 232 - 232 - 100 + 86 + 146 + 146 + 146 + 146 + 146 + 147 + 147 + 147 + 147 |
| MALES. Under 5 years 59 10-14 15-19 21-24 25-29 30-34 35-34 45-54 65-71 Total FEMALIS Under 5 years 19 11-4 11-4 11-4 11-4 11-4 11-4 11-4 1 | 1863 907 30 11 17 17 58 71 114 116 117 1.65 2.7 10 41 41 42 43 44 45 45 47 47 47 47 47 47 47 47 47 47 | Respi Death 1997. 2.12. 399 391 391 391 477 477 477 477 477 477 477 477 477 47 | ratory, Rain 1868. 17.15 | 14.51 - 44.54 - 45.8 - 45.8 - 51.0 - 84.7 - 1.12 - 1.61 - 2.57 - 4.38 - 19.80 - 3.76 - 11.2 - 12.40 - 11.2 - 12.40 - 12.40 | Per cent., increase or decrease. —15 —37 —23 —16 +40 —24 —47 —3 —36 —47 —41 +41 +42 —5 —41 —41 —41 —41 —41 —41 —41 —41 —41 —41 | Dear 1868 | Cane this. 1907 | erous. Rati 1868. 0.02 0.05 0.11 0.22 0.56 1.44 2.14 0.20 0.15 0.41 0.75 0.41 1.80 0.53 | 0.30 0.30 0.184 0.184 0.184 1.97 1.433 7.20 0.67 0.21 0.38 0.38 0.38 0.38 0.38 0.38 0.38 0.38 | Per cent., increase or decrease, |
| MALES, Under 5 year- 59 10-14 15-19 20-24 25-29 30-34 35-34 45-54 55-74 75-81 Total FEMILIS Under 5 years 10 10-14 | 1895 007 30 11 17 147 147 148 148 148 157 17 17 17 17 17 17 17 17 17 1 | Respi Death: 1907. 2.12. 399 393 198 198 477 477 477 477 477 477 477 477 477 47 | 1868. 17.15 .8739 .279 .449 .419 .411 .41 .41 .41 .41 .43 .56 .40 .85 .85 .85 .85 .85 .85 .85 .85 .85 .85 | 1907. 14-51 -548 -305 -305 -305 -305 -305 -305 -305 -305 | Per cent., increase or decrease. —15 —37 —43 —16 —42 —44 —40 —47 —3 —47 —41 —43 —5 —41 —43 ——11 —43 ——11 | Dear 1868 | Cane 1907 38 12. 23. 100 214. 204. 837 23 343. 243. 244. 345. 310. 310. 344. | erous, Rat 1868. 0.92 0.95 0.11 0.22 0.56 0.1.44 2.14 0.20 0.56 0.15 0.19 0.15 0.19 0.15 0.15 0.15 0.15 0.15 | 0.21 0.38 1.20 0.38 1.20 0.38 1.20 0.38 1.20 0.38 | Per centt., increase or decrease + 200 + 80 + 145 + 252 + 232 - 232 - 100 + 86 + 146 + 146 + 146 + 146 + 146 + 147 + 147 + 147 + 147 |
| MALES. Under 5 years 59 19-14 15-19 25-29 30-34 30-34 45-14 15-11 T-tell FEM M I > Under 5 years 9 19 19 10 11 12 13 14 15 15 16 17 18 19 19 19 19 19 19 19 19 10 11 12 13 14 15 16 17 18 | 1895 001 300 11 1 12 1 13 1 14 2 14 2 14 2 14 2 14 3 15 2 16 3 17 3 18 | Respi Death 1997. 2.12. 399 53 1.15 2.14 777 477 477 477 4.739 4.7 | ratory, Rail 1898. 17.15 | 14.51 548 548 548 5510 847 1.517 2.527 4.388 19.80 3.76 3.76 12.40 0.17 0.17 0.47 | Per cent., increase of the cent. increase of the cent. It is a second of the cent. It | Dear 1868 | Cane ths. 1907. 3.5 3.5 3.7 2.3 2.3 2.3 2.4 2.4 2.0 4.3 2.0 4.0 2.0 4.0 4.0 4.0 4.0 4.0 | erous. Ratir 868. | 0.18 0.54 1.97 2.67 0.18 0.54 1.97 2.67 0.18 0.18 0.54 1.97 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18 | Per cent., increase 0 decrease, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| MALES. Under 5 years 59 19-14 15-19 25-29 30-34 30-34 45-54 65-54 FEM M 1 Under 5 years 9 19-14 | 1895 007 30 11 17 147 147 148 148 148 157 17 17 17 17 17 17 17 17 17 1 | Respi Death 1997. 2.12 3.9 3.9 3.3 1.15 2.11 3.0 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 | ratory. Rail 1868. 17.15 | 1907. 14.51 -548 -548 -510 -847 -1.12 -1.61 -2.57 -4.38 -19.80 -11 -0.17 -0.00 -1.10 -1.2 | Per cent., increase of the cent. increase of the cent. It is a second of the cent. It | Dear 1868 | Cane this. 1997 | erous. Rati 1868. | 0.18 0.54 1.97 2.67 0.18 0.54 1.97 2.67 0.18 0.18 0.54 1.97 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18 | Per cents, increase or decrease, |
| MALES. Under 5 years 59 10-14 15-19 20-24 25-29 30-33 33-31 35-31 45-54 55-74 65-71 Total FEMMI> Under 5 years 10-10 20-21 10-21 1 | 1895 00-7 1995 19 | Respi Death 1997. 2.12 3.9 3.9 3.3 1.15 2.11 3.0 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 | ratory, Rain 1868. 17.15 | 1907- 14-51 -5481955 -195711-19 -1,1951958 -19,20 -1,1951958 -19,20 -1,1951958 -19,20 -1,1951958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 | Per cent., increase of decrease. —15 —37 —43 —10 4 +26 —17 —43 —15 —47 —47 —47 —47 —47 —47 —47 —47 —47 —47 | Dear 1868 | Cane this. 1907 | erous. Ratir 1868. 0.02 0.05 0.11 0.22 0.50 1.44 2.14 0.20 0.15 0.41 0.75 0.15 0.41 0.75 | 0.00 0.00 0.18 0.00 0.18 1.97 1.433 7.20 0.16 0.21 0.31 0.32 1.32 1.32 1.32 1.32 1.32 0.31 | Per cent., increase or decrease, continued to the central decrease dec |
| MALES. Under 5 years 59 19-14 15-19 25-29 30-34 30-34 45-54 65-54 FEM M 1 Under 5 years 9 19-14 | 1895 00-7 111 | Respi Death 1907- 2.12. 39 39 33 193 195 477 117 59. 4.7 tr 4.7 tr 11, 34 386 386 386 386 387 477 478 488 488 488 488 488 488 488 4 | 1868. 17.15 | 1907. 14.51 -548 -305 -305 -307 -4.38 -7.88 -7.88 -7.88 -7.88 -7.88 -7.89 -7 | Per cent., increase of decrease. — 15 — 31 — 42 — 42 — 42 — 44 — 45 — 45 — 45 — 45 | Death 186X | Cane this. 1907. 1 | erous, Ratir 1868. 0.92 0.05 0.11 0.22 0.50 1.44 2.14 0.20 0.15 0.45 0.75 0.15 0.45 0.75 | 0.11 0.21 0.21 0.21 0.21 0.22 0.23 0.24 0.21 0.38 0.38 0.38 0.44 0.38 0.48 0.21 0.38 0.48 0.48 0.48 0.48 0.48 0.48 0.48 0.4 | Per cent., increase or decrease, + 2000 + 20 |
| MALES. Under 5 years 59 10-14 15-19 20-24 25-29 30-34 33-54 44-4 55-65 65-71 Total FEMALIS Under 5 years 19 10-14 | 1895 007 399 117 417 418 58 71 118 119 119 119 119 119 119 11 | Respi Death 1997. 2.12. 399 53 1.15 2.14 777 477 477 4.739 1 577 2.4 4.3 553 67 11 11 2.40 386 11 1 1 1 1 1 1 1 | ratory. Rail 1868. 17.18 | 1907- 14-51 -5481955 -195711-19 -1,1951958 -19,20 -1,1951958 -19,20 -1,1951958 -19,20 -1,1951958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 -1,1958 -19,20 | Per cent., increase of decrease. —15 —37 —43 —10 4 +26 —17 —43 —15 —47 —47 —47 —47 —47 —47 —47 —47 —47 —47 | Dear 1868 | Cane this. 1907. 1907. 1007. 1214. 123. 124. 134. 104. 107. 23. 24. 24. 24. 24. 24. 25. 26. 27. 28. 28. 28. 28. 29. 20. 20. 20. 20. 20. 20. 20 | erous. Rati 1868. 0.02 0.05 0.11 0.20 0.16 1.44 2.14 2.10 0.20 0.15 | 0.00 0.00 0.18 0.00 0.18 1.97 1.433 7.20 0.16 0.21 0.31 0.32 1.32 1.32 1.32 1.32 1.32 0.31 | Per cent., increase or decrease, |

TABLE III.

MANIMUM MORTALITY FROM PULMONARY IUBERCU LOSIS, BY SEX AND AGE GROUPS.

| Age groups | i. y | 1808. De aths. | .\gc | groups. | | raths |
|--|----------------------------------|--------------------------|----------------------------------|----------------------------------|------------------------------|--------------------------------|
| 25-34 years. 35-44 years. 15-24 years. 45-54 years. 55-64 years. | | 309 301 207 159 | 25 34 45:54 15:24 55:64 | years years years years | | 1,058 764 501 305 |
| | | | ALES | | | |
| Age great | | 1868. Deaths. | Age | groups. | | eaths. |
| 25-34 years. 15-24 years. 35-44 years. 45-54 years. 55-64 years. | | 344 332 173 | 15-24 35 44 45-54 | years years years years | | 643 483 461 210 96 |
| | | BOTH | SEXES. | | | |
| Age | groups. | DOTT | 186 Deat | ths. | 1907. Deaths. | |
| 35-44 15-24 45-54 | years years years years | | 70 6a | 15 45 | 1,691 1,548 983 974 | |

A NEW METHOD FOR THE TRANSFUSION OF BLOOD.

152 WEST EIGHTY-FOURTH STREET.

An Experimental Study. (Preliminary Communication.)

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(From the Pathological Laboratory, College of Physicians eni Sungeons, Columbia University.)

The experimental work embodied in this report was undertaken in order to secure a simple and rapid method of performing transfusion. The writer has been impressed with the technical difficulties encountered by several surgeons he has watched successfully and unsuccessfully attempting to transfuse. In every instance much delay and annoyance resulted during the freeing of the radial artery, the ligation of minute side branches, the stripping off of the adventitia, the introduction of three sutures (in the Crile method (1)), or the circular suture, when Carrel's (2) technique was employed. The exposure and preparation of the vein of the recipient was in every case easier than the manipulations needed for the artery, but even if the two vessels are laid bare by two operators, the time expended, the annoyance to both patients and operators, are not to be lightly regarded.

By my method all these annoying and at times fatal defects (i. e., fatal to the success of the anastomosis) are avoided, the entire procedure on the operating table being no more difficult than a

double infusion would be.

Instead of carefully dissecting out the artery of the donor and the vein of the recipient, cutting them across, and establishing an anastomosis by suture or some mechanical device, a bloodvessel obtained from an animal (a dog's carotid is convenient and is readily obtained), is prepared beforehand, and used for the connecting, vascular bridge.

Carrel (l. c.) and others have shown that heteroplastic vessels can be transplanted without causing clotting, therefore it was unnecessary for me to perform experiments to prove, that, for instance, the vessel obtained from a dog would not clot human blood during its short and rapid transit through the foreign artery. Nevertheless, to make assurance doubly sure, a rabbit's aorta used by me in a dog, produced no blood change, circulation being kept up for three quarters of an hour between the carotid and external jugular vein of the dog through the foreign bloodvessel. The blood current was stopped several times to facilitite coagulation, but none took place. The vessel, in this instance immersed in normal salt solution, had been kept in cold storage for seven days.

TECHNIQUE.

Preparation of the animal vessel.—A medium sized dog (fox terrier, for instance) is anæsthetized, and the entire neck region prepared for operation. A long median incision is made along the neck down to the trachea, extending to the sternum. The neck muscles on one side are drawn aside, when the vessels at once appear between trachea and muscles, only covered by a delicate sheath. With a small, blunt instrument the carotid artery is readily freed, and its lowest point ligated. The vessel is emptied of blood, by gently milking it upward between the fingers, until its facial branch is reached. An artery

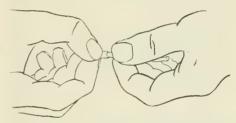


Fig. 1.—Stripping off adventitia. The left hand grasps the link with the pulp of the fingers, so as not to injure the intima. With the right the adventitia is stripped over the cut end of the vessel and then snipped off transversely.

forceps is then applied at this site, and the empty vessel cut across above the ligature and below the artery forceps.

The vessel thus obtained is at once plunged into a small basin of normal salt solution and again milked throughout its entire length, in order to remove any trace of blood before it has an opportunity to clot. The opposite carotid is obtained in an exactly similar fashion, and the dog killed by increasing the amount of anæsthetic. Possibly further experiments may show that a dog may be killed by anæsthesia and the vessel removed immediately after death without impairing the result.

We are now in possession of two vascular tubes of two and one half to three inches in length, without side branches, and of very elastic structure.

For the further preparations a set of Crile's or similar tubes (Ottenberg's (3), Buerger's (4), etc.), a pair of fine eye scissors, and two curved foreign body eye forceps are sufficient, though not indispensable. A spool of very fine silk, such as that used by Carrel, and a few very fine needles are also needed.

The *link* (as I will for the sake of brevity call the dog's carotid, which is to be used for the vascu-

lar bridge), is seized near one end, between two fingers, and the adventitia pulled beyond the inner thicker layers of the vessel, just as the foreskin is pulled over the glans during circumcision, and



Fig. 2—Passing the traction sutures. The left hand again grasps the vessel close to its end, the right passing the needle from within outward. Care must be exercised to include the intima.

snipped across where the vessel terminates (Fig. 1). The opposite end is similarly prepared.

Again taking up the vessel between the fingers, three fine silk sutures are passed approximately equidistant, from within outward, through the vessel coats, about one sixteenth to one eighth of an inch from the cut edge (Fig. 2). The sutures are tied so that each forms a traction loop. The entire manœuvre is surprisingly easy. The sutures are carried through the lumen of the Crile tube (the dog's carotid acts equally well if used on the largest or smallest size of the regular set) by means of a hypodermic wire, bent in the shape of a hook, the Crile tube steadied by the assistant, who also holds one suture, and by separating the three sutures the vessel is cuffed over the tube (Fig. 3) and secured by a fine silk ligature, tied in the upper groove.

The opposite end of the vessels is treated in the same way. The spare link may be prepared in the



ris "tuffing," the cannot The could be been drawn through the Crile tube. Vessel and tube are held in the assistant's left hand. The three sutures are separated to enlarge the lumen and remnt of culting

same way with smaller tubes in the event of some hitch or difficulty. Obtaining and preparing the links requires less than one half hour's time. If ob

If it further trial there often, I is proved unnecessary. The vessel is pushed through the tube and the edge seized at equidistant points with fine forceps instead of traction sutures.

tained aseptically and kept at 33° F. in normal salt solution, they can be preserved for at least one week.

Preparation of donor and recipient.—About one inch of the artery of the donor-in man the radial -is exposed under local infiltration anæsthesia, but no great care need be exercised in freeing the vessel from its sheath. A silk ligature is passed beneath the artery, but not tied. A vein, selected in the recipient, is laid bare in the same manner and a ligature passed. A serre-fine or Langenbeck hare lip clamp is placed at the central exposed portion of the artery and at the distal part of the vein to stop the circulation. The artery is now pulled out of the wound by means of the ligature, and with one snip of the scissors a small transverse slit made into its lumen. The edges of this slit are grasped on either side by the operator and his assistant with the curved eye forceps, and drawn apart. Through this aperture the one end of the cuffed link is intro-

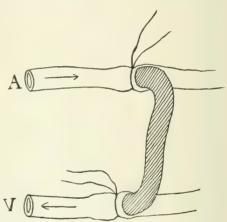


Fig. 4—Anastomosis established. Above is the artery of the donor, below the vein of the recipient. The link (shaded) has been introduced and secured in both vessels by ligature.

duced, toward the heart, and the silk ligature tied in the first or lower groove. The vein is treated similarly, and the opposite end of the cuffed link inserted toward the heart and secured in place by the ligature (Fig. 4). The serres-fines are now removed and the transfusion allowed to proceed. Throughout the manipulation both wounds should be kept well moistened with salt solution. While the transfusion is in progress the link must be supported by a gauze sponge, saturated in salt solution and covered by another moist compress.

After the exchange of blood has been effected, both artery and vein are tied off with catgut, above and below the small slit made, and the injured portion excised. The skin wound can then be closed by strapping or suturing.

The preparation of the link can be performed anywhere where aseptic procedure can be carried out. Before every transfusion time must be taken to determine whether the donor's blood does not act hæmolytically to that of the recipient—this determination must never be neglected. The actual introduction of the links is quite as simple as the in-

troduction of the so frequently used infusion cannula, and demands no greater technical skill.

The method here described has been tried only in animals, as no opportunity has so far presented itself to employ it in practice. The whole process, however, has proved itself so simple and easy of execution that I feel no hesitancy in presenting it to the profession for trial.

Further experiments are now in progress, looking to the more permanent preservation of the links. If these efforts should prove fruitful, it might be feasible to keep them on hand for an emergency, just as our suture material is now preserved.

In concluding this paper I desire to express my obligations to Dr. Baehr, of the house staff of Mount Sinai Hospital, who has assisted me throughout the experiments.

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ary, 1907, p. 18.
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(4) Buerger. Journal of the American Medical Association. October 10, 1908, p. 1233.

983 PARK AVENUE.

THE PUBLIC HEALTH PLANK. BY C. E. WOOD, M. D., Chicago,

United States Public Health and Marine Hospital Service.

In this age of impetuosity and enthusiasm, the people, including those individuals who frame the representative platforms of the political parties, frequently propose to do things for the general welfare without considering the means available and how they can legally be utilized.

First-The proposition, in short, is to create a Public Health Department with a cabinet officer to look after all the government affairs concerning the public health. This sounds as if heretofore the government had absolutely neglected the public health.

whereas such is not the case.

Secondly-How can this be accomplished? But before we take up the matter of accomplishing something it is well to consider what "all the government affairs concerning the public health' means. Some would include certain features of the Department of Commerce and Labor, such as the work carried on in examining foodstuffs for adulterations, which only incidentally bears any relation to health, and is primarily intended merely to protect merchants from unfair competition. would include the work carried on by veterinary surgeons, inspection of meat for export, another purely commercial problem devised to meet the requirements of foreign countries, where our meat will not be accepted without the government guarantee. In this connection it is interesting to note that meat that is used in a State where the animal is killed is not required to be inspected, but only when shipped from one State to another. Of course these investigations have to be made and are indirectly in relation to the public health, but it is a lamentable fact that the inspection of meat before it is consumed in the locality in which it is killed is in no way covered by the United States laws. There is a way to further protect the public health. which has already been endorsed by the leading medical societies, medical journals, etc., as well as by the United States Senate. I refer to the plan suggested by Mr. Hepburn in his bill, which has passed the United States Senate, and is now pending before the House of Representatives. He proposes to further protect the public health by imposing additional duties on the Public Health and Marine Hospital Service. To many people the mention of this service brings up an image of some antediluvian hospital building on one of the inland lakes or rivers, and they do not see the connection between this image and the public health. To those sections where there have been recent outbreaks of vellow fever or plague, when they have been in greatest need, the Public Health and Marine Hospital Service has a deeper significance. In order to give a more accurate account of what the government is really doing to protect the public health I quote from the address of Surgeon G. B. Young, United States Public Health and Marine Hospital Service, delivered recently before the Chicago Medical Society.

THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE. WHAT IT IS AND WHAT IT DOES.

While doubtless much of my subject matter is familiar to the members of this society, still the rapidly expanding functions of the Service which I have the honor to represent, and the fact that some at least of our members may not be entirely familiar with the history of its origin, and the scope of its activities, has prompted me to present a brief résumé of the subject

General History.—Organized in 1797 the Service has had an existence but little shorter than that of the nation itself, and a most interesting history, but on the greater part of this there is not time to enter; I will therefore content myself with the briefest possible outline of all but the most

recent period.

Originally this Service was intended to provide for the medical and surgical care of both the merchant and naval seamen. The organization was without much uniformity of administration in the earlier years, was supported by a small sum deducted from the wages of such seamen, was, as it has remained, under the supervisory control of the Secretary of the Treasury, and had as medical officers physicians who were appointed for local duty at various rates of compensation, and usually selected for political considerations.

In 1811 the Naval Hospital Service was given an estab-

lishment of its own.

The original Service gradually expanded in usefulness and increased in efficiency, but the organization remained practically unchanged until 1871, when it was reorganized, given a chief with the title of supervising surgeon, made subject to a formal set of regulations of universal applica-tion, and fairly started on its very remarkable career of

expansion and usefulness.

In 1873 competitive examinations for admission to the Service were instituted, and in the next few years the personnel was arranged in the three grades of assistant surgeon, passed assistant surgeon, and surgeon, and underwent a pretty complete metamorphosis, the old, local, politwent a pretty complete metamorphosis, the old, local, political appointees being gradually eliminated and going out very rapidly when regulations were made that officers should be subject to periodical change of station.

In 1889 the officers of the corps were given commissions, and placed upon the same general footing as medical officers of the army and navy.

In 1902 the increasing importance of the sanitary work of the Service lead to the enactment of a law changing the name to the Public Health and Marine Hospital Service The time allowed me does not provide for even a hurried review of the various steps by which the Service has grown to its present importance in the work of national sanitation, I can only state that the first important step was taken when the Service was given charge of the few national quarantine stations then existing. This was in 1883.

At the present time the Service consists of 129 commissioned officers, three chiefs of divisions in the hygienic laboratory, three sanitary inspectors, 237 acting assistant surgeons, forty-five pharmacists, and 831 employees. It has a fleet consisting of nine steamers and tugs, nine steam launches, seventeen naphtha and gasoline launches, and eight barges, in connection with which it has thirteen pilots and twenty marine engineers, besides the other members of the crews.

So much for what the Service is, now for what it does Under this head it seems best to first outline the duties of the Service, and then give illustration of the extent to which it has justified its existence, by the manner in which it has performed these duties. In other words, to first enumerate the things it is expected to do, and then give a few illustrations of the thoroughness with which it has

done them.

On the hospital side of the Service it provides hospital and out patient relief for merchant seamen, for the officers and men of the Revenue Cutter Service, the men of the vessels of the Light House Service, the life saving crews, the employees of the Mississippi River Commission, the crews of the vessels of the United States Army engineers engaged in river and harbor work; to foreign seamen on application of the proper authorities, and the officers and men of the army and navy when the accommodations of their services are not available. It maintains for this purpose twentyone hospitals, thirteen stations at which patients are cared for in civil hospitals under care of a commissioned medical officer, and a large number of minor relief stations. Service also furnishes medical officers for a number of the large, sea going revenue cutters.

During 1007 it treated 14,068 patients in hospital, and 40,-

161 out patients.

The next group of duties is roughly embraced under the classification of assistance rendered to various departments of the government. These include the examination for color blindness and general visual acuteness of all the candidates' for license as pilots, masters, and mates; the physical examination of men enlisted in the Revenue Cutter Service, the life saving crews, etc. In the performance of these duties the Service last year made 5,205 physical examinations.

All the immigrants arriving in this country are inspected by the Service to determine if they are suffering from contagious or loathsome diseases, or have disabilities liable to render them public charges. Of these we last year examined 1,285,349 persons, and cared for large numbers tem-

porarily detained in hospital.

I come now to an enumeration of the duties appertaining to the public health work of the Service. We examine the products of every firm or institution engaged in the manufacture of any and every kind of antitoxine, vaccine, and similar substances, and none of them can legally dispose of their output by interstate commerce without receiving our

license to do so.

We conduct a large and splendidly equipped hygienic laboratory in Washington wherein the officers of the Service and the health officers of States and municipalities can receive instruction; wherein extensive investigations in chemistry, pharmacology, parasitology, bacteriology, and practical sanitation are conducted; from which issue a large number of valuable pamphlets and monographs; and whence officers are sent to make studies of local epidemics, and special researches, as of spotted fever, hook worm discase, meningitis, and the like.

I am sure it will be a surprise to many of our members to learn that in connection with these sanitary and bacteriological investigations and exclusive of the officers permanogical investigations and exclusive of the onicers behinden neutly detailed to the Philippines, Cuba, Puerto Rico, Pan-ama, Hawaii, the Service now has officers detailed at Cal-cutta, Hong Kong, Nagasaki, Yokohama, Naples, Guaya-quil, Callao, La Guayra, and Rio Janeiro.

In this connection also it should be mentioned that we are prosecuting an elaborate study of leprosy at the Molokat Leprosy Settlement in the Hawaiian Islands, that a hospital and laboratory of the most modern type are being erected there at a cost of \$100,000, and that we have an annual appropriation of \$50,000 for the prosecution of these re-searches. I would like to go still farther into the work along this and similar important lines, but a mere enumera-tion would take too much time. One phase of our hospital work, however, merits especial mention, since it was the pioneer work of the sort in this country. I allude to the Sanatorium for Tuberculosis which is maintained by the Service at Fort Stanton, New

As far back as 1893, fully five years before any steps had been taken in this country to inaugurate national or State sanitation for tuberculosis, and nearly ten years before the great antituberculosis fight of the present day had been great antituderculosis fight of the present day had been begun, the initial gun in our campaign had been fired. I quote from the article by Passed Assistant Surgeon J. O. Cobb in the Service Report for 1893: "The great number of tuberculous cases demands some prompt action by the Government to relieve the hospitals, as well as to move the patients to a locality favorable for their recovery. The general hospital is not the proper place to treat these patients, even though there were room enough to isolate them. For climatic conditions also the various hospitals situated in different parts of the country are not conducive to the com-fort or eventual recovery of these cases. As an actual fact nearly all seamen with tuberculosis of the lungs die. These cases are discouraging to treat even in an equable climate, but far more so when the climatic conditions are more unfavorable, and nearly every station in the Service is unfavorably situated in this respect. To emphasize the fact of the great fatality of the disease more strongly, take the Service statistics for an average year, say, 1890, and we find that 756 patients of tuberculosis were treated; two recovered (the two recovered were cases of local tuberculosis), 327 improved, 113 died (20 per cent.), 86 being on hand at the end of the fiscal year. That is a large percentage of deaths, too large; and these statistics are even then unreliable to this extent: Many of the patients re-ported as 'improved' finally return or go elsewhere, and are recorded as new patients, while, in fact, they are old ones. The same patient goes out 'improved,' tries to work, gets worse, goes into another hospital, is reported as a new case, possibly goes out again as 'improved,' and so on until tast, possibly goes but again as improved, and so on the finally dies. This is the average history of the consumptive patient. I should say that, taking into consideration this fact, the percentage of deaths yearly is nearer thirty-five than twenty per cent. My experience has been that nearly all of these patients die in hospitals finally." Dr. Cobb proceeded to urge the establishment of two sanatoria for the segregation of the tuberculous among our patients. In 1895 Passed Assistant Surgeon Bratten, who a little later lost his life on quarantine duty, one of the number of officers who have given up their lives on the altar of preventive medicine, wrote an able article from which I quote as follows, pages 154, 155, 156: "In 1896 the surgeon general urged the importance of the proposed plan, and, in aid of it, began a systematic investigation of the laws or regulations of States on the subject of tuberculosis. He kept up the fight unsuccessfully until in 1899 he obtained the use of the abandoned military reservation at Fort Stanton, New Mexico, where the first great governmental sanatorium for tuberculosis was established, at which the average number of patients on hand is about 200." Passing now to a statement of some of the many other instances in which the Service has demonstrated its capacity for efficiently discharging the duties entrusted to it, I invite attention to the fact that, within a few weeks of the first announcement by Professor Koch of the discovery of tuberculin, Assistant Surgeon Geddings was sent to Berlin, and, by arrangement, made through the Department of State, was permitted to enter the professor's laboratory and study his methods; and that as early as January 2, 1891, the systematic investigation of the new treatment was inaugurated by the Service, the first work of the kind undertaken by any State or national agency in this

Again: In the preparation of diphtheria antitoxine the Service was the pioneer in this country. Roux read his epoch making paper before the International Congress of Hygiene and Dermography at Buda-Pest in September, 1894. Passed Assistant Surgeon Kinyoun was our delegate at this conference, and by September 20th the surgeon general had him at work under Professor Roux in the Institut Pasteur, and thence he went to the laboratory of Professor Behring to still further pursue his studies.

On November 9, 1899, the production of diphtheria antitoxine from toxine forwarded by Dr. Kinyoun was commenced in Washington under the charge of Passed Assistant Surgeon Geddings, the work being intended not only to give an immediate supply of antitoxine for use of the Service, but to afford instruction to State and municipal health

officers in the methods of production.

cannot even enumerate the important achievements of the hygienic laboratory in the fields of bacteriology, parasitology, disinfection, and sanitation; the researches into plague, yellow fever, typhoid, and tuberculosis, but will content myself with a brief mention of two instances of the greatest importance from both the sanitary and economic points of view.

The first relates to the work of Professor Stiles in this country, and Passed Assistant Surgeon King in Puerto Rico

on uncinariasis.

The former has conclusively demonstrated that the anæmia, malnutrition, marked indisposition for sustained exertion, and resultant social condition, usually described as which has characterized large numbers of "shiftlessness," which has characterized large numbers of the poorer class of rural whites in the South, are due to a widespread infection with the Uncinaria americana, or

hookworm.

It is difficult to exaggerate the sociological and economic importance of this discovery. Here is a group of at least five great States in which the rapidly extending industrial and agricultural development has been seriously handi-capped by the relative inefficiency of the local white labor supply, an inefficiency now demonstrated to be largely due supply, an inemercency now dentificated to be largely due to an adventitious and removable cause, while the work of the Puerto Rico Anæmia Commission, headed by Passed Assistant Surgeon King, of our Service, and Captain Asiford, of the Army Medical Corps, has demonstrated almost certainly the steps necessary to prevent infection, and quite certainly the possibility of the complete cure of the disease

certainy the possibility for the compared card among a generally infected population.

The second notable work is the recent systematic and extensive research into the milk problem. I cannot take time to indicate the scope of this great work, but its results as embodied in the Bulletin of the Hygienic Laboratory, No. 41, a volume of 750 pages, is the most systematic, complete, and important exposition of the subject of which I

have knowledge.

I come now to a brief history of the development and results of the Service control of the national maritime

quarantine.

This was practically the first public health work undertaken by the Service, and, as a result there are hundreds of people in our profession, and tens of thousands of laymen who have never gotten rid of the idea that the Service activities are practically confined to this kind of public

health work.

We began in 1883 by taking charge of two or three rudimentary sort of quarantine stations on the Southern coast. We found that the procedures of that time were probably as good as those in most parts of the world, but still little advanced beyond the standard of a century before. In the earlier years the Service had to contend with the active opposition of the State stations, an opposition born in part of the antagonisms of the local officials, who saw their occu-

pation endangered, but arising for the most part from a profound and honest mistrust of our ability to do the work. We had to justify our existence, and the history of those earlier years, when Carter and White, Murray, Guiteras, and the others were struggling to make bricks without

straw, would make an interesting story.

We developed a system of maritime quarantine, inventing machinery, originating methods, perfecting organization, until it has become the recognized standard of the world.

In the face of active opposition from many for whose protection our officers gave years of unceasing labor, and not a few sacrificed their lives, almost unknown to the profession at large, amid unceasing difficulties, the work went on until recognition born of sheer efficiency caused State after State, and port after port, to trust us for their protection; until at the present time, the entire Pacific coast is in our keeping, and only three States on the whole Atlantic and Gulf seaboard, namely, Massachusetts, New York, and Texas, are not covered by stations either operated directly by our Service, or under its supervision.

With the development of national expansion which followed the Spanish war the maritime quarantine responsibilities enormously increased. We took charge of the coasts of Cuba, Puerto Rico, the Sandwich Islands, and the Philippines. The former control ceased with the establishment of the Cuban Republic, but the work in the other countries

has steadily grown in scope and effectiveness

The work of Glennan and Lavender during the transition after the war in Puerto Rico, that of Cofer during the plague in Honolulu, and the enormous task successfully achieved by Perry in the Philippines during the Aguinaldo war and the troubled years following it, presents a succession of most brilliant achievements.

If proof was needed it is found in the facts that the territorial government of the Hawaiian Islands has made Passed Assistant Surgeon Cofer the president of the Terrirassistant Singeot Coler in presents of the Fernandian torial Board of Health, and placed him in charge of all the sanitary work of the islands; that at the request of the government of Ecuador Passed Assistant Surgeon Lloyd has been made chairman of the commission created to fight the plague in that country; that at the request of the government of Guatemala, Surgeon White has been detailed to consult with that government as to the sanitation of its ports, and that for several years past all public health work, botts, and that for several years past an public leafth work, state, and municipal, of the entire Philippine Archipelago has been placed in charge of Passed Assistant Surgeon Heiser, who combines the offices of chief quarantine officer with that of director of health for the Philippines.

An important and interesting phase of this work concerns the provisions for safeguarding against danger from yellow fever the commerce with Mexico and the Central American

states.

To do this we keep representatives in Belize, British Honduras; Ceiba, Honduras; Puerto Cortez, Honduras; Bluc-fields, Nicaragua; Coatzacoalcos, Mexico; Vera Cruz, Mex-ico; Progreso, Mexico; Livingston, Guatemala; and Port Limon, Costa Rica.

In this connection also belongs mention of the work of

the Service on the Isthmus.

When Colonel Gorgas assumed control of the sanitation of the Isthmus the task of preventing the introduction of or the Islamus the task of preventing the introduction of infection by the thousands of laborers brought from the West Indies and elsewhere was entrusted by him to Surgeon Carter, of the Public Health and Marine Hospital Service, with Passed Assistant Surgeon Perry and others as assistants. At the same time officers were stationed at Barbadoes, etc., to insure a supervision of the sources of labor supply. The Service thus being given the task of labor supply. holding the door until Colonel Gorgas could clean house.

Subsequently this work was placed under the command of Passed Assistant Surgeon Perry, and Surgeon Carter assumed and retains the post of director of hospitals, in which capacity he has charge of all the hospitals on the

I pass in conclusion to the work the Service has done in preventing and controlling epidemics of smallpox, yellow fever, cholera, and plague.

It would take a not inconsiderable volume to adequately describe this work. I must content myself with a mere mention of a few conspicuous instances, omitting entirely

the work in Honolulu and the Philippines.

In the case of smallpox I cannot even take time to touch upon the subject, extensive as the work formerly was, for the Service now considers that, outside of maritime quarantine, smallpox is negligible in an epidemicological sense, antine, smarpox is negligible in an epidemicological sense, holding that no individual and no community need have smallpox unless he or it deliberately chooses to do so.

Of yellow fever we have successfully handled seven epi-

demics in the past twenty years, besides a number of local

outbreaks of larger or smaller importance.

I do not mean that all the work in these epidemics was done by the Service, but that, as far as the laws gave us an opportunity, we have handled the work and done it

successfully.

Still, in 1893, we practically handled all of it, in 1897 much of the interstate work and much of the local work, in 1898 the same; at Laredo, two years, practically all of it, and in 1905, much of the interstate work and most of the local work, either directly, as in Lake Providence, Natchez, and New Orleans, or partially, as in Vicksburg, Gulfport.

I regret I cannot relate the work of Carter, Cobb, Murray, Geddings, and others, in prior years, but will confine

myself to 1905.

In that year, for example, we absolutely controlled the interstate movement of all passengers and freight in Mississippi, western Tennessee, extreme western Kentucky. southeastern Tennessee, and a considerable portion of Louisiana, and from Georgia to Florida supervising the entire passenger movement over about 2,500 miles of nine rail-roads, which ran from, through, or communicated with,

infected territory, for over three months, without a single case of vellow fever being imported by railway into the ter-

ritory controlled.

Wasdin on the coast, Krauss at Lake Providence, von Ezdorf at Talulla, Guiteras at Vicksburg, in the face of stupid and selfish opposition, did brilliant work; Lavender at Natchez conducted a really notable and memorably successful campaign, and White made a record in New Orleans and vicinity that has been seldom equalled and never excelled in the history of medicine.

Consider this last: Here was a city of 325,000 people,

filled with nonimmunes, swarming with infectible mosqui-toes; with miles of open gutters little better than ditches, with thousands of homes surrounded by dense vegetation, and dotted over with ten thousand of above ground cisterns and other stegomya breeding places. In this city there had occurred about 600 cases of yellow fever prior to the assumption of control by the Service, about 200 of which were then in existence. Surely a task of such magnitude

was enough to dismay even the most sanguine.
Some twenty commissioned officers, several of whom subsequently contracted the fever, were detailed to Surgeon White, about fifty acting assistant surgeons were selected and appointed for the same duty, and an army of nearly 1,400 men employed and assigned to various tasks.

Speedily the disease was checked, soon it was controlled, and long before the occurrence of the frost, which had the disease, the great task was ended, and the president of the United States could in safety make his promised

October visit to the city.

In the case of cholera, the preventive work of the Service was no less successful. In 1893 cholera was widespread in most of the territory, and epidemic in some of the ports from which our immigrants come. We stationed officers and organized preventive work, isolation, detention, disinfection at Glasgow, Southampton, Havre, Amsterdam, Bremen, Rotterdam, Hamburg, Marseilles, Genoa, and Naples. In two instances cholera reached our shores under circumstances beyond the control of the Service, but even then we were able to forewarn the authorities on this side of what was coming, and forearm them for their tasks. Where the responsibility was really ours we handled scores of ships and tens of thousands of persons from infected localities, and not one single case of cholera oc-

Now was this a series of fortunate accidents? It happened that in one case we had a control experiment. Side by side with the ships leaving Naples for this country there sailed ships bound for South America. The water was the same, the food of the same character, the people drawn from the same villages, and transported alike, until at Naples, ships and people destined for this country passed into our

Every ship we did not handle became a floating charnel house, one losing 200 of its passengers. On those we did

handle there was not one case of cholera.

The fight with plague began in 1900, when Surgeon Kin-youn announced its presence in San Francisco. Vilified, abused, insulted, arrested on frivolous charges, even his life threatened, he stood to his guns until at length the truth could be no longer denied, and finally the aid of the Service was invoked, and in 1904 the disease eradicated for the time.

In the month of May, 1907, a sailor from a local vessel was admitted to the United States Marine Hospital at San Francisco and vicinity; later two cases occurred in

Under arrangement similar to that made in New Orleans the Service assumed charge of the situation, detailing Passed Assistant Surgeon Blue in command, with numerous assistants, establishing a well equipped laboratory. have been no cases since January 30th, but the sanitary campaign and the hunt for infected rats still goes on with tan band of wigor, and we have good ground for hoping that the Service will score another signal triumph.

I am aware that I may be charged with having written in a somewhat boastful spirit. My reply is, that, if I have be tool, the telescent of concernation of the second of the se

been to state the facts to the society to the end that it might see how the Service had acquitted itself of its trust.

If to do this seems boastful it is the facts that boast, and not their narration.

Like every governmental service, from the postal service down, the rise of the Public Health and Marine Hospital Service to its present state of efficiency has met with a considerable amount of opposition. For many years almost every legislature has been beset with men outside the service who in most instances for selfish motives have endeavored to do away with civil service regulations and create some new system of conducting the business of the government, and almost always part of the programme for the general welfare is that these individuals are to hold lucrative positions.

In many instances these men were informed as to the scope of the work done in this branch of the Treasury Department and would like to have had a share in the glory of the men who have devoted their lives against colossal prejudice, born of ignorance, superstition, or jealousy, to bring the Service

up to its present state of efficiency.

So high is this Service regarded in foreign countries that the vounger officers are frequently astonished by the magnitude of respect and deference shown them while on foreign duty. The care exercised in preventing the departure of passengers for the United States afflicted with communicable diseases is highly appreciated by foreign peoples, and would be more appreciated by the American public if their attention was as frequently called to

the subject.

The recent handling of epidemics by this Service has brought it into the limelight, and much more is expected of it than formerly by the general public, which applies to this Service for all kinds of unauthorized relief and advice. In handling an epidemic it is too much to expect a poorly paid practitioner to report the first case he has had perhaps for weeks, when his living depends not on the prevention, but on the cure of disease. Some men may report the first case they see, but in the investigations at New Orleans and other places it was found that some physicians were, to say the least, a little tardy in reporting the presence of yellow fever. The average American physician rises to meet emergencies and meets them well, and in certain instances epidemics have been suppressed by individuals. In the case of late epidemics the concerted action of the men of the Public Health and Madine Hospital Service, trained for epidemic duty, empowered by the United States Government, and sworn to protect the constitution, working in harmony with the best men available in the affected locality, has been proved to be a most efficient and successful way of fighting epidemics.

The work has recently been endorsed by the American Public Health Association and other great medical organizations as well as by the United States Senate, which voices the sentiment of a large part of the enlightened and unprejudiced public. Great strides have been made, and the public mind is turning to read the truth. It is not stronge that at this period of the awakening of the body politic a few men more gifted as politicians than as scientists should rise and enlist their standard bearers and move on to Washington, hoping to shatter the

constitution by shouting their self praises from the house tops, and to inaugurate a new régime better calculated to meet their own selfish interests than to serve the public.

Mr. Hepburn's bill is as follows:

Sixtieth Congress, first session. H. R. 18.792.

IN THE HOUSE OF REPRESENTATIVES.

MARCH 6, 1908.

Mr. Hepburn introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce and ordered to be printed.

To further protect the public health, and imposing additional duties upon the Public Health and Marine Hospital Service

Be it enacted by the Senate and House of Representa-tives of the United States of America in Congress assembled. That in addition to the laboratory investigations now authorized by law of infectious and contagious diseases, the surgeon general of the Public Health and Marine Hospital Service, with the approval of the secretary of the Treasury, shall from time to time make special investiga-tions into the prevalence of tuberculosis, typhoid fever, rabies, and other diseases affecting man, the conditions in fluencing their propagation and spread, and methods necessary for their prevention and suppression. These investi gations shall include housing, occupation, and disposal of wastes, as they affect the public health. The investiga-tion of rabies shall include the preparation and use of the virus or other substance made in the hygienic laboratory for its prevention in those exposed. He is further authorized, on request of the health authorities of a State, Territory, or the District of Columbia to detail officers to cooperate with said authorities in their measures for the protection of the public health.

Sec. 2. That the results of the investigations authorized

in section one of this Act shall be published in the discre-tion of the secretary of the Treasury, and there shall also be disseminated by means of sanitary bulletins and exhibits practical information concerning the prevention or sup-pression of tuberculosis, typhoid fever, and other diseases pertaining to man, and the surgeon general shall prepare and distribute said bulletins. He shall also cooperate with the trustees of the United States Pharmacopeaa and pre-pare and publish, with the approval of the secretary of the Treasury, digests embodying the results of investigations

for use in revision of said pharmacopæia. Sec. 3. That to facilitate cooperation between State and Sec. 3. That to facilitate cooperation between State and territorial boards of health or departments of health, including the District of Columbia, and the Public Health and Marine Hospital Service, there shall be established a school hygiene for which the facilities of the hygienic laboratory shall be available. Regulations for admission to and for the conduct of said school shall be made by the surgeon general with the approval of the secretary of the Treasury. There shall be received in this school, with such limitations as may be deemed processary. State county and limitations as may be deemed necessary, State, county, and numications as may be deemed necessary, State, county, and municipal health officials, on application by the board of health or health department of any State, Territory, or the District of Columbia: Provided, That satisfactory assurance is given with the application and by the health officer himself that the special instruction desired is to be utilized in the performance of official health duties. Officers of the Public Health and Maying Health Service shell be de-Public Health and Marine Hospital Service shall be de-tailed as instructors in said school, and officers of said Service may also be detailed to receive instruction. An official, upon satisfactory completion of the course of study in sanitary science as prescribed in the regulations, shall

In sanitary science as presented in the top to be entitled to a certificate to that effect.

Sec. 4. That the bureau division of domestic quarantine and the bureau division of foreign and insular quarantine are hereby consolidated into one division, to be known as the beauty of the section so the section so the section so the section section. the division of quarantine, and there is hereby established a bureau division of water supplies and sewerage. Each of these divisions shall be in charge of a commissioned medical officer of the Service detailed and designated for that purpose, who, while thus serving, shall be an assistant surgeon

general, as now provided by law for the medical officers in charge of the remaining divisions of the bureau; and it shall be the duty of the surgeon general, under direction of the secretary of the Treasury, to investigate the pollution of interstate waters as it affects the public health and make report upon the methods necessary to prevent said pollution, with recommendation as to necessary legislation relating thereto. For this and other purposes there shall be appointed by the secretary of the Treasury, on recommendation of the surgeon general, a sanitary engineer competent to solve technical problems connected with the puribe fixed by the surgeon general, with the approval of the secretary of the Treasury, and not to exceed five thousand dollars per annum. There shall also be appointed in like manner a solicitor of the Public Health and Marine Hospital Service, who shall be familiar with the public health laws of the national government, States, and municipalities, taws of the haddrag government, States, and municipantics to aid in establishing uniform measures for the protection of the public health, and to perform such service of a legal nature as may be required. The salary of the solicitor shall be fixed by the surgeon general, with the approval of the secretary of the Treasury, and shall not exceed five thousand follows for several solicitors and solicitors are several solicitors and solicitors are several solicitors and solicitors are several solicitors. sand dollars per annum.

Sec. 5. That in addition to the conferences now authorized by law to be held between the surgeon general of the Public Health and Marine Hospital Service and the health authorities of the States, Territories, and the District of Columbia, when in the opinion of the surgeon general it is in the interest of the public health to call a special conference, to be held in Washington, of said health authorities of not more than five States and only one from each State, the said delegates shall receive a compensation of ten dollars a day, including the days of travel to and from Washington and necessary traveling expenses: Provided That not more than five such conferences shall be held in any one year and the duration of any such conference in Washing-ton shall not exceed three days. The five members of the advisory board of the hygienic laboratory now entitled by law to receive compensation when called in conference shall hereafter receive a compensation of twenty dollars a day, including the days of travel to and from Washington by the shortest practicable route, together with necessary traveling expenses: Provided, That the said advisory board, in addition to its duties as now defined by law, shall, while in conference, consult and advise with the surgeon general with respect to scientific matters relating to the public

The advantages of this bill are many. Not the least of these is the fact that it makes use of a highly organized aggregation of men already trained and experienced in public health work. By means of judicious expansion of this bureau every need of a public health department can be met.

IRON

Metallic and Magnetic, Physical and Philosophical; Its Place in Mythology, in Demonology, in Astrology. and in Medical and Surgical Therapeusis.

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(Concluded from page 028.)

It was by Monardes of Seville (in 1571) that some rational instructions regarding the internal administration of iron were published for the first time, so far as our extant medical annals now bear testimony. The principal conclusions which this iatrochemical pioneer derived from his own experience and observation in this connection were, that it improved the appetite, increased the bodily (muscular) vigor, diminished the volume of the spleen, and cured impotence. This collective accomplishment of so many of the most important feats of therapeusis represented the execution of "a very

large order," indeed; and in one of the most im- tial preparations. There are no less than half a portant departments of the Æsculapian shrine. And on the basis so founded, the clinical claims of the items of the "martial" armamentarium were allowed, almost continuously, to rest for over another century. And the persistent survival of the reputation of iron as a genital stimulant, from the date of the oldest recorded case of its internal administration down to the present day, might almost seem to justify the speculative surmise of the Galenic commentator who professed to regard the Græco-Roman tradition of the loves of Mars and Venus as a parabolic version of certain supremely important natural facts; masking, so as to conceal from the vision (and discussion) of the profane, the esoteric revelation of the potency of the properties of iron in promoting the functional powers of the sexual

The modern history of the clinical employment of the compounds of this-so generally usefulmetallic element may be said to date from its advocacy by the "English Hippocrates" in the treatment of chlorosis. Thomas Sydenham, the "Father of Modern Clinical Medicine," thereby laid the solid ("experimental" or "empirical") basis of the reputation of "ferruginous" preparations in the regeneration and reconstitution of the vital fluid within the human body. And ever since that date (1681) the therapeutic fame of "martial" remedies-in the special department of hæmatogenesis-may be said to have waxed in strength and stature (even if not invariably so in wisdom). Sooth to say, indeed, the chlorotic theory of the great English physician was not a very illuminating one-regarding, as he did, the "green sickness" as a species of hysteria (af-fectionis hystericæ); but it is only just to add that even the scientific clinician of our own day can afford to regard the haziness of his intellectual vision with sympathetic toleration, as the respective microbes of both chlorosis and hysteria seem to have hitherto successfully eluded the research of the most accomplished and enthusiastic bacteriological pathologists.

An instructive—and often very impressive—mental picture of martial therapeutics (as well as chemistry and pharmacology) may be derived from a persual of The New London Dispensatory (1676) of the then famous herbalist, William Salmon. We there find a series of thirty-one preparations of iron. The author begins at the beginning by "the purifying," and tells us that "iron well purified is then chalybs or steel; and therefore since steel is nothing but purified iron, it is far better than iron for any medicinal use." And his instructions for the process are: "R. Iron plates or bars, p.j., beech coals powdred, shavings of oxhorn, ana p.j., lay them stratum super stratum, put them into a close vessel in a wind furnace, with a strong fire, for six or seven hours." We have a Magisterium Martis vitriolatum: B. Dissolve steel in rectified spirit of vitriol, then coagulate, so have you a magistery green like vitriol." And the therapeutic properties of this preparation are: "It opens oppilations of the liver and spleen, and cures the jaundice, quartans, melancholy, cachexia, and the green sickness. Dose, 3ss. in Rhenish wine." A tint suggestive of that of saffron would appear to have inspired the application of the distinctive term crocus to some mar-

dozen of them, with special supplements. One is thus accounted for: "Crocus Martis Quercetani, the opening crocus of Quercetan. R. Spirit of sulphur and spirit of wine ana, put them into an iron ladle, and boyl them at a soft fire, till they are evaporated; then lay the ladle by for 6 or 7 days, and brush off the yellow crocus. Or thus: Anoint plates of iron with oyl of sulphur, or sprinkle filings of steel therewith; and put them in a cellar for a week; then wash off the crocus with water (which will settle) and calcine it a little to make it red. This is called calcination by illinition. It is a great opener, a true restorer and comforter of the liver, and a certain cure for the green sickness. Dose, à gr. iij ad vij." \nd of oleum ferri album we are informed that: "It opens obstructions of the liver, spleen, meseraicks and womb, cures melancholy, the black jaundice and quartans, and is excellent in febri alba, sive morbo virgineo, the green sickness; dose, à gut. iiij ad xii in broth or Rhenish wine." preparation of "Magisterium Martis Salmonianum, the author's magistery of Mars," represents a version of the modern citrate, which is interesting in its primitive crudeness: "Dissolve filings of steel in purified juyce of lemmons, digest for a month, then filter into a glass vessel, and in a sand heat inspissate to the consistence of a liquid extract. The remainder of the chalvbs, which will not go through the paper, dry, and reduce into a subtil powder for the same use, or for steeled wine." A specially ingenious combination is found in the Tinctura Martis & Veneris of that encyclopædic pharmacologist: "B. The flegm or volatile spirit drawn from the vitrol of verdigresse by a retort in sand, and put in upon filings of iron in a narrow mouthed vessel, and in about half an hour (without any fire) the essence of Venus will be impregnated with the blood of Mars; abstract the menstruum or humidity, and from the fusible crocus with s. v. extract a tinc-

The lapse of nearly three quarters of a century, till the publication of the great Dictionary of the inventor of the "fever powder," gives an opportunity of estimating the progress—not always rectilinear, and sometimes even retrograde—of medicine and its ancillary sciences in the important period which witnessed the intellectual brilliancy of Locke and Newton at home, and the more closely related investigations and results of Stahl and of Boerhaave on the Continent. An interesting illustration of the raison d'être of the early saccharated preparations of iron is found in

Mars cum succhare brasparatus: A preparation of iron with sugar. Take filings of steele, three ounces; and brown sugar-candy, 'two ounces: let them be rubbed together in a dry mortar, to a fine powder. This will certainly require great labour before the steel will be fine; though the sugar will help to break it, and is of much the same effect with it, as the salt of tartar; but may make it more pleasant in some forms. It is said to be thus made in our Hospitals. And a mode of preparation of almost antedluvian simplicity is exhibited in that of "Crocus Martis Apricins. Opening Saffron of Iron. Let thin plates or filings of iron be exposed to the air in dewy nights, and rain, until they become very rusty; then clear off the rust, and do as before, until the whole is so changed: Let all be rubbed in a Mortar, and passed thro' a fine sieve. This is the most proper aperient preparation of all that are in use; because the acids, which are in most others made use of to dissolve the iron, render it rather astringent, especinally in the primes viæ; and what the college order under

this title, with sulphur, is rather astringent than aperient." We find sometimes that our author's opinion is diametrically opposite to that of Salmon; for instance, he confidently states that: For medicinal uses, iron is preferable to steel; and the filings of iron reduced to an alcohol, or impalpable powder, are preferred, by many, to all other preparations, in promoting the flux of the menses, and in removing obstructions of the viscera, being given from twelve grains to half a dram, once or twice in a day, in pills, lozenges, or boluses.

James's treatment of the subject of iron wine throw an instructive sidelight on the chemical physics, as well as on the physiological therapeutics His instructions for the preparaof that period. tion of iron dissolved in Rhenish wine are

Put two ounces of bright iron filings into a bolt head, and add thereto twenty ounces, of generous Rhenish wine; digest them together in a gentle heat, for three or four days, often shaking the glass: Let them afterwards which will appear black and keep it in a close stopped vessel; it is of a sweetish inky taste: Pour fresh wine on the remainder, and proceed as before. Thus, also, a chalybeate wine will be obtained, but no way comparable to the former; for the particular part hence obtainable is soon extracted from the iron by the wine; the whole body of the metal not being here dissolved; so that the production is not a solution, but a tincture.

And the author's appended "Remarks" proceed as follows:

Hence it appears that iron contains one part which is soluble, and another that is insoluble, in this mild, fermented, oily vegetable acid. The former part is the noblest remedy I am acquainted with, for promoting that power in the body by which the blood is made, as often as it happens to be weakened, through a bare debility of the over-relaxed solids, and an indolent, cold, aqueous indis-position of the juices. If an excellent medicinal virtue position of the juices. If an excellent medicinal virtue may, by any experiment, be gained from metals, certainly it is this; for no virtue of any vegetable or animal substance, no diet, nor regimen, can effect that in this case, which is effected by iron; but it proves pernicious where the vital powers are too strong, whether they proceed from the solids or fluids. I have often thought whether this was not the potable sulphur of the metal, that so powerfully resists the debility of nature; a medicine infinitely superior to the boasted aurum potabile, and a medicine that Hence we see, that iron has a part not very remote from a vegetable, and even an animal nature, and which is extremely easy to dissolve.

And in discussing "A Vitriol of Iron," James makes some clinical comment which may inspire the more accurate scientific thought of the reader of today:

We know that when iron filings are taken in female disorders, where the body is weak, languid, and abounds with acidity, the metal thus produces eructations, as of garlic and putrid eggs, on account of the acid it meets with; and nence the heat, before wanting in the body, is excited, and the excrements generally turn black, and in this case the powder of iron filings proves much more serviceable than when ever so laboriously prepared by chymistry. Whence iron is known to prove useful, if acids abound in the body, but hurtful where the body is

The painfully slow evolution of the pharmacopœial preparations of the present day is peculiarly well illustrated in the case of a remedy which has always attracted so much popular attention and secured so large a proportion of popular faith as did iron. Many of the best known names of the dawn and twilight of modern chemistry are associated with the special products of their iatrochemical invention in this department. The tinctura Martis Ludovici and the tinctura Martis Mynsichti obtained -with some inevitable Caledonian modificationshonored places in the Edinburgh Dispensatory of the early eighteenth century. The tinctura Martis Glauberi, "Glauber's tincture of steel," was placed in the London Dispensatory, with the following instructions for its preparation:

Take of Rhenish tartar, and filings of steel, of each four ounces; reduce them into a fine powder, and boil them in a sufficient quantity of spring water, in an iron pot, that two gallons may remain after six hours boiling; filtre that hot, and then evaporate it to five pints

Dr. James's comment was, however, decidedly unfavorable: "But what is intended to be done with it, cannot well be guessed; for it will neither keep. on several accounts; nor is it fit to take, because of its nauseousness."

There was also a bitter infusion due to the prescription of Lower-whose name is indelibly stamped on the history of anatomy in connection with the intercaval "tubercle" of the right auricle, and on that of physiological surgery from his pioneer practice of transfusion of blood. It was thus prepared:

Take of the tops of wormwood, and the lesser centaury, each three pugils; of the seeds of carduus benedictus, six drams; of gentian root, an ounce and an half; and of the filings of steel, six ounces; let them be macerated for fourteen days, in three pints of alexiterial milk water. mix'd with one pint of the lesser compound wormwoodwater, as prepared in the London Dispensatory; and a pint and an half of the lesser compound spirit of wormwood, as prepared in the resset compound spirit of wormwood, as prepared in the same dispensatory. Let the vessel be shaken three or four times a day, and the infusion only strained immediately before it is to be used. The dose of this infusion is four or six spoonfuls, to be taken each morning on an empty stomach.

There existed in those days, too, an astringent tincture of iron, which possessed a high reputation in the treatment of pulmonary consumption as the tinctura antiphthisica. The following is Geoffroy's prescription for the same;

Take of the vitriol of iron, an ounce; Terra foliata tartari, two drams; powder them separately; then mix them by degrees in a glass mortar, rubbing them constantly. by degrees in a glass mortar, rubbing them constantly, during the mixture, till they turn to a kind of soft paste of a red colour; then pour upon them, gently, four ounces of rectified spirit of wine, which will presently acquire a red colour, and is then to be poured off by inclination from the fæces. The dose is from ten to thirty or forty drops.

And that eminent pharmacologist subscribes the information that:

It stops hæmorrhages, gonorrhæas, and the fluor albus It stops hæmorrhages, gonorrheas, and the fluor allows in women. It cleanses and dries ulcers in the lungs, and is often prescribed with advantage in consumptions, mixed with equal parts of balsam of capivi. In the preparation, I have rejected the sugar of lead commonly used, and have substituted in its place the terra foliata tartari, which extracts the tincture full as well, and free from all the inconveniences which attend the inward use of preparations of lead.

The next—and approximately modern—era in the evolution of martial therapeutics was ushered in by the publication of the views of Friedrich Hoffmann (in 1753) regarding the intimate nature chlorosis, as it gave another new and powerful impulse to inquiry and speculation in this same department of clinical theory and practice. For the pathology and genesis of the chlorotic condition had remained a profound mystery to Sydenham himself. and to his inquiring successors of the next generation. And I am glad to have the opportunity of pointing out to the readers of this Journal that the very first successful essay towards a truly scientific and enlightening account of the treatment of the various anæmias by ferruginous waters was the

work of an Irish medical man (1757), the celebrated chemist, John Rutty. Since the date of his long unrivalled work on *Mineral Waters*, the subject of "ferruginous" therapeusis has never been lost sight of in Ireland; and one of the special hopes of the present writer is that the progress of our Irish Renaissance will soon be accompanied by a renovation of the well deserved reputation of the many Irish mineral springs which have been gradually allowed to sink into an unmerited oblivion since the date of the "Union." This pioneer of modern therapeusis wrote of ferruginous waters as tonics; and emphasized their powers of promoting the digestion, improving the appetite, and increasing the activity of the circulation; also of determining a healthy intestinal peristalsis, as well as checking the discharges of diarrheea and dysentery.

The next important landmark in the history of martial therapeutics was erected by Halle (1802), and is represented by the publication of his epoch making observations on the "miners' anæmia" Anzin, and the successful treatment of the same by the internal administration of preparations of iron salts. And, as chemistry was at that time entering on its stage of modern regenerative growth, the greater solubility—or, rather say, the greater resistance to precipitation-of the organic compounds of iron was utilized in the hope of more satisfactory absorption, and of avoiding an increase of intestinal irritability where such symptom existed. Of these the tartrate ferrico-potassique has always found most favor in the eyes of the countrymen of Lavoisier. Subsequent reference will be made to its "specific" powers, in the estimate of Ricord; it formed the essential ingredient in the boules de Nancy, which figured in the Codex of 1866; and in the boules de la Grande-Chartreuse-of baptismal connotation so engagingly prepossessing! Perhaps, after all, one of the most important of modern practical hints for the administration of iron is that of Soulier: "L'acide carbonique importe également; une eau ferrugineuse doit être gazeuse, sinon elle pèse sur l'estomac."

By one of those auspicious coincidences which we find to occur in the pages of scientific, as well as in those of political, history, Halle's announcement of the recognition and satisfactory treatment of that new clinical entity was one of the special medical events of the dawn of the most active and productive of all the scientific centuries. It was at that period that the illuminating rays of the newly risen aurora of chemistry had just commenced to radiate over the firmament of the hemisphere of intellectual enlightenment and progress. From that date the mysterious necromancy of the alchemist sank below the level of the horizon of experimental philosophy, and the (perhaps sometimes too) "positive" science of modern chemistry began its auspicious century of sovereignty. The chain of events which succeeded the somatic death of its immortal founder, Lavoisier, offers an encouraging example of the appropriateness of a parallel application of the heraldic aphorism of hereditary monarchy in matters political: "The king is dead; long live the king." The fiendish votaries of "liberty, equality, and fraternity," murdered the greatest experimental philosopher of his generation, did not pretend to seek for a better motive than that they "wanted no savants" in their new and glorious republic! (It is not, of course, impossible that even a century later, and a long way nearer home, might be discovered a populous "scientific" institution governed upon precisely similar principles—although not possessed of the legal privilege of the estoppel furnished by the application of the guillotine.) From the death of Lavoisier the scientific mustard seeds of his sowing grew and increased visibly, year by year-almost day by daytill the trees of the resulting forest of scientific growth came to cast their refreshing shadows over the surface of every civilized land. And the very familiar element of iron came in for a full share of the attention. Its enormously wide distribution throughout the tissues of the representative members of the animal and vegetable kingdoms had been little suspected before the days of the methods of minute analysis, on account of the smallness of quantity usually present. The existence of this element in the colored blood corpuscles was now satisfactorily demonstrated, and it was proved to be an invariable and essential constituent. Another forward step revealed the fact that the special compound within the corpuscle, to whose formation iron was absolutely essential, was that which gave it the characteristic color-and through that medium to the mass of the vital fluid, as recognizable by the naked eye. Not long after was announced the "discovery" that iron was the true oxygen bearer of the hæmoglobin molecule; and that oxyhæmoglobin corresponded to a ferric oxide, while the reduced hæmoglobin was analogous to a ferrous. In contact with the oxygen of the air, the latter instantly became oxidized into a ferric compound. In appropriate contact with the tissues of the various constituent parts of the organism, the ferric compound was, in turn, as rapidly reduced to ferrous. And thus was the red corpuscle constituted the receiver, the carrier, and the distributor of the "life giving spirit"—i. e., the respiratory oxygen of the physiological chemistry of the nineteenth century! Hayem advanced his contributory ray of scientific light with the assertion that the red corpuscles of the blood were invariably formed by the physiological appropriation of the requisite iron by the hæmatoblasts (of his own discovery). But he never succeeded in catching the iron in process of transit. Quincke was more fortunate—in the demonstration of his own leucocytic (hypothesis of the) origin of the red cell; he established its stages by injecting a ferrous solution, and demonstrated: (1) Formation of a ferric oxide: (2) precipitation of albumin by the samein form of fine granules; (3) the incorporation of the latter by the leucocytes—where they were demonstrable by the application of ammonium sulphide, or of potassium ferrocyanide and hydro-chloric acid. The basic physiological feature is the same, whatever be the line of development: the red corpuscle is the receiver, carrier, and distributor of oxygen; by virtue of the functional powers of its hæmoglobin-that is to say, of its iron.

As soon as the discovery of the presence of iron in the most essentially characteristic constituent of the vital fluid of the animal economy had been so

demonstrated, and its modus operandi in the duplex function of circulation and respiration had been firmly grasped, the absolute necessity of its presence for the maintenance of physical health and vigorand even of life-was, of course, fully recognized. And, accordingly, the immediate induction from the data so furnished was that, wherever there existed a deficiency in the quantity or quality of the cir-culating blood, the introduction of iron into the system was the alpha of the clinical treatment; and the same reacted almost (if not quite) to the omega. Then, in the inevitable sequence of events, it soon came to be noticed that even the unlimited administration of therapeutic iron was by no means always followed by the wished for result. Accordingly, in the interest of progressive scientific truth, the necessity for an explanation was recognized. It was reported that the assiduous employment of iron caused troublesome disarrangement of the digestive functions-which might interfere with its absorption, or unfavorably influence its subsequent assimi-This gastrointestinal malpraxis was said to be (at least partially) due to the fact that the martial salts produce a local astringent action-a contraction of the blood vessels of the mucous membrane, with consequent diminution (and deterioration) of the natural secretion. Their presence was also productive-by direct influence, physical or chemical, or a combination of both-of inhibition or arrest of the activity of the digestive ferments. Further investigation gave reported results which went to throw doubt on the reality of the assimilation of any medicinal iron, and even on its absorption from the surface of the gastrointestinal mucous membrane. It was experimentally demonstrated that the quantity eliminated from the digestive canal exactly represented that introduced by the mouth! The explanation which was manufactured to meet this really startling difficulty was that the undeniable clinical influence of ingested iron on the constitution of the blood was-in a quite indirect manner-attained by its stimulation of the gastrointesti-

the indirect production of chlorophyll.

Thus the tonic action of ferruginous preparations seemed in such light to be strictly comparable to that of vegetable "bitters." Mitscherlich advanced the hypothesis that iron salts were absorbed in albuminous combination; and others suggested that the iron atom, preparatory to absorption, definitely replaced a corresponding proportion of the hydrogen of the albumin molecule. Then came forward Bunge and Podwissotzki, who enunciated the view that iron was absorbed with the ordinary digested aliments, in a state of organic combination. Of course, every one who has had any experience of chemical testing

nal surface, as a result of which the alimentary iron was more effectively absorbed. The corresponding

clinical effects of arsenical preparations in such cases lent a good deal of plausibility to this view.

Further corroboration seemed to be afforded by the

power which iron displayed in restoring the failing

verdure of plants, in presence of the fact that

chlorophyll itself was not a ferruginous compound.

So that the influence of arsenic and of iron in the

restoration of hæmoglobin to anæmic patients might

be strictly comparable to that of the latter element in

for the presence of metals in solution has had an opportunity of appreciating the presence of "organic matters" in preventing the precipitation of small proportions of the salts of iron. The former of the two last mentioned therapeutists advanced the ingenious hypothesis, to account for the action of ferruginous preparations in chlorosis, that the beneficial effects were due to its prompt combination with the alkaline sulphides that always formed a continuous series in the products of the disorderly digestion which accompanied this condition, and thus prevented the excessive waste of organic nutriment by anticipating to some extent their really destructive formation. In consecutive rotation, we have Schultz enunciating the theoretical explanation that the various members of the metallic group which includes iron, manganese, nickel, cobalt, and chromium, are all direct stimulants of cellular activity; while they impress oxygen and some other nonmetallic elements with a greater mobility, and, accordingly, determine by their presence the formation of albuminates. And with the rapidly increasing velocity of chemical progress, the inevitable crop of physical and clinical "mare's nests" sprang up in its wake. Luton (Paris, 1882) advanced the thesis that in ferruginous preparations it was the activity of the electronegative element only that was utilized in the animal economy; iron perchloride had on chlorosis the effect of the hydrochloric acid which it represented. Some observers attributed the tonic action of iron to its influence on the muscular walls of the bloodvessels; and at least one ingenious "authority" (Rossbach) affirmed that the collateral hæmostatic powers of iron perchloride were brought into evidence by contraction of the vascular walls in the direction of the longitude of the artery.

It is hardly necessary to point out that the power of coagulating albumin (which is referred to the acid rather than to the metallic elements) of some iron salts generally receives the credit of the hæmostatic influence. Some would attribute at least a considerable proportion of the salutary influence of iron on the nutrition of the system to disinfectant and antiseptic properties. Many (indeed, almost all) ferruginous preparations given by the mouth are reduced to sulphideswhence the blackening of the gastroalimentary mucous membrane and its whole contents; and this means the decomposition of putrescent gases (sulphuretted hydrogen, ammonium sulphide, etc.) and the appropriation of their sulphur. Sulphate of iron is also credited with extensive oxidation which necessarily follows the separation of its large proportion of oxygen. Kuhlmann advanced the ingenious view that iron sulphate functions as a perpetual disinfectant, by alternately dropping its oxygen to become a sulphide, and again seizing the oxygen of unstable organic compounds so as to reform as sulphate. But a special antiseptic power has been attributed to even metallic iron, and to its least soluble salts. Frankland found that bacteria which waxed strong and multiplied in sulphurous acid, and in cyanides and other deadly poisonous solutions, rapidly perished in the presence of metal-

lic iron. (!!)

Still, however, hypotheses may come and hypotheses may go, there is no disputing the fact that the proportion of iron in the blood is usually increased after the administration of iron by the digestive tract. (To this general rule I would, before proceeding further, parenthetically indicate the very important exceptions formed by the unsatisfactory results so often noticed in the attempt to treat the anæmia of chlorosis while neglecting the coexisting constipation; and the horribly disastrous ones which are necessarily produced by attempting to improve by the employment of ortho-dox ferruginous "tonic" preparations, the hæmic condition of subjects of wasting disease who are suffering at the same time—as so many of them are sure to be-from gastrointestinal irritability, congestion, or ulceration. Rapid elimination might possibly be the true explanation of the appearance of the total weight of ingested iron in the alvine evacuations. The alimentary iron is known to be eliminated, for the most part, by the bile, and in form of a phosphate—an inorganic salt. Some observers have maintained that iron administered medicinally is, in large proportion, passed out by the kidneys. There are, of course, certain solid grounds for this statement; but, as will be gathered from the views already referred to, the opinion has by no means secured unanimous corroboration. Claude Bernard has, indeed, as far back as 1854. affirmed that no increase of the iron of the portal blood followed the introduction of any of its preparations into the alimentary canal. He followed up this affirmation with the suggestive queries: "La chlorose ne serait-elle due qu'à un vice de digestion? Le fer ne peut il pas, par l'excitation qu'il produit, rétablir les actes troublés de cette fonction?" Buchheim and his pupils confirmed the experimental results and the chlorotic hypothesis of the great French physiologist. Yet we afterwards find MM. Debierre and Linossier demonstrating the absorption of iron from the digestive tube; Sir Andrew Clark making chlorosis an autoinfection of intestinal origin-which accounted for the therapeutic value of purgatives; the indication of unhealthy atmospheric influence implied in the name of "urban malaria"; and of its inherited share in the universal domain of pathological paternity in the epithet of a microbiosis. But this wheel of clinical opinion continues to revolve; and it seems hardly safe to try to stop the rotatory movement-even if the experiment were without hopeless scientific difficulty.

The ingestion of iron in excess of physiological necessity, or adaptability, or both, leads, as is well known to all clinical observers, to the development of symptoms of progressive discomfort, culminating in those of "martial" poisoning. The collective group of phenomena, so produced and exhibited, has received the inclusive denomination of siderismus. This includes the symptoms of a distressing artificial plethora, which are, necessarily, very much aggravated by the constipation which coexists. There is violent arterial pulsation—most conspicuously felt in the carotids, accompanied by distressing palpitation, bursting headache, and all the other symptoms of active cerebral congestion—even febrile temperature, intense flushing of the face, in-

jected conjunctivæ, tinnitus aurium, etc. As indications of the resulting gastrointestinal irritation and congestion, there is great epigastric tenderness. with a feeling of depressing weight and dull pain; and the necessary coexistence of darkly furred tongue, impaired appetite or complete distaste for food, and irregular repetitions of troublesome tormina or colicky spasms. But in cases in which the gastrointestinal mucous membrane had previously been in a very irritable—congested or ulcerated—condition, the additional irritative stimulation produced by the ingestion of preparations of iron will be found to give rise to continuous diarrhea; and to aggravate this symptom when previously present. This inevitable consequence has far too often given rise to the very worst clinical results, in the hands of "practical" physicians, who, being on the blissful side of theoretical knowledge, only knew (in this connection) that the "regulation" treatment for anæmia was the natural remedy of iron-and pre-

scribed accordingly! And I gladly take the opportunity of emphasizing the fact that on this account the internal administration of iron should never be resorted to in cases in which any pronounced organic disease (or even marked irritability) of the gastrointestinal mucous membrane is known to exist. Thus, it should not be used in the treatment of the convalescence of enteric fever, or that of dysentery, till a considerable period has elapsed; and should then be administered only with extreme caution, if at all. For the same reason, it should never be employed in tabes mesenterica or in pulmonary phthisis, although I have good reason to know that it sometimes is. The fact that syrup of the iodide of iron was in the days of its juniority recommended by a prominent French physician (Dupasquier, of Lyons) as a specific cure in the treatment of the pulmonary tuberculosis of children greatly increased (and supported) the area of the reputed clinical usefulness of iron. It must, indeed, be admitted that this is one of the least irritating of all the preparations of the inorganic salts, as the presence of (organic) sugar inhibits precipitation as far as possible (to a small minimum, of course).

In this connection may be mentioned a device for. the administration of iron in cases where, on account of gastrointestinal irritability, or other reasons, it might be thought undesirable to give it by the ordinary method of ingestion. Fubini, in 1885. resorted to bronchopulmonic absorption. He added 20 grammes of defibrinated ox's blood to 80 grammes of an aqueous solution of sodium chloride (0.75 per cent.). One hundred grammes of such mixture, dried by evaporation and carefully pulverized, were administered each time; and the promoter of this method of inhalation reported that 'pareilles inhalations augmentaient le nombre des hématies et de l'hematosine." The more immediately "royal road" to contact with the red blood corpuscles, and contributory formation of hæmoglobin, offered by this pulmonary route is also suggested in the inspiration of the Gallic epithet of "tonique respiratoire." In presence of the obsti-nately contradictory statements regarding the absorption of iron, to which reference has been made

in the preceding paragraphs, it is interesting to note that Buchheim (and various others) affirmed the presence of iron in nearly all secretions and excretions; and that Bistrow found that its medicinal employment could be made to double the normal proportion in milk, and hence suggested the treatment of infantile anæmia by the administration of

iron to the nurse That iron displays something of a specific "affinity" for the intestinal mucous membrane would seem to be pointedly indicated by the results of some experiments reported by Smith and Orfila, who killed a series of dogs by depositing in the subcutaneous tissue of the thigh of each 7.5 grammes of powdered vitriol (ferrous sulphate). Post mortem examination demonstrated, in each case, the presence of the characteristic lesions of gastroenteritis, with patches of congestion of the convex aspect of the liver. Those results argue strongly against the adoption of the hypodermic administration of the solutions of iron salts in cases where the usual oral ingestion has been contraindicated by the presence of gastrointestinal derangement; although this modification of ferruginous therapeusis appears at first sight an ingenious device for the profitable evasion of a formidable obstacle in the course of a pressing clinical necessity; and, as such, was at one time strongly advocated by many "practical" physicians who prided themselves on the possession of a gift of special resourcefulness in battling with disease. They demonstrate the danger of the remote (as well as local) irritation which is prone to follow. The development of gastroenteritis and of paralysis of the higher nerve centres are complications which have been found to follow the rapid passage of large doses of iron into the circulation of animals. Luton, who used dialyzed iron in experiments on hypodermic absorption, recognized effects comparable to those of a diffusible stimulant, and characterized the symptom group as ivresse ferrique. And he had recourse to a physical (mis-) statement in his advocacy of this preparation—rather strongly suggestive of the inspiration of the most pronounced specimen of the traditional "Irish bull": "La manière de prèparier cette substance prouvait qu'elle serait susceptible de traverser les membranes animales"—the guileless clinical scientist being blissfully unaware of the fact that dialyzed iron is the portion of iron solution which has not dialyzed! The only effect which Nasse obtained on repeating Luton's experiment was a local one of violent in-Hypodermic injection of citrate of flammation. iron was found by Binz to produce a general malaise in animals, which, after thirty minutes, culminated in vomiting, and gradually subsided through a lassitude of some hours. Injection of some of the (noncoagulative) double-salts directly into the blood yessels produced intestinal phenomena suggestive of the action of arsenious acid or antimony. There was extreme congestion of the large intestine and of the pelvic organs generally. The oxygen of the blood was in normal proportion, while the carbonic anhydride was greatly increased—the reverse of what follows the use of medicinal dosage,

Another item of pathological mischief which appears to have been specially prone to supervene

upon the hypodermic use of solutions of iron is the development of the renal phenomenon which was described by Kobert as the "metallic kidney" condition which comes to manifest itself as a result of the effort of the renal organs to eliminate the excess of iron that has found its way into the circulating blood. Kobert found that, in such cases. the iron accumulated in the cells of the living epithelium of the tubuli contorti, and to such a degree as to cause a manifest obstruction in the lumen of each. Apart from such exceptional developments, such a condition as chronic siderismus can, however, hardly be said to exist, for the quantity of iron absorbed by the gastrointestinal mucous membrane is far too small to occupy the functional powers of the eliminatory organs for any considerable propor-

tion of the period of diurnal activity.

Under the name of siderosis, Quincke described an interesting entity of pathological genesis, which should, perhaps, receive recognition in this connection. It is a condition in which iron is deposited in certain tissues and organs of the body in such a way as to be demonstrable microchemically-not quite satisfactorily otherwise. The iron, which is so laid down in siderosis, was derived from that of the hæmoglobin of the colored blood corpuscles; when the destruction of the latter had been effected too rapidly to permit the complete elimination; which is, in the normal state, one of the routine functions of the liver. And, after the original description and baptism by Quincke, Peters (Kiel, 1881) made two varieties: (1) Siderosis of the spleen and bone marrow, which develops, to some extent, in the majority of aged persons, and in a good many of the younger ones who have been the victims of chronic disease; and (2) siderosis of the liver, spleen, and bone marrow, which is found to be associated with the fatal intestinal catarrh of infancy. (In discussion of these pathological curiosities, it is, of course, necessary for readers and hearers to bear in mind that the term "siderosis" has also been utilized to denote the condition of lung which is generated by the inhalation of particles of steel, and which is but too fatally familiar in all manufactories of cutting and pointed steel instruments. On account of this very efficient source of ambiguity, it is desirable that the former should be always referred to as "Quincke's sidero-

With the unprecedented expansion of the domain of chemicophysical research in the latter half of the past century, new chemical properties-with associated clinical and collateral applications-revealed themselves to the observation of the empirical explorer. It was determined that iron precipitated many other metals from their solutions by virtue of its physicochemical property of being (atom ranged against atom) more electropositive than they. The recognition of this physical relationship led Dumas and Edwards to propose the employment of iron, "reduced" by hydrogen, as an antidote in cases of poisoning by the salts of copper, of mercury, and of lead. Then Berthold and Bunsen proposed the treatment of cases of poisoning by arsenic ("arsenious acid") by administration of moist (freshly precipitated) ferric oxide (peroxyde

de fer gélatineux). With it, especially in presence of a little free ammonia, arsenious acid forms, in the intestinal serosity, an insoluble salt, which may

be afterwards eliminated in safety.

Special manifestations of contact action were noted and commented on. M. Burq would even explain the success of ferruginous therapeusis in chlorosis as a special item of his favorite metallothérapie. The local improvement of erysipelas attributed to various preparations were declared by some clinicians to be a manifestation of alterative properties, and by others-more "modern," indeed -to be due to antiseptic, microbicide powers. The employment of "dialyzed" iron, i. e. (lucus a non lucendo) of the iron which had not traversed the dialyzing membrane, was specially recommended by Da Costa and Luton for the purpose of hypodermic medication. The local caustic action of concentrated solutions is accounted for by the affinity of iron and albumin; the good effect of the perchloride salt-that most frequently used-in the local treatment of diphtheria has, by some, been credited to

antisepsis.

In the pursuit of the growth and development of our combined scientific and clinical knowledge, the only safe, and the only justifiable, attitude which can be adopted in summarizing our scientific and clinical knowledge of this very important element is to admit, freely and frankly, that our most reliable and clinical data in this connection are those which have been furnished by empirical observation -not by scientific experiment or physical demonstration. The undeniable results of all collective clinical research go, I believe, to prove that, while the preparations of this metal form a practically "specific" means of cure in the anæmia of chlorosis, they are not to be so fully relied on in the management of other varieties. The same mass of testimony goes to prove that in order to obtain the full benefit of its blood-making power, free action of the bowels must be maintained throughout; also, so far as I have personally been able to ascertain, that they are most reliably secured when the administration of iron is combined with that of arsenic. The many other actions, real and imaginary, which have at various times and seasons been attributed to the preparations of this metal, are, at least for the most part, well known, in a general way, to all well informed practitioners; while a considerable proportion of the views therewith associated are not, in the present state of our knowledge, of sufficient importance for special critical discussion. The bird's eye historical view furnishes, indeed, many curious items of anticipation of modern practice, conceived in the ages of prescientific obscurity. The use of baths of solutions of salts of iron—as tonic and specifically cutaneous reagents-in the classic Roman centuries, surely had their prophetic significance. And the emphatic aphorism of the celebrated syphilographer, Ricord, that the tartrate ferricopotassique was "the born enemy of phagedæna"—in the treatment of which he used this salt both locally and internally-pretty surely owed its genesis to some corresponding revelation of the light to come. The uses of therapeutic iron, which are unquestionably beneficial, and to which I have referred in the course of this communication, may, in many instances, be attributed to some similar inspiration. Some wise physician said—or surely should have said—that the most valuable advice which the physician gives to the average member of his clientele is that of Punch to young men under special trying circumstances of consultation: "Don't!" The patient and his friends are usually but far too ready to do a great deal too much. And if the writer of this article could but hope that its perusal would contribute to check, permanently, the prescription of "tonic" iron in the anæmia of the intestinal irritability of tubercular disease (to say nothing of the respective associations of fever, infancy, and senility), he would hug himself with the gratifying self-satisfaction due to the assurance that his professional life had not been lived in vain.

34 YORK STREET.

A CASE OF ADIPOSIS DOLOROSA WITH INVOLVEMENT OF THE LARGE NERVE TRUNKS.*

By P. N. Bergeron, M. D.,

Among the number of cases of adiposis dolorosa reported since the publication of the original papers of Dr. F. X. Dercum, very few have presented the interesting symptom group present in the case which it has been my good fortune to study.

CASE.—The history is that of a middle age woman, forty-five years of age, from the Out Patient Department of Jefferson Medical College Hospital. Through the courtesy of Dr. F. X. Dercum I have the privilege of presenting it

to the society for your discussion.

The family history is as follows: The father died at the age of sixty-four years, after a succession of apoplectic age of sixty-four years, after a succession of apoplectic strokes. He had been a constant user of alcohol, frequently indulging to excess. The mother died of pneumonia at the age of eighty-four years. She had been blind for thirty-two years. The cause of the blindness was probably chronic glaucoma. One brother died of pneumonia at the age of thirty-four years. He had been a diabetic for ten

years prior to his death.

The previous history of the patient is rather interesting. She had measles during childhood, and at the age of twenty-seven years suffered for three months from trau-matic spine. Three years later the patient began to suffer from a curious condition which recurred at frequent intervals until the present illness developed. During these attacks she suffered from numbness in the fingers which at times amounted to pain. A few minutes afterward the fingers became pale, cold, and felt as if they were being fingers became pale, cold, and telt as it they were being squeezed. This was again followed by a tingling and burning sensation. While the phenomenon lasted she was unable to feel or hold anything. At the age of thirty-five years she had a severe attack of influenza, with a protracted convalescence. The menstrual function began at the age of nineteen years. The periods were regular, somewhat painful, lasting six to seven days, the flow being copious. She was married at the age of thirty-two years. She was married at the age of thirty-two years. Although three times pregnant, gestation always terminated in miscarriage. Her husband had eight children by his former wife, two of them died in infancy, six are living and well. The menopause occurred at the age of thirty-seven years. Soon after the onset of menopause she began to grow stout, and in two or three years her weight had increased from 125 to 170 pounds.

The patient never used alcohol, nor could a history of syphilis be elicited. From the time she left school, at the age of nineteen years, until her presnt illness, she has always been actively employed; before her marriage as a worker in factory, and afterward with the care of house-

hold duties

The present illness began three years ago, with pain in the outer unface of the right arm and shoulder. In a

^{&#}x27;Read it a meeting of the Normalogue A Society of Philadelphia,

week or ten days the pain had extended to the forearm and hand. A week later the same phenomenon occurred in the left arm. Seven to twelve days subsequently it was also felt in the outer areas of the right thigh, which soon extended to the leg and foot. It was only a short time afterward that the same condition occurred in the left leg. The pain at times would be burning in character, while at other times it was dull and aching. Within two or three months of the onset the patient began to experience weakness in the knees and feet; she would stumble and frequently fall. Weakness in the arms and hands developed somewhat Weakness in the arms and hands developed somewhat later. Vomiting and diarrhoad were frequently present. Chilliness, numbness, tingling, and burning sensations in the extremities, as well as palpitation of the heart, fullness in the head, dizzines, and blurring of vision were often experienced. The skin was dry, the throat parched, and at times great thirst was complained of. Coincident with the vomiting she would have frequent and painful mictu-

She received treatment for general rheumatism, with slight or no abatement of the symptoms. Within the past year the patient began to have shooting pains in the hips, year the patient began to have shooting pains in the inps, along the spine, in the head, eyes, joints, especially in the small joints of the hands, and at different spots on the trunk. Her hand became very weak, and for a time her fingers were in a state of contraction. She became ex-

hausted easily, and her sleep was disturbed.

In her present state the patient complains of burning pain in the hands, arms, shoulders, feet, legs, hips, along the spine, in the occipital region, across the temples, in the the spine, in the occipital region, across the temples, in the eyes, the sides of the chest, and across the abdomen. These pains recur at frequent intervals, and at times are shooting in character. She is very nervous, irritable, emotional, and very forgetful. Often has sensation of numbness in the hands, arms, and legs, and at times has flashes of heat. buzzing sounds in the head, headache, dizziness, palpitation of the heart, and shortness of breath. Frequently there are attacks of epistaxis and vomiting. On few occasions blood has been vomited. Her flesh is very tender and bruises easily. Slight blows cause discoloration of the skin. She is easily fatigued, and during the past year her eye-

sight has been failing.

Examination.—The patient is five feet six inches tall and weighs 175 pounds. There are circumscribed accumulation of adipose tissue in the bursæ about the elbows, and at two of the metacarpophalangeal joints of elbows, and at two of the metacarpophalangeal joints of the right hand. The skin is dry, the subcutaneous adipose tissue is very sensitive, it lacks firmness and imparted to the palpating fingers the impression of masses of worms. There is no true Romberg sign. The gait is that of a weak person, and all reflexes are diminished. The grip of both hands is very weak, and there is marked weakness in all the muscles. There is, however no aparent may differ a trustee the state of the sta is marked weakness in all the muscles. There is, however, no apparent muscular atrophy. All large nerve trunks are very painful upon pressure. The heart is hypertrophied and the valvular sounds exaggerated. The pulse runs from 80 to 90 beats per minute, and there are slight atheromatous changes in the peripheral arteries. The liver is not enlarged and the spleen is not palpable. The uterus is senile and retroverted. Ovaries are not palpable. Examination of the eyes by Dr. LeFevre is as follows: Media clear; disc, obliquely oval; and the margin. Blurred. There is some absorption of the retinal pigment. Fundus otherwise healthy. She has a high compound myopia. Blood examination: Hæmoglobin, 80 per cent.; erythrocytes, 4,500,000; leucocytes, 8,000. The urine is negative except that the specific gravity is low, being 1.006. The treatment consisted of the administration of six grains of thyreoid extract and 25 grains of aspirin daily, as well as light massage. Although the treatment has only been instituted a short time I am able to report marked improvement. Recently the aspirin was discontinued and the thyreoid extract gradually increased, until she is now taking twelve grains daily.

taking twelve grains daily

Conclusion.—The points that I especially wish to bring to your attention are: First, the marked pain elicited upon pressure over the large nerve trunks; second, the sensitiveness of all of the subcutaneous adipose tissue; and, third, the presence of so few circumscribed masses of adipose tissue.

1832 GIRARD AVENUE.

Our Benders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

accided upon, the further questions are as follows:
L.X.X. How do you treat asphywia neonatorum.'
(Closed November 16, 1908.)
L.X.X.V.—Howe do you treat chronic eczema? (Answers due not later than December 15, 1908.)
LXXXII.—How do you treat chronic lead poisoning?
(Answers due not later than January 15, 1909.)

(Answers due not later than January 15, 1909.)
Il hover unswers one of these questions in the manner
most satisfactory to the editors and their advisers will
receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely
on the value of the substance of the answer. It is requested
(but not REQUINED) that the answers be short; if practicable, no one answer to contain more than six hundred

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish.
All papers contributed become the property of the Journal.

OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION. The prize of \$25 for the best essay submitted in answer to question LXXIX has been awarded to Dr. Samuel Sal-

inger, of Chicago, whose article appears below.

PRIZE OUESTION LXXIX.

TREATMENT OF SICK HEADACHE. BY SAMUEL SALINGER, M. D.,

Chicago.

The treatment of such an affection as migraine or sick headache is as varied as are the causes to which the disease may be attributed. In the absence of a specific actiology or pathology, we are compelled to closely interrogate the patient's history, both hereditary and personal, for available clues upon which to base our treatment, certain factors being generally recognized as having a direct or indirect bearing on the development and course of the affection. Among these are the inherited nervous temperament, a family history of migraine, epilepsy, hysteria, neurasthenia; the uric acid diathesis, digestive disorders, nervous strain, overwork, anæmia, various functional excesses, eye strain, and deficient activity of the thyreoid gland. As a rule, it will generally be found that two or three of these factors predominate in each particular case, and that consequently the success of the treatment will depend upon the accuracy with which the individual is studied.

As a matter of routine there are two procedures which should never be omitted; these are a careful examination of the eyes, and a thorough uranalysis. The eyes should be "refracted" under the influence of a mydriatic by a competent oculist, and the slightest error corrected. Furthermore, the extrinsic ocular muscles should be carefully tested, for it often happens that in the absence of a refractive error, merely the imbalance or weakness of one of these muscles has been found to be at the bottom of the trouble. and proper stimulation by the galvanic current has effected wonderful results. In all cases if the first examination is negative it should be repeated within a month or two.

A careful volumetric examination of the urine is

necessary to determine the standard of the patient's metabolism. Deficiency of the urea output, excess of uric acid, the presence of oxalates or indican, all demand special treatment. Exercise, fresh air, and attention to the digestion will assist the metabolism and insure a normal excretion of urea. Excess of uric acid can be combatted by restricting the diet in such articles as meats, rich foods, acids, and alcoholics, and by the use of the salicylates with the citrate or acetate of potassium. The presence of oxalates in the urine demands a carefully arranged diet, attention to the digestion, and the administration of the mineral acids, the nitrohydrochloric being preferable. When indican is present one's efforts should be directed toward promoting normal intestinal digestion and preventing putrefaction. Tonics and intestinal antiseptics are, therefore, in-

As mentioned before, it has been suggested that deficient activity of the thyreoid gland may have some influence over the course of this disease. Cases of migraine have been reported as being greatly ameliorated during gestation, a period at which we know the thyreoid to be functionally very active. Therefore where we have reason to suspect an overactivity of the gland, the thyreoid extract

should be given.

Patients of nervous tendencies must be cautioned against irregular habits. They should get sufficient sleep, plenty of fresh air, a moderate amount of exercise, and plain, wholesome diet. They must avoid worry and nervous influences, since these tend to maintain a state of depression and low vitality. It is well to encourage the patient by judicious talks, to exercise his own will in suppressing these nervous tendencies. This is especially essential in cases of excessive sexual or alcoholic indulgence. By healthful recreations and moderate exercise we can do much to occupy a mind that would otherwise gravitate to disturbing excesses.

The digestion is a point that demands careful consideration, since most writers are agreed as to its importance in bearing on this trouble. Digestive disturbances seem to account for a large majority of the attacks which a migrainous patient experiences. The diet should be as plain as is compatible with sufficient variety to avoid monotony—cold lunches, heavy meats, spicy or greasy foods, pastries and alcoholies must be interdicted. We may assist

further by giving tonics and digestants.

In addition to our efforts at removing the cause of the trouble and the general tonic, and reconstructive treatment, it is often necessary between attacks to resort to palliatives for the relief of the nervous irritability and fits of depression that so often obtain. These symptoms can generally be relieved by small doses of fincture of gelsemium and tincture of Indian cannabis, either separately or in combination.

As for the treatment of the attack itself it is possible to abort, or at least temper, the severity of the symptoms by prompt measures in the prodromal stage. The patient should be put to bed, the room darkened, and all noises excluded. The intestinal tract should be thoroughly emptied by the administration of a dose of salts. Locally, hot or cold compresses, according as the type is anæmic or con-

gestive, afford much relief, as also does the use of camphor or ammonia by inhalation. Occasionally the topical application of menthol to the supraorbital and infraorbital foramina and other neuralgic spots is a source of great comfort and may be advantageously employed. When there is much nausea food should be withheld and the stomach lavaged with warm water containing sodium bicarbonate and a few grains of menthol. In addition, a hot water bottle or mustard poultice applied over the epigastrium will afford relief.

Internally it generally is necessary to give an anodyne. Codeine and phenactine are best administered with a small dose of atropine or caffeine citrate to overcome their depressing influence on the citrate to overcome their depressing influence on the circulation. Aspirin occasionally affords relief, disadvantage of being irritating to the stomach. Where tolerated it should be given in 10 to 15 grain doses. For a day or more following the attack the diet should be mainly liquid. The patient should avoid reading or writing or sewing, should be carefully shielded from strong light, loud noises, and other disturbing influences, quiet pleasant surroundings and cheerful companions being more conducive to prompt recovery.

In conclusion, the points to be emphasized are

these:

1. The wisdom of avoiding opiates in view of the chronicity of the disease.

2. The importance of general tonic and recon-

structive treatment.

3. The necessity for individual rather than routine treatment and the proper elimination of all possible causative factors.

1023 EAST GARFIELD BOULEVARD.

Dr. Samuel Stalberg, of Philadelphia, observes:

1. The Attack.-Many patients can foretell the approach of the attack by experiencing such premonitory symptoms as general malaise, sense of pressure in the head, and dizziness, lasting for from a few hours to a day or two, followed by the appearance of spots before the eyes, scintillating scotoma, and hemianopsia, and more rarely, auditory disturbances, paræsthesia, and aphasia. sensory symptoms last for several minutes to half an hour, and in some patients are the only premonitory symptoms. But upon the first appearance of any of these prodromal symptoms, treatment should begin. The patient should be put to bed in a quiet, semidark room, and all sources of noise or confusion removed. A hot mustard foot bath should be given. A saline laxative, either an ounce of Rochelle salt, or a tablespoonful of magnesium sulphate, sould be administered. If the attack develops soon after a meal, grain 1/10 of apomorphine hydrochloride hypodermically or wine of ipecae and war n water should be given for emesis. The following should then be given:

This may partly abort the headache, but should be given every two or three hours during its continuance, if severe. The acetphenetidin in the prescription may be replaced by antipyrine; and less preferably acetanilide; indeed, as the effect of these analgesics often wears off, it is often necessary to use them alternately, at one time one drug, at other times another. In cases with severe headache, codeine, grain 1/8 to 1/4, may be added. Indian cannabis, grain 1/4 of the extract, of known strength, is a good palliative to add to the before mentioned mixture in some cases. In cases with a rheumatic history, sodium salicylate, grains xx, should be added to the mixture. Applications of cold water cloths or an ice bag should be made to the side of the head; although, as is often the case with hydrotherapy, hot applications sometimes afford greater relief. In the severer cases a hypodermic injection of morprine, grain 1/8 to 1/4, may be necessary. But in giving either the morphine or the coal tar products, due precaution should be taken against the patient becoming addicted to their use. He should never be permitted their use on his own account.

Strong tea or coffee is often beneficial during the attack. A mustard plaster over the nucha or over the course of the pneumogastric nerve in the neck, or menthol or chloroform liniment applied over the

same area, is often of benefit.

2. Prophylaxis.-Without stopping here to discuss the various theories regarding the nature of sick headache mechanism, suffice it to sav that we are justified, from the symptoms, in assuming the primary place of irritation to be in the brain itself; the gastric symptoms, nausea and vomiting, being manifestations of reflex nervous action rather than due to gastric disturbance. Now, what are the sources of irritation? The chief and most important is the eye-eye strain. In all cases of sick headache the eye should be subjected to a searching examination by a competent ophthalmologist. and any error of refraction or of muscular trouble, hyperopia, astigmatism, etc., corrected. And often when relief is not obtained at first, repeated examinations by the same or a different ophthalmologist will finally disclose the trouble. Such procedure will save in a good many cases the profuse dosing of the victim, or the sacrifice of time and money in sending him unnecessarily to some distant climate. In this connection it might be said that often in the attack due to this cause the instillation into the eve of an atropine solution will relieve the pain promptly. But in a great number of cases no eye trouble can be found, and glasses do not all relieve. Then we must look for other underlying conditions. are gout, lithæmia, rheumatism, digestive disturbance, anæmia, neurasthenia, and sometimes also dental caries, and diseases of the nasal chambers and their accessory cavities. All these conditions must be treated on the broad principles applicable to each one. Treat the patient, not the disease.

Constipation, with the resulting retention of waste products, should be treated by securing regular bowel evacuation; rheumatism and gout by salicylates and colchicum, and all three by proper diet, warm bathing, and plenty of out door exercise and fresh air. Nasal obstructions and adenoids, when clearly the cause of sick headache, should be removed. Anæmia should be treated with iron, etc. The teeth should be kept in good condition; and in a few cases correction of uterine disorders will

benefit.

Drugs for the sick headache itself are not of much use when given between attacks, but sodium bromide, grains xx, three times a day, or cannabis indica, grain ¼, or both together may be tried.

Finally, avoid exciting causes. For, whatever the underlying cause, or indeed, with no underlying cause, such exciting causes as fatigue, or more especially fatigue combined with excitement, worry, emotion, digestive indiscretion, etc., are sufficient to bring on an attack. Mental overwork should be guarded against.

· To be concluded. ·

Therapentical Hotes.

The Treatment of Lymphangeiitis. - When lymphangeiitis results from a wound on the finger. the best method of treatment, according to Stroll (Münchener medizinische Wochenschrift, November 10, 1908), is to bandage the finger with borated lint saturated with a fifteen per cent. solution of liquor alumini acetatis [the formula of the National Formulary is practically identical with the Liquor aluminii acetici of the German Pharmacopaia in diluted alcohol, and covering with gutta percha tissue. If the wound is situated near the tip of the finger, care should be observed not to turn up the gutta percha covering, so as to prevent the alcohol from evaporating. The dressing should be renewed three times daily. During these applications it is unnecessary to treat the glands. After the lymphangeiitis has subsided, boric acid ointment should be applied to the wound.

The Uses of Strychnine.-This forms the subject of an article in The Prescriber for November. 1908. The author recalls some of the applications of strychnine in diseased conditions. It is essentially a stimulant, and despite what is sometimes said to the contrary, a cardiac stimulant. To obtain this stimulating effect on the heart the administration of the drug must be continued for some time. It often fails to act on the heart at first, and for this reason the drug is often stopped just when its influence is at the point of asserting itself. Strychnine raises the blood pressure by increasing the activity of the vasomotor centre. This double effect of making the heart's action more powerful and of raising the blood pressure is of great value in many conditions of the circulatory system. It increases the activity of the respiratory centre in the medulla. a fact which should be borne in mind in cases of pneumonia. Hypodermic injections containing one sixtieth grain of the sulphate are valuable in such cases. The author remarks that many a patient with pneumonia who had been almost despaired of has recovered by this method of administering strvchnine. Under its action the respirations become deeper and the respiratory activity is greatly strength-Among the other indications in which the drug has proved useful is dyspnæa due to chronic chest affections, such as chronic bronchitis and pulmonary fibrosis. It is likewise a stimulating expectorant of considerable power, although this action of strychnine is seldom made use of. In fact, in pulmonary disease, it should be remembered that

strychnine not only stimulates the respiratory centre, but also stimulates the respiratory muscles, giving them more tone and greater power for action. In no condition are these two actions so well displayed as in emphysema, due to chronic bronchitis. Next to iodides, strychnine is, in such cases, our most useful remedy. Under its action the breathing soon becomes less labored, and the heart likewise is strengthened. As a general tonic there is no drug which can exactly replace it. By reason of its bitter property it increases the appetite. It also tones up the nervous and circulatory systems. It is, therefore, the ideal tonic for administration after all acute illnesses. Here it may be advantageously combined with a mineral acid and one of the bitter infusions, such as gentian. Cases of chronic constipation, especially when due to lack of muscle tone, derive benefit when treated with laxatives to which five or ten drops of the tincture of nux vomica have been added. The latter preparation, together with cascara, forms an extremely valuable combination.

The author recomends the administration of the

drug in the following forms:

| | \mathbf{R} | Solution of strychnine hydrochloride, B. P., m xlviii |
|---|--------------|---|
| | | Dilute hydrochloric acid, |
| | | Glycerin, |
| | | Compound infusion of gentian,ad 3vi |
| | M. | ft. Mist. |
| | Sig. | : One teaspoonful thrice daily in water after meals |
| | B | Tincture of nux vomica |
| | | Fluid extract of cascara, |
| | | Glycerin, |
| | | Peppermint water, |
| | M. | ft. Mist. |
| | Sig. | : One teaspoonful three times a day in water after |
| m | eals | |

Dried iron sulphate,gr. iiss; Extract of nux vomica,gr. 1/4. M. ft.pil. Mitte tales xxiv.

Sig.: One thrice daily after meals.

Abortive Treatment of Boils .- A combination of iodine and acetone is said (Formulaire de Pron) to be effective in aborting furuncles. The following solution is made:

After standing about fifteen hours the solution becomes black and syrupy, when it is ready to be applied.

It is best applied by means of a piece of absorbent cotton wound round the point of a wooden toothpick and saturated with the solution, this being passed lightly over the boil so as to blacken its sur-

face. Repeat in twenty-four hours if necessary.

The Pharmacy and Therapeutics of Paraldehyde.—In the course of an interesting, though lengthy disquisition on the therapeutics of paraldehyde, which is published in the Journal of the American Medical Association for November 14, 1908, it is observed that, while theoretically paraldehyde should be a stimulant and its action resemble that of alcohol, practically it is such a strong narcotic and hypnotic that its soporific and prostrating effects overcome any stimulant action that it possesses. It is noted that the first symptoms from paraldehyde are so intensely disagreeable and disturbing to the

patient that he or she will refuse to ever take the drug again. The dose of paraldehyde is from thirty minims to two fluid drachms. The following method of administering the drug is suggested in the article cited:

 Paraldehyde
 5ii;

 Olycerm
 5i;

 Water
 ad 5iv.
 M. et Sig.: A teaspoonful in plenty of water, at bedtime.

The National Formulary recognizes an elixir of paraldehyde, the dose of which is two fluid drachms, which represents thirty minims of paraldehyde.

The following formula, proposed by Thomas J. Keenan, in the Pharmaceutical Record for June 23, 1892, has been found serviceable for the exhibition of paraldehyde in a concentrated and easily assimilated form:

B Paraldehyde. Oil of cassia, M. xxx;
Pulverized sugar Si;
Water, ad 5xvi.
M. et. Sig: One to two teaspoonfuls or more as

In preparing this emulsion it is best to rub up the sugar with the yolk of egg and incorporate the paraldehyde and oil of cassia slowly and with constant stirring. The water should then be added in divided portions until the whole of it is taken up and a perfect emulsion formed.

The Untoward Action of Iodides Corrected by Arsenic.—Iodides, as is well known, set up in some patients all the symptoms of a cold in the head, even in small doses. Changes in the mouth, such as enlargement of the tongue, dribbling of saliva, etc., are occasional unpleasant symptoms. Difficulties in this way may frequently be overcome. according to D. M. Macdonald (The Hospital) by giving small doses of arsenic (Fowler's solution) simultaneously.

Local Application for Ozæna.—Tampons moistened with the following mixture should be applied to the mucous membrane of the nasal passages four times a week after the removal of crusts by means of tweezers. (Bulletin général thérapeutique, October 30, 1908):

| B | Iodine, Potassium | : | . 4 | . 1 | | | | | | | | | | | | | | | | g | Γ. | 2 | v | , |
|---|----------------------|---|-----|-----|---|--|---|--|--|--|--|--|--|--|---|--|--|--|--|---|----|---|----|---|
| | Menthol, | | | | | | | | | | | | | | | | | | | | | | | |
| M | Glycerin, | | | | ٠ | | ٠ | | | | | | | | ٠ | | | | | | | | 3х | |

Glycerin Suppositories.—A correspondent of the Pharmazeutische Zeitung for October 31st, communicates the following new formula for the preparation of glycerin suppositories:

| $\mathbb{P}_{\!\scriptscriptstyle E}$ | Cacao butter, | |
|---------------------------------------|----------------------------|-----|
| | Glycerin, | v; |
| | Anhydrous wool fat,gr. vii | SS. |

Melt together in a flask until a thick homogeneous liquid results capable of being poured into moulds of aluminum or tin about one and a half inches long and two fifths of an inch in circumference. Each suppository should weigh forty-five grains.

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NEW YORK, SATURDAY, NOVEMBER 29, 1908.

THE INTERNATIONAL TUBERCULOSIS EXHIBITION.

The physicians of New York and its vicinity are to be congratulated on the coming of the Tuberculosis Exhibiton to this city. Held in connection with the International Congress on Tuberculosis, it probably brought together the most instructive and complete armamentarium against tuberculous disease ever seen. In Washington the exhibtion was daily visited by thousands, and there is no doubt at all that it was of enormous educational value. After all, the main weapon against the disease has been, and for some time to come will continue to be, education, but not the education of the masses merely. but also and especially the education of physicians.

While it suffices for the masses to grasp the broad principles of the crusade, it is the duty of all physicians to acquaint themselves with the details of the work. The family practitioner should be able to advise his patient concerning all the details of treatment, including the daily routine, the precautions to be taken to avoid infection of others, etc. He is also expected to know what facilities exist, both public and private, for the care of patients to be sent from their homes. His patient expects full information concerning situation, railroad fare, charges, class of patients received, where to make application, etc. Finally, the family physician must be able to direct the carrying out of modern phthisiotherapeutic measures in the home of the patient.

We venture to say that many physicians will be

surprised when the scope of the antituberculosis problem is brought home to them. This is all the more reason for every physician so to familiarize himself with the details of the work that he can take his place in properly directing it. We heartily commend this exhibition to the attention of our colleagues and can assure them that they will find in it much instructive material for study.

MEDICAL SOCIETIES AND LITERARY PROPERTY.

In the November number of the Pennsylvania Medical Journal there appears a paper with the following long title: The Ouestionable Ethics of Medical Journals in Publishing as Original Matter Papers Read at Medical Conventions: the Equal Rights and Privileges of All Medical Journals to the Publication of Papers Read at Medical Conventions; the Claims of the Medical Profession upon the Scientific Papers and Discussions of Medical Conventions. The title takes up thirteen of our contemporary's lines. The paper emanates from a well known Philadelphia surgeon, Dr. Oscar H. Allis, and was read in the general meeting of the Medical Society of the State of Pennsylvania in September. From several points of view it is remarkable.

It appears from Dr. Allis's account that last year he was announced to present a paper at the meeting of the American Surgical Association, whereupon the editors of Surgery, Gynæcology, and Obstetrics wrote to Dr. Allis requesting his paper for publication in that journal, and soon afterward he received a similar request from the editor of the American Journal of the Medical Sciences. He sent a copy to each of the two journals. Then he received a letter from the publishers of the American Journal of the Medical Sciences, Messrs. Lea Brothers & Co., in which they said:

Dr. Kelly has advised us concerning the article on congenital dislocation of the hip which you sent for publication in the American Journal of the Medical Sciences and also to another periodical, in contravention of the long standing rule of the Journal, printed in every issue. We have thus been put to expense for composition and illustrations which represents merely a loss to us, and, as it is only fair that you should reimburse us, we inclose a bill, at cost to us, for which we should be pleased to receive an

The bill amounted to \$38 (\$13.75 for composition and \$24.25 for engravings). The bill and the letter in which it was inclosed proved the starting point of a controversial correspondence between Dr. Allis and the firm, the whole of which-including a magistrate's command to "any constable of said city" (Philadelphia) to summon Dr. Allis to appear and "answer Lea & Febiger" (the new style of the firm

of Lea Brothers & Co.) "in a plea of debt or demand 'arising' from contract, either expressed or implied' "-is incorporated into Dr. Allis's paper, constituting more than half of the paper. The incipient litigation was at length dropped by the publishing firm, their bill remaining unpaid. Dr. Allis submitted to his State society the question of whether or not he was bound to pay the bill-that is, he wrote to his attorney: "I propose to refer it to the Medical Society of the State of Pennsylvania, and if that organization agree that I am in error both in law and honor. I will pay the bill that Lea & Febiger claim that I owe them, and send them an apology for my action." As this letter is included in his paper, Dr. Allis did virtually refer the question to the society, but we are not informed that a decision was rendered by that body.

Dr. Allis goes on to argue that no medical journal has a right to expect an author to furnish it with the text of a paper read before a medical society, asserting that such a paper is the property of the society. Of course he had not arrived at this belief prior to his furnishing copies of his paper to both Surgery, Gynacology, and Obstetrics and the American Journal of the Medical Sciences; otherwise he would have informed each of those journals that he could not furnish it with a copy of his paper. The fact that he has now reached such a conclusion can hardly be accepted, we think, as proving its truth as a general proposition. There are some societies which assert an exclusive right to publish the papers read at their meetings. If the proprietorship asserted by them is conceded by their members, nobody else can dispute it. We believe, however, that there are now but few societies which seek to exercise such an exclusive right, and we know that there are some which, having formerly sought to exercise it, do so no longer, for they have come to the sensible view that prior publication in a reputable journal does not detract from the value of their volumes of Transactions or of their other official vehicles of publication. But the great majority of our medical societies do not claim ownership of the papers contributed by their members; hence prevailing custom would seem to preclude the acceptance of Dr. Allis's contention as a general statement of fact.

Incidentally, Dr. Allis gave his audience an idea of his estimate of medical journalism in this country, saying: "There is scarcely a journal published in the United States that is not put forth by a publishing house, proprietary medicine vendor, food fakir, or supply shop, with the sole individual purpose of advertising its own wares. Back of the medical journal is the shrewd money getting business man, who never loses sight of the value of the buildingth that of a dollar and whose interest in the

ethics of medicine is akin to that the cannibal takes in the welfare of the missionary." He does not appear, however, to have discussed the ethics of sending the same article to two different journals without informing the one that it has also been sent to the other—a practice which is getting to be discreditably common.

THE NEW GYNÆCOLOGICAL HOSPITAL BUILDING OF THE UNIVERSITY OF VIENNA.

The Wiener klinische Wochenschrift for October 22d devotes much of its space to the opening of the new Gynæcological Hospital of the University of Vienna. Two papers read at the ceremonies and another independent paper, which are published by our Vienna contemporary, are of special interest—one by Professor F. Schauta, the second by Professor Alfons von Rosthorn, the successor to Chrobak, and the third by Dr. J. Fischer. From these three essays we gain a good view into the history of this world renowned institution.

As in the other European universities, obstetrics was treated at the University of Vienna only theoretically, by the teachers of medicine, up to the end of the eighteenth century. It was the old tradition that the physician was too proud to undertake surgery or obstetrics, and gynæcology has devloped only during the last fifty years, having previously been taught inadequately by the general surgeons. A practising physician was not necessarily also a surgeon or obstetrician; therefore the peculiar German title, Arst, Wundarst, und Geburtshelfer. Although a certain Rafaele Steidele read specially on obstetrics as early as in 1774, it was due to the initiative of Chancellor Van Swieten, called to Vienna from Leyden, that the first obstetrical department was opened in the new general hospital in 1784. This department received in 1834 a new building, still belonging to the general hospital group of buildings, and it is only since 1908 that the woman's hospital has had a home of its own. This building, according to the description given by Professor Schauta, and to judge by the illustrations and the plan which accompany the professor's paper, must be an imposing structure.

Of the men who have worked here, helping the sufferers, teaching the students, and assisting the practising physicians, we can only mention a few names: Simon von Zeller and Lukas Johann Boër (Boogers was his real name), the celebrated and much attacked obstetrician, were the first accoucturs, who were appointed, in 1786. In 1809 Heinrich Naver For became extraordinary professor of

obstetrics, to be followed in 1823 by Franz Güntner and in 1828 by Alexander Weiss and Elias Löbisch. In 1822 Johann Klein was placed in charge of the obstetrical clinic and became later professor of obstetrics, which position, to the detriment of the fame of the institution, he held until his death, in 1856.

In the mean time Eduard Mikschik opened the first gynæcological hospital, consisting of two rooms and being under the supervision of the general hospital, as a Klinik für Weiberkrankheiten. It was here that, in 1847, Semmelweis introduced the practice of irrigation with chlorine for the prevention of puerperal sepsis, after he had, independently of our own Oliver Wendell Holmes, demonstrated the causative factor of this dreadful fever, and to him the Germans and Austrians give the prize for this glorious discovery.

In 1858 Karl Braun von Fernwald (commonly called Karl Braun) succeeded Klein. Braun, Breisky, Späth, Chrobak, and Schauta became then the leading obstetricians of the Vienna school. While in 1784 only one obstetrical clinic existed, in 1834 this department was divided into two clinics, both attended by students and midwives. Five years later this arrangement was changed to a clinic for medical students and another for midwives. In 1873 a second clinic for students was opened. In 1774 the obstetrical clinic reported 285 births; in 1907 the three clinics reported over 12,000 births.

PROFESSOR GRAHAM LUSK'S HARVEY LECTURE.

It is a pleasure to record that one of the best Harvey lectures thus far delivered was that of our distinguished fellow townsman, Professor Graham Lusk, on Metabolism in Diabetes. The subject is certainly not an easy one to follow, but the speaker presented the salient facts so clearly that he held the close attention of his auditors throughout the lecture. According to Lusk, about eighty per cent. of the diagnoses of diabetes made by physicians at the present time are incorrect, the patients suffering merely from glycosuria. In true diabetes there is some serious disturbance of metabolism, so that sugar is formed even from proteid and perhaps also from fat. In glycosuria, on the other hand, there is merely an overtaxing of the capacity of certain organs to hold carbohydrate.

It was interesting to observe the vast amount of information which had been secured by means of animal experiments, and while it is true that we have not yet learned how to cure diabetes, we wonder whether any intelligent person would say we could forego knowledge gained in this way. After all, the rational way to find a cure for a disease is to study

the nature and cause of the pathological changes thoroughly. We have already learned that the glycosuria produced by injuries to the diabetic centre is not a true diabetes. When the operation is performed on fasting animals, i. e., on animals whose organs are free from stored carbohydrate, no sugar appears in the urine. We also know that the glycosuria produced by starvation is not a true diabetes. and the same is true of that produced by phlorizine. Animal experiments have also taught us the important rôle played by the pancreas in the metabolism of carbohydrates. This is usually believed to be an instance of an internal secretion. Animals suffering from a diabetes produced by complete extirpation of the pancreas can be cured by grafting a piece of pancreatic tissue beneath the skin.

The source of the urinary sugar in diabetes has long been the subject of controversy and investigation. Kossel pointed out that urinary sugar contained the same number of carbon atoms as the amino acids, and suggested that the amino acids of the protein molecule were the source of the sugar. In view of the researches of Fischer on the constitution of the protein molecule, such a formation is not difficult to understand. On the other hand, it is not easy to understand how alanine, which is optically inactive, is changed into dextrose, and yet, on feeding a diabetic dog with alanine, Lusk has seen an increase in the urinary sugar. Similar results have been obtained with a number of other amino acids, such as glycocoll, serin, and aspartic acid.

A point of considerable practical value is the amount of food required in diabetes. Normally about twenty-three per cent. of the heat value of protein is not used by the body, i. e., about seventy-seven per cent. of the heat value is really available. In diabetes, on the other hand, only about nineteen per cent. of the ordinarily calculated caloric value of protein is actually obtained by the organism. According to Falta, the diabetic actually uses considerably more calories than a normal individual, but this does not appear to be true, as the experiments on which Falta bases his view are open to serious objection. According to the figures obtained by Voit forty years ago, the diabetic uses about the same number of calories as the normal individual.

The diabetic's hope, of course, lies in the selection of a proper diet, and in order that he may have this it is important to determine the carbohydrate tolerance. Mandel and Lusk have recommended that the patient be placed on a fat and proteid diet, and that studies then be made of the diet to nitrogen ratio, i. e., the ratio between the carbohydrate and the total nitrogen in the urine. They believe that if this ratio is high, the prognosis is poor, while, conversely, a low ratio indicates a favorable prognosis. In con-

nection with the selection of a proper diet, it is interesting to note that in his experiments on diabetic animals, Allard, working in Minkowski's clinic, found that the ratio could be increased by feeding them with fat, and that this also increased the acidosis. The acidosis, as is well known, is directly asso-

ciated with diabetic coma.

In closing, Lusk said that, while it was easy enough to express the results of the activities of millions of cells in terms of calories, we were vet far from having an insight into the complicated processes going on within the organism. This, of course, is true. At the same time it was impossible to listen to the speaker's interesting recital without feeling that sooner or later these ingenious methods logically continued would bring the desired result, namely, a cure or preventive of the disease.

Hews Stems.

A Bust of Pasteur at Harvard .- A replica of the by Harvard University, and will be erected in the Medical School

In Memory of Laveran.—A medallion, commemorating the discovery of the parasite of malaria by Laveran, in 1880, has been placed in the Military Hospital of Constantine,

Algiers.
The Clinical Society of the Elizabeth, N. J., General Hospital held a meeting on Tuesday. November 17th. The paper of the evening was read by Dr. S. T. Quinn on Surgical Diseases of the Gall Bladder.

Dean of the Medical Faculty, University of Toronto.

Dr. C. K. Clark, of the Toronto Asylum, has been appointed dean of the medical faculty of the University of Toronto, to succeed Dr. R. A. Reeve, who resigned

The Harvey Society Lectures.—The fourth lecture of the Harvey Society will be delivered on Saturday, November 28th, at 8:30 p. m., at the New York Academy of Medicine, by Dr. Wilhelm Falta, of the University of Vienna.

The subject will be the Therapeutics of Diabetes.

Personal.—Dr. Daniel T. Millspaugh, of New York, met with a serious accident while driving with one of his patients recently. A dead tree fell directly across the carriage, breaking both of Dr. Millspaugh's legs above the

Rochester, N. Y., Academy of Medicine.—A meeting of this academy was held on Wednesday evening, November 25th. The programme, which was arranged by Section IV, included a paper by Dr. Park Lewis, of Buffalo, on the Prevention of Ophthalmia Neonatorum. The paper was illustrated by lantern slides.

An Annex for the Metropolitan Hospital .- Plans have been filed with the Building Department for the erection of a stone building 291 feet long and four stories high on Blackwell's Island, as an annex to the Metropolitan Hospital. The new building, which will be devoted to the care of tuberculosis patients, will cost \$250,000.

of tuberculosis patients, will cost \$250,000.

A Course of Special Lectures at the University of Wisconsin.—Dr. M. P. Ravenel, professor of bacteriology in the Medical Department of the University of Wisconsin, is arranging a series of lectures on hygiene. Professor William T. Sedgwick, of the Massachusetts Institute of Technology, is among the speakers.

The Sixth District Medical Association of Georgia with in August in Managara. No

met in annual session in Macon, Ga., on Wednesday, No vember 11th. Officers were elected as follows: President, Dr. A. F. White, of Flovilla; vice-president, Dr. J. W. Cowart, of Walden; secretary and treasurer, Dr. Eugene B. Elder, of Macon. The association will hold its next convention in Indian Springs, on the second Wednesday in

The New York Pathological Society and the New York Surgical Society will hold a joint meeting on December 9th. A paper entitled An Experimental Study of the Pathology and Metabolism in Delayed Chloroform Poisoning will be presented by Dr. John Howland and Dr. A. N. Richards. The subject will be discussed from a A. N. Richards. clinical standpoint

NEWS ITEMS.

American Urological Association.—The New York Society branch of this organization held a stated meeting at the New York Academy of Medicine on Wednesday evening, November 25th. The paper of the evening was read by Dr. Lewis Gregory Cole on Radiographic Diagnosis of Calculus in Cases having Obscure Histories. The paper was illustrated with lantern slide pictures.

Increase in Alcoholism Among Applicants for Enlist-

Increase in Alcoholism Among Applicants for Enlistment.—The annual report of the Surgeon General of the United States Army discloses the fact that the proportion of applicants rejected on account of alcoholism rose from 9.65 per thousand in 1905-06 to 75 per thousand in 1906-07. There seems to be no assignable reason for this increase. No change has been made in the regulations regarding alcoholism

Har-Moriah Hospital.—The Har-Moriah Hospital, on First Avenue, New York, was opened on November 15th by the President of the Board of Aldermen. The funds for the erection of the hospital were raised by private subscription. The name originally was Mount Moriah, but the Hebrew word har, meaning mount, has been substituted for its English equivalent, so as to avoid confusion with Mount Sinai Hospital.

Contagious Diseases in Chicago.—There were 791 cases of contagious diseases reported to the Department of Health during the week ending November 14, 1908, an increase of 184 over the preceding week. Of the total numcrease of 184 over the preceding week. Of the total number of cases, 237 were of diphtheria, 196 of scarlet fever, 142 of tuberculosis, 63 of typhoid fever, 56 of measles, 34 of chickenpox, 24 of pneumonia, 16 of whooping cough, and 23 of diseases of minor importance.

Changes of Address.—Dr. E. Franklin Smith, to 4 West Ninety-second Street, New York.
Dr. St. C. Royle, to 2131 Broadway, New York.
Dr. Julien A. Gehrung, to 11 East Forty-eighth Street.

Dr. Geor New York George T. Jackson, to II East Forty-eighth Street.

Dr. Reed B. Granger, to 1215 Vyse Avenue, New York. A Gift to Beth Israel Hospital, New York.—At the graduating exercises of the training school for nurses operated in connection with this hospital, held on Monday evening, November 23d, Mr. Adolph Lewisohn announced a gift to the hospital of \$10,000. Mr. Lewisohn's gift makes possible the beginning of the work on the new building for the hospital as soon as a suitable site has been secured. The facilities of the present building have long been wholly

Christmas Stamps on Sale.—The American Red Cross Society is placing on sale, through its various local branches, stamps conveying Christmas greetings, which are sold at one cent each, the proceeds from the sale to be devoted to the antituberculosis campaign. Many of the larger firms in Philadelphia and other cities have taken large quantities of the stamps, one firm having already ordered as many as 50,000. Details regarding the plan, which originated in Denmark some few years ago, are given in a communica-tion by Dr. S. A. Knopf, of New York, printed in this

The Aid Association of the Philadelphia County Medical Society held its annual meeting on Monday afterical Society held its annual meeting on Monday aftermon. November oth Dr George Woodward, the former
president, having declined reelection, officers were elected
as follows: President, Dr. James B. Walker; vice-president,
Dr. Jacob R. Shellenberger; secretary, Dr. Lewis H. Adler,
Jr.; treasurer, Dr. John B. Turner; directors for three
years, Dr. John B. Roberts, Dr. De Forest Willard, and
Dr. William T. Hamilton.

The New Bellevue.—Two new buildings for Bellevue
Hospital were formally opened recently at Twenty-sixth
Street and East River. These two buildings were begun
in 1905 and are included in the general plan for the reconstruction of Bellevue Hospital as a whole, the completion

struction of Bellevue Hospital as a whole, the completion of which plan will take something like five years more. The two buildings opened have about 397 beds and will contain two wards for children and two medical wards, the remainder of the building being devoted to maternity wards. The Medical Society of Virginia.—At the annual meeting of this society, which was held recently in Richmond, the following officers were elected: President, Dr. Stuart McGuire, of Richmond; first vice-president, Dr. I. C. Wright, of Jarretts; second vice-president, Dr. E. T. Brady, of Abingdon; third vice-president, Dr. E. T. Brady, of Abingdon; third vice-president, Dr. Reid White, of Lexington; secretary, Dr. L. B. Richards, of Richmond; and treasurer, Dr. R. M. Slaughter, of Richmond; Parallel Secretary and Parallel Sec mond. Roanoke was chosen as the next place of meeting.

Philadelphia County Medical Society.—The Central Branch of this society held a meeting on Wednesday, November 25th. The programme consisted of a "symposium" on vaccination. Dr. Alexander C. Abbott read a paper on on vaccination. Dr. Alexander C. Addott read a paper on the Role of the Bureau of Health in Public Vaccination. Dr. Jay F. Schamberg read a paper on Smallpox before and since the Discovery of Vaccination. Dr. William M. Welch read a paper dealing with the so-called dangers of vaccination. Hampton L. Carson, Esq., presented the legal aspects of vaccination.

New Building for the Naperville, Ill., Sanatorium .-Mrs. Keith Spalding has given \$18,000 to the Chicago Tuberculosis Institute for the erection of a new building for the Edward Sanatorium at Naperville, Ill. This sanatorium, built and equipped by Mrs. Spalding, was opened on January 15, 1907, its object being to afford proper care and treatment for tuberculous patients in moderate circumstances. The new fund provides for the immediate erection of a well equipped medical building, with all facilities for clinical and laboratory study, and accommodations for at least twenty additional patients in the curable stage of the disease.

The Superintendency of the Boston City Hospital.-The Superintendency of the Boston City Hospital.—
Dr. George H. M. Rowe, who has been superintendent of the Boston City Hospital for nearly thirty years, has been obliged to resign his position on account of ill health.
Dr. Rowe's resignation will take effect at the close of the fiscal year. The trustees of the hospital have appointed Dr. John H. McCollum, professor of contagious diseases at Harvard Medical School, as Dr. Rowe's successor. Dr. McCollum has been resident hysician of the South de-McCollum has been resident physician of the South de-partment of the hospital for the last thirteen years, and was city physician of Boston for fifteen years.

Infectious Disease in New York: We are indebted to the Bureau of Records of the De-partment of Health for the following statistics of new cases and deaths reported for the two weeks ending No-

vember 21, 1008;

Deaths. Cases. Tuberculosis pulmonalis 479
Diphtheria 337
Measles 180
Scarlet fever 215 173 23 499 361 172 Varicella Typhoid fever Typhoid fever
Whooping cough
Cerebrospinal meningitis 38

The Buffalo Academy of Medicine.-A special stated meeting of the Section in Obstetrics and Gynæcology was held on Tuesday evening, November 24th. The principal feature of the programme was a paper entitled The Choice of Operation for Uterine and Bladder Displacement and Prolapse, which was read by Dr. Isaac Stone, professor of gynæcology in the Georgetown University, Washington, D. C. The discussion was opened by Dr. C. C. Frederick, of Philadelphia. The Buffalo Academy of Medicine was in-corporated on November 10, 1908, and this meeting was called to adopt the constitution and by-laws.

The Mortality of Chicago.—During the week ending November 14, 1908, there were reported to the Department of Health of the City of Chicago 565 deaths from all causes, as compared with 539 for the preceding week and 528 for the corresponding week in 1907. The annual death rate in 1,000 of population was 12.60. The principal causes of death were: Apoplexy, 7 deaths; Bright's disease, 50 deaths; bronchitis, 14 deaths; consumption, 71 deaths; cancer, 27 deaths; diphtheria, 18 deaths; heart disease, 50 deaths; influenza 1. death; intestigal diseases, causers, 28 deaths; influenza, I death; intestinal diseases, acute, 48 deaths; measles, 2 deaths; nervous diseases, 15 deaths; pneumonia, 62 deaths; scarlet fever, II deaths; suicide, 7 deaths; typhoid fever, 7 deaths; violence, other than suicide, 38 deaths; whooping cough, I death; all other causes,

The Health of Pittsburgh .- During the week ending November 14, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 14 cases, o deaths; typhoid fever, 19 cases, 1 death; pox, 14 cases, o deaths, typhold fevel, 19 cases, I death; scarlet fever, 26 cases, 2 deaths; diphtheria, 25 cases, I death; measles, 23 cases, 0 deaths; whooping cough, 9 cases 0 deaths; pulmonary tuberculosis, 22 cases, 10 deaths. The total deaths for the week numbered 142 in an estimated population of 565,000, corresponding to an annual death rate of 13.06 in 1,000 population.

New York Academy of Medicine.- A stated meeting of the academy will be held on Thursday evening, December 3d, under the auspices of the Section in Ophthalmology. The subect selected for discussion is the diseases of the eye and orbit depending on diseases of the accessory nasal sinuses. Dr. George S. Dixon will present a paper, illustrated with lantern slides, on the anatomical relations. Dr. Arnold Knapp will read a paper dealing with the subect from the ophthalmological standpoint, and the rhinological standpoint will be discussed in a paper by Dr. C. G Coakley. Among those who will participate in the general discussion are Dr. C. R. Holmes, of Cincinnati, Dr. William Campbell Posey, of Philadelphia, Dr. Emil Gruening, and Dr. C. S. Bull.

New Location for the Philadelphia Clinic for the Home Treatment of Chest and Throat Diseases.—The

ociety

board of trustees of this institution recently purchased the property at 2114 Lombard Street, Philadelphia, and made application to the State Board of Charities for an appropriation to be devoted to remodelling the building to adapt it to the work of the clinic. Until these alterations are completed the clinic will continue to be held on Mondays, Wednesdays, and Fridays, at 3 p. m., in the rooms at 519 South Fifteenth Street, temporarily engaged for the purpose. The work of the clinic has been very satisfactory. Dr. Frank Read is president of the board of trustees, and Dr. Thomas J. Mays is the medical director of the clinic.

Major Mearns to Accompany President Roosevelt to Africa.—Much interest has been felt in the fact that Major Edgar A. Mearns, of the medical corps of the United States Army, who is to accompany President Roose-United States Army, who is to accompany President Roose-velt on his hunting trip to Africa, has been declared physi-cally unfit for promotion by an examining board before which he appeared recently. Under the recently enacted law reorganizing the medical department, Major Mearns will retire on January 1, 1909, with the rank of lieutenant colonel, since he has been declared physically unfit for promotion. Some surprise has been expressed that a man declared physically unfit for promotion should still be physically fit for a hunting trip to Africa with so strenuous a leader as President Roosevelt.

Scientific Society Meetings in Philadelphia for the Week Ending December 5, 1908:

Monday, November 10th .- Section in Medical History, College of Physicians.

TUESDAY, December 1st.—Academy of Natural Sciences; Philadelphia Medical Examiners' Association.

Wednesday, December 2d.—College of Physicians.
THURSDAY, December 3d.—Obstetrical Society; Germantown Branch, Philadelphia County Medical Society;
Southeastern Medical Society; Section Meetings,

Franklin Institute. FRIDAY, December 4th.—American Philosophical Society; Kensington Branch, Philadelphia County Medical

Officers of the Medical Society of the County of New York.—At the one hundred and third annual meeting of the Medical Society of the County of New York, held on the evening of Monday, November 23d, the following officers were elected: President, Dr. H. Seymour Houghton; first vice-president, Dr. John E. Weeks; scond vice-president, Dr. John E. Weeks; scond vice-president, Dr. Joseph Brettaur; secretary, Dr. John Van Doren Young, reelected; assistant secretary, Dr. J. Milton Mabbott, reelected; treasurer, Dr. Charles H. Richardson, reelected; censors, to serve two years, Dr. J. Riddle Goffe, Dr. Harry M. Painter, and Dr. Charles G. Kerley; delegates to the Medical Society of the State of New York, to serve two years, Dr. H. Seymour Houghton, Dr. Floyd M. Crandall, Dr. Ward Bryant Hoag, Dr. E. Eliot Harris, Dr. Henry M. Silver, Dr. J. Milton Mabbott, Dr. Abraham Jacobi, Dr. Michael C. O'Brien, Dr. Egbert Le Fevre, Dr. Frederic R. Sturgis, Dr. Arnold K. Knapp, Dr. Frank S. Fielder, Dr. Charles H. Richardson, Dr. John A. Bodine, Dr. Edward M. Foote, Dr. Edmund Prince Fowler, and Dr. Walter Lester Carr. Officers of the Medical Society of the County of New

Promotions in the Medical Corps of the Army.—A recent number of the Army and Navy Journal points out that during the next few weeks many promotions will take place in the medical corps of the United States Army. Colonel Philip F. Harvey will retire on December 12th, which will cause the promotion of Lieutenant Colonel Daniel M. Appel to the rank of colonel, Major John L. Phillips to the rank of internat of lieutenant colonel, and Captain Elmer A. Dean to the rank of major. The reorganization under the recently enacted law, which will take effect on January 1, 1900, will advance Lieutenant Colonels Harry O. Perley and W. B. Davis to the rank of colonel; Majors Guy. L. Edie, W. D. Crosby, C. M. Gandy, W. D. McCaw, Jefferson R. Kean, and H. I. Raymond will become lieutenant colonels; and Captains F. M. C. Usher, W. F. Truby, F. F. Russell, E. P. Wolfe, H. S. Greenleaf, L. T. Hess, C. C. Collins, B. J. Edgar, Jr., S. M. Waterhouse, E. H. Hartnett, C. S. Ford, C. E. Marrow, W. D. Webb, M. A. W. Shockley, R. N. Winn, T. C. Lyster, S. H. Wadhams, C. P. Robbins, and T. L. Rhoads will become majors. On January 14th Surgeon General O'Reilly will retire. Lieutenant Colonel W. W. Gray will become a colonel, Major H. T. Harris will become a major. Society Meetings for the Coming Week:

TUESDAY, December 1st.—The New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity, N. Y., Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Association; Island, N. Y., Medical Asociety (annual); Promotions in the Medical Corps of the Army.—A recent number of the Army and Navy Journal points out

Medical Association of Troy and Vicinity, N. Y.; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society (annual); Bridgeport, Conn., Medical Association.

Wednesday, December 2d.—Society of Alumni of Bellevue Hospital: Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

Thursday, December 3d.—New York Academy of Medicine; Dansville, N. Y., Medical Association.

FRIDAY, December 4th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Clinical Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York.

The Health of Philadelphia .- During the week ending November 7, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadiseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 31 cases, 3 deaths; scarlet fever, 49 cases, 4 deaths; chickenpox, 43 cases, 0 deaths; dipththeria, 72 cases, 16 deaths; cerebrospinal meningitis, 2 cases, 0 deaths; measles, 35 cases, 0 deaths; wbooming cough, 13 cases, 2 deaths; tuberculosis of the lungs, 125 cases, 51 deaths; pneumonia, 49 cases, 25 deaths; ervispelas, 6 cases, 1 death; puerperal fever, 4 cases, 1 death; mumps, 4 cases; cancer, 18 cases, 24 deaths; tetanus, 2 cases, 1 death; trachoma, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases; Tuberculosis, other than tuberculosis of the lungs, 8 deaths; Tuberculosis, other than tuberculosis of the lungs, 8 deaths; Tuberculosis, other than tuberculosis of the lungs, 8 deaths; cholera morbus, 1 death; diarrhoea and entertitis, under two years of age, 25 deaths. The total deaths numbered 421 in an estimated population of 1,532,738, corresponding to an annual death rate of 14,21 in 1,000 population. The total infant mortality was 98; under one year of age, 80; between one and two years of age, 18. There were 27 still births; 12 males and 15 females.

During the week ending November 14, 1008, asset of

During the week ending November 14, 1908, cases of transmissible diseases were reported as follows: Typhoid fever, 30 cases, 10 deaths; scarlet fever, 72 cases, 8 deaths; chickenpox, 36 cases, 0 deaths; diphtheria, 113 cases, 14 deaths; measles, 36 cases, 2 deaths; whooping cough, 6 cases, 0 deaths; tuberculosis of the lungs, 165 cases, 65 deaths; presumeric cases, 4 deaths; accurately cases, 65 deaths; presumeric cases, 65 deaths; pneumonia, 65 cases, 34 deaths; erysipelas, 3 cases, 1 death; puerperal fever, 2 cases, 0 deaths; mumps, 10 cases, 0 deaths; trachoma, 2 cases, 0 deaths; cases, o deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 7 deaths; diarrhea and entertitis, under two years of age, 17 deaths. The total deaths numbered 484 in an estimated population of 1,532/38, correlated to 1 Bith of Current Titerature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 16, 1908.

Acute Gonorrheeal Epididymitis, with Special Reference to the Operative Treatment,

to the Operative Treatment,

By John H. Cunningham, Jr.

The Law and Medical Experts, with Particular Reference to the Codes of Criminal Procedure of European Countries,

By Charles Greene Cumston.

Bursitis Subacromialis, or Periarthritis of the Shoulder Joint (Subdeltoid Bursitis) (To be continued),

By Ernest Amory Codman.

1. Acute Gonorrhœal Epididymitis.-Cunningham says that, in his mind, the operation advised by Hagner greatly lessens the suffering and diminishes the duration of the disease. Whether or not the epididymitis is left in a better condition to serve as a conduit for the testicular secretion cannot be determined. Hagner's technique is as follows The junction of the epididymis and testicle is defined and an incision two inches long is made through the scrotal skin in this line. The tunica vaginalis is opened when any fluid present escapes. The swollen epididymis with the testicle is delivered. The epididymis is punctured in many places with a sharp pointed knife. The punctures must penetrate the infiltrated fibrous covering and the body of the organ must be entered. If pus escapes the opening should be enlarged with the knife, and a probe should be inserted to enlarge the canal. Such cavities should be washed out with a fine pointed svringe filled with corrosive sublimate solution, I to 1,000, followed by salt solution. The epididymis should be gently squeezed to force to the surface as much of the infectious material as possible. This is sponged away with a sponge wet with the same antiseptic. The tunica vaginalis is washed thoroughly with corrosive sublimate solution, I to I,000, followed by a liberal amount of salt solution. A cigarette drain is placed over the punctured epididymis and brought out of the low-est part of the wound. The tunica vaginalis is closed by a continuous catgut suture and the scrotal skin by a lock stitch horsehair suture. A moist corrosive sublimate dressing is applied, and the testicle held elevated by a scrotal support. The dressing should be performed the day following the operation and the drain started. Except in cases where suppuration is considerable, it is rare that the wound needs irrigation. A supporter should be worn for several months. The urethral discharge occasionally stops with the involvement of the epididymis and does not return. If, however, the urethritis is still present or returns, it should receive appropriate treatment after the acuteness of the inflummatory process in the epididy-

2. Expert Testimony.—Cumston observes that the work of the medical expert is a particular form of evidence, which should not be confounded with other forms of evidence, properly speaking, but it is, in a way, analogous to other forms of evidence because it is based on the supposition of a presumed extraordinary knowledge offered by the physician appointed by the court to the medicolegal examination. From this it results that experts enjoy a particular function which should not be confounded either with that of the court, or, and especially, with that of the other witnesses. The part played by the medical expert should have a certain similarity to that of the jury, and, like the latter, the expert should be empowered to render his personal judgment upon the question; but this judgment should never be imposed upon the authorities who are to apply the law when the verdict of the jury definitely decides the question of guilt. As to the ordinary witnesses, they should differ totally from the medical experts, although in the courts of the United States there is no difference. It is the opportunity alone which creates the witness, namely, his fortuitous presence on the spot at the time of the crime; or, on the other hand, it may be his relations with the accused which necessitate his presence on the witness stand in order to relate what he may know directly or indirectly about the case. But the witness should only have a single duty, and that is to state what he has seen or heard, and he should not be asked to emit any thoughts that were suggested to him from what he saw or to offer any conclusions that he may have drawn therefrom. In other words, he should not have the right to emit any judgment on his own The expert, on the contrary, does not go about his mission from circumstances or chance. because, in a large majority of instances, his cognizance of the affair only results by his appointment to proceed as an expert; this mission is confided to him on account of his special knowledge and the power that this gives him to enlighten certain points which, without him, would remain obscure. The expert should then be the object of a choice, and his mission is twofold; it is not limited to the discovering of circumstances that the court would be unable to discern itself, and the expert should also give his appreciation of facts and draw conclusions from the knowledge he obtains from his capacity as expert. He should give his personal opinion to the authorities, and in this way he passes a judgment in every sense of the word. The author cites the European laws applying to expert testimony, and shows that the proposed New York State law is very similar to the European laws.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION November 21, 1908.

- Some Principles of Drug Treatment in Cardiovascular Conditions, By Joseph L. Miller. The Development of the Infant's Stomach,
- The Prephysical Signs of Tuberculosis in Children,
 By WILLIAM C. HOLLOPETER.
 Reactions of the Labyrinth and Their Significance in the Diagnosis of Suppurative Labyrinthitis,
- By GEORGE E. DAVIS.

 The Tuberculoop-Serum Diagnosis of Tuberculosis. The Tuberculoop-sonic Index, the von Pirquet Skin Test, and the Conjunctival Test, By Mary C. Lincoln.
- Treatment of Epithelioma by Röntgen Rays, By G. E. PFAHLER.
- X Ray Uses, Dangers, and Abuses Ruptured Tubal Gestation. When Shall We Operate?
 By Hunter Robb.
- Tuberculosis in Children.—Hollopeter says that in dealing with tuberculosis in children we must

recognize an infectious disease that has no well defined incubating period. Latent tuberculosis may continue throughout the life of the child, and we must never forget the protean types of expression of tuberculosis during childhood. Thorough control of tuberculosis can only come when the public is taught that ill health, from whatever cause, is an open invitation to its infection. Anæmia, loss of weight, with gastrointestinal catarrh, are more certain early symptoms.

4. Labyrinthitis.—Davis states that in cases of acute labyrinth suppuration it is better and safer to remove the labyrinth at the time of the radical operation, although the facial canal remains intact, for it is in just such patients in whom the radical operation is done and the labyrinth is not removed that, after from twenty-four to forty-eight hours, suppurative meningitis and death occur. The best method of operation is to make wide exposures of the sinus and meninges, uniting the middle and posterior fossæ. It is advised that in cases of suppurative labyrinthitis it is far better to do no operation than to make the radical operation without at the same time operating on the labyrinth, since the radical operation alone exaggerates the pathological conditions in the labyrinth and thereby enhances the danger of meningitis.

5. Tuberculin Tests.-Lincoln finds from her experiments and observations that the proportion of positive reactions to the von Pirquet tuberculin test, the conjunctival tuberculin test, and the tuberculoopsonic index, are substantially the same, ranging from eighty to ninety per cent. in favorable cases, and from thirty to forty per cent. in unfavorable cases. The more advanced the disease the smaller the percentage of positive reactions. The intensity of the reaction does not consistently follow any rule, but tends to be greater in cases of less advanced dis-The von Pirquet tuberculin test seems harm-The conjunctival tuberculin test should be used with caution. Until we can use the tuberculin tests with more intelligence than our present experience makes possible, we should make more comparative tests in all stages of the disease.

6. The Treatment of Epithelioma by Röntgen Rays. — Pfahler observes that early superficial epitheliomata involving the skin of the face and the back of the hands, when treated early by means of the Röntgen rays, should give good results in practically all cases. These results are brought about painlessly, with the lest possible scarring and often with none, and they are probably more likely to be permanent than the results from treatment by any other method. Epitheliomata associated with senile keratoses yield to Röntgen rays rather easily, but there is more likelihood of recurrence. Deep ulcerating epitheliomata with indurated fibrous bases do not yield good results under this treatment and should be excised when possible. When this is not possible, the rays will often give relief of pain, lessen discharge and prolong life. Epitheliomata involving the mucous membrane of the lower lip and cheek should be excised, and the excision followed by treatment of the glandular area with the Röntgen

7. X Ray Uses, Dangers, and Abuses.-Gottheil gives a good résumé of the uses, dangers, and abuses of the x ray: The x ray is a remedy of positive, though strictly limited, value in dermatology. It is to be used with caution, since its dosage is unmeasurable, the individual reaction to it is unknowable, and its results uncertain in any given case, and it should be employed only in the more serious dermatoses in any case, and in these only when it is entirely certain that safer and simpler means of cure are ineffective. It is not suited for use by the general practitioner in dermatotherapeusis, but should be employed in this field only by those whose familiarity with the method and with dermatology as a whole is a guarantee of certainty of diagnosis and of the observance of all the cares and precautions prescribed by experience. The x ray should not be used in the treatment of eczema, psoriasis, acne, alopecia areata, alopecia prematura, pruritus, hypertrichosis, folliculitis, verruca, ordinary ringworm, favus, etc., all of these being maladies for which we possess other efficacious therapeutic measures. In lupus erythematosus it is conceded to be useless. Epithelioma and rodent ulcer, except when so far advanced or so situated as to be unsuited for caustics, the curette, or the knife, is also to be excluded from the list. It may be used in lupus vulgaris, though it is not he only method of cure in many cases; in scrofuloderma on account of the tediousness and uncertain results of other medication; in very extensive cases of ringworm of the head and beard for the same reasons. The x ray is treatment of election in epithelioma and rodent ulcer so situated that other methods of treatment can not be employed, or so extensive that other methods are hopeless, and in relapses after other methods; in tuberculosis cutis, erythema induratum, and some other tuberculides; in sarcoma, mycosis fungoides. rhinoscleroma, keloid, and acne keloid, in which diseases no other method has given as good results.

8. Tubal Gestation.—Robb remarks that not more than five per cent. of the victims of ectopic gestation die at the time of rupture, whereas after the immediate operation in 1,176 cases in 25 clinics the mortality was eight per cent. When a patient is seen in a state of collapse as the result of a ruptured ectopic sac, she should not be operated upon until the condition of shock has been tided over, as these patients, when they die, rarely if ever succumb from loss of blood alone, but mainly from shock. Some of the reasons for believing that the hæmorrhage is not so great as has been generally supposed at the time of the rupture are as follows: (a) The great majority of ectopic sacs rupture between the first and third week of gestation. (b) The point at which the impregnation takes place is in a small area formed by a diverticulum in the tube, and the chorionic villi have only a feeble attachment. (c) From seventy-five per cent. to seventy-eight per cent. of the ruptures occur through the fimbriated end of the tube, and are tubal abortions not more dangeroccurring through the cervix. (d) The next most frequent place of rupture is the isthmic portion of the tube, which is also free from any large bloodvessels, (e) The point of rupture in the gestation vessels. (f) As a result of the inflammation which precedes the ectopic gestation, there is a relative increase of the connective tissue in the tube, and owing to the contraction of the connective tissue the vascularity of the tube is limited. (g) The placenta is generally attached to the posterior wall of the tube, and as the rupture is generally through the anterior or lateral wall of the tube, the placenta is not lacerated, but retains its firm attachment to the wall of the tube and is subjected to pressure. Physiologists teach that a woman weighing 130 pounds must probably lose four pounds of blood before succumbing to the effects of the hæmorrhage per se. So large an amount of blood is rarely found in the abdominal cavity-the sanguineous fluid is a mixture of blood and a serous exudate. The sudden removal of a large quantity of recently accumulated fluid in the abdomen, before the other vessels have had time to adapt themselves to the altered mechanical conditions, is dangerous and may be followed by fatal syncope. Patients in whom the bleeding would be sufficient to cause death are rarely seen in time to be saved by an operation for ligating the bleeding vessel. Our best operators give a proportion of forty or fifty per cent. as their death rate after immediate operations during shock. The results obtained by not a few good operators who have waited and carried out the deferred operation are certainly worthy of consideration.

MEDICAL RECORD November 21, 1908.

- The Possibility of Avoiding Conspicuous Scar Formation in Softened Tuberculosis of the Cervical Glands,
- Obstinate Vomiting, or the Personally Conducted Baby,
 By W. P. Northrup.
- Endothelioma of the Pleura,
 By H. Beegkman Delaiour.
 Locomotor Ataxia: A New Theory and Treatment.
 By LeGrand N. Denslow.
 Constals of Pancreatic
- Pancreatitis, with Illustration of Crystals of Pancreatic Reaction, According to Cammidge's Test.

 By MILTON R. BARKER.
- Three Very Unusual Cases of Appendicitis,
 By C. W. TRUEHEART.
 Clinical Observations on Malaria on the Isthmus of
 Panama. (Preliminary Note), By W. E. DEKS.
- 2. Obstinate Vomiting in Infants.-Northrup says that a nursing baby may vomit because its food enters the stomach too rapidly and consequently in too great quantities. The causes of this overdistention may be sought in the large quantity of breast milk, easy flow, large nipples, vigorous nursing. These conditions may be overcome by imposing mechanical obstructions, "drinking uphill," being here suggested. In his cases the successful position was, sprawling head downward and face downward over the mother's shoulder to the nipple, like a squirrel coming down a tree.
- 5. Pancreatitis .- Barker remarks that the aim of treatment in all cases of pancreatitis is to undo that which disease has done, by restoring as far as possible the pancreatic and biliary secretions to their normal functions as digestive fluids, and preventing as far as possible the drainage of the pancreas and liver into the blood. Whenever systemic and local conditions are such as to make us suspicious of pancreatitis, and Cammidge's test is positive, we should not hesitate to advise operative measures as the best

procedure in the case. Our object should be to increase as far as possible the excretion of bile and pancreatic secretion through their natural channels. This is best accomplished by removing all gallstones and débris from the gallbladder and gallducts and by dilating the common duct and papilla by the passing of proper instruments through them into the duodenum. A complemental drainage should also be established, by doing a cholecystoduodenostomy. By this manœuver drainage for both bile and pancreatic secretions is afforded through the cystic duct and gallbladder into the duodenum. Thus the bile is at once restored to its proper function, and at once the blood is relieved from its vicious effects. The operation also affords a better drainage for the diseased pancreas, by enlarging and clearing its natural outlet, and giving it two avenues for drainage instead of one. If for any reason this cannot be done, external drainage of the biliary and pancreatic ducts through the gallbladder should be maintained for a considerable time. Chronic pancreatitis entails a long and painful invalidism, but seldom of itself terminates life. It, however, so enfeebles the system that it becomes an easy prey for acute conditions of every nature, and life is usually terminated by some of these.

BRITISH MEDICAL JOURNAL

November 7, 1908.

The Mitchell Banks Memorial Lecture

By H. Morris. The Value of Chromocystoscopy in the Diagnosis of Renal Disease, By W. F. Brook.

Cystic Disease of Kidneys with Pyuria and Hæmor-rhages, By T. CARWARDINE and G. P. BLETCHLEY. A Case of Torsion of the Great Omentum and Habitual

A Case of Torsion of the Great
Partial Reduction en Masse,
By E. M. Corner and L. Grant,
Cancer in Travancore, South India. A Summary of
By W. C. Bentall,
With Delayed

1,700 Cases,

Case of Postanæsthetic Acetonuria, with Delayed Excretion of Acetone, after Child Labor By N. C. FORSYTH.

2. Chromocystoscopy. — Brook states that chromocystoscopy, or the introduction into the blood current of pigments which are excreted by the kidneys, and the observation by means of the cystoscope of their elimination by the ureters, as an aid to the diagnosis of renal disease, is not a new procedure. Methylene blue was the substance first used, but it gave uncertain results, as a large quantity is converted into and secreted as a colorless product. Sodium sulphindigotate (indigocarmin) is the substance now used. It is absolutely harmless, is entirely excreted unchanged, appearing in the bladder from twenty to thirty minutes after being injected. and is mostly eliminated in about two hours. The pigment particles are eliminated solely by the actively secreting structures of the kidney—the epithelium of the uriniferous tubules-and not at all by the filtering apparatus, the glomeruli, and malpighian cap-About a drachm of a four per cent. solution freshly prepared with sterilized water is injected into a muscle. The solution itself must not be boiled or it becomes gelatinous. It is as well to give a diuretic or a large quantity of water shortly before the examination, as otherwise the commencement of excretion may be much delayed. If general anæsthesia is not being employed, the urethra and neck of the bladder are prepared in the usual way with cocaine.

The examination is conducted in urine if this is clear and has not been too deeply stained by pigment already excreted, otherwise in boracic lotion or sterilized water. Upon cystoscoping the bladder half an hour after the injection, jets of blue urine are seen to issue alternately from each ureteral orifice, spreading out in a thin cloud towards the base of the The more distended the bladder, the finer bladder. and more forcible are the jets. Chromocystoscopy is much simpler than cystoscopic catheterization or separation by means of Luys's instrument.

5. Cancer in India.—Bentall has studied cancer as it occurs in Travancore in Southern India, and reaches the following conclusions: 1. The younger age incidence of cancer in Travancore is suggestive of some definite cause early in life. 2. Frequence of cancer of the buccal cavity and absence of it in the rest of the alimentary canal is suggestive of a local cause for the former, but absence of digestive causes in the latter. 3, The inveterate habit of "betel chewing" from childhood is suggestive of the cause, either by mechanical irritation or a medium suitable for the growth of a possible cancer germ.

LANCET

November 7, 1908.

Massive Collapse of the Lung (Bradshaw Lecture),
By W. Pasteur.
Angeioneurotic Œdema as a Family Cause of Sudden

Death, By A. J. WHITING, Direct Examination of the Larynx, Trachea, and Esophagus by Brüning's Instrument. With Illus-

By H. TILLEY. trative Cases On a Remarkable Case of Venous Accommodation after Compression of the Superior Longitudinal

Sinus by a Glioma, By L. P. PHILLIPS and G. E. SMITH. "Sutika," the Puerperal Diarrhœa of Bengal,

By F. PEARSE. The Palliative Treatment of Inoperable Cancer. With Remarks upon Certain Recent Developments in Therapeutics Considered from a Chemical Standpoint, By H. L. Drage and G. T. Morgan. The Royal College of Surgeons of England,

By H. MARSH.

1. Massive Collapse of the Lung.-Pasteur states that massive collapse of the lung is always due to paralysis of the respiratory muscles, especially the diaphragm. The lower lobes are the parts of the lung affected, the right base suffering more than the left. It is proverbially difficult in many cases of disease within the chest to decide whether the physical signs presented are due to compression, consolidation, or collapse of the lung. The signs usually observed in massive collapse are loss of percussion resonance sometimes amounting to actual dulness, with weak breathing which is often bronchial or tubular. Œdema râles may also be present, or crepitations when there is associated pneumonia. The most important diagnostic indication is the association of paralysis of the muscles of respiration. for massive collapse apparently never takes place in its absence. A very early and important indication of diaphragmatic failure is exaggerated action of the lower ribs. Massive collapse only occurs when the paralysis is profound and of rapid onset. Whenever the loss of respiratory muscular power falls short of this point there is a deficiency of lung expansion exactly proportionate to the loss of muscular power.

it may lead to the deflation of a whole lobe, is always caused by obstruction in some part of the air passages. Massive collapse is essentially an active process, lobular collapse a passive one, for the former is brought about by the active exercise of the elastic property of the lung, whilst the latter is caused by a passive removal of the air from portions of lung which have been cut off by bronchial occlusion from communication with the external air. Failure of the diaphragm to expand the bases of the lungs is in some cases responsible for the chest complications which sometimes follow severe operations. In a large majority of cases these lesions follow operations on the abdominal cavity, and the bases of the lungs are peculiarly liable to be affected. Long continuance of the Trendelenburg position is probably harmful by causing visceral pressure on the diaphragm. The writer's operations in laparotomy cases show that there may occur reflex inhibition of the movements of respiration of sufficient intensity and duration to cause massive collapse of the lungs. The symptoms presented very closely resemble those of pneumonia, and it is not unlikely that some of the cases diagnosticated as postoperative pneumonia are in reality

cases of massive collapse.

2. Angeioneurotic Œdema. — Whiting states that of all the angeioneuroses—acroparæsthesia, Raynaud's disease, erythromelalgia, intermittent hydrops articulorum, and angeioneurotic œdema-the last alone can be said to be dangerous to life. It gains an additional importance from the circumstance that with its possibly fatal result it is directly transmissible from one generation to another, even to the fourth generation and more. The disease, or rather the symptom complex of angeioneurotic ædema, is characterized by the occurrence of more or less sharply localized edematous swellings affecting the skin and subcutaneous tissues, the mucous membranes, and submucous tissues, and possibly other structures. They are chiefly found on the face and neck and uncovered parts of the limbs, but often involve the covered parts of the limbs, trunk, mouth, throat, genitalia, and gastric and intestinal wall. The condition probably affects also the intrapulmonary bronchi and possibly the central nervous system. The swellings develop to their full in a few hours and rarely last more than twenty-four hours. The skin may be reddened or not; there is no pitting on pressure, and usually neither itching, pain, nor tenderness, although a sensation of tenderness is not infrequently complained of. The condition probably affects also the intrapulmonary bronchi and possibly the central nervous system. The attacks show a cyclical recurrence in many cases. The average interval may be two or three weeks, but a month rarely elapses without an attack. Males are more frequently attacked in England and Europe; in America the reverse seems to be true. The age of onset is generally in early adult life. As with acroparæsthesia, the attacks most often occur in the early morning about three or four o'clock, when the vasomotor tone is normally at its lowest. Among recognized exciting causes of attacks are exposure to heat and cold and slight tissue injuries. A frequent manifestation of the condition is the occurrence of periodical attacks of severe intestinal colic, with sometimes nausea and vomiting. As previously stated, there is a marked hereditary tendency. Osler describes a family of thirty-six in five generations, of whom twenty-two had the disease. Very little is known as to the pathology of the condition. Among the causes assigned have been vasomotor instability, intestinal autointoxication, abnormal permeability of the bloodvessels, and localized venous spasm. Much might be advanced in support of its affinity with asthma and even with acute suffocative catarrh of the lungs. The distinctive diagnosis is simple: Certain cases might be confounded with atypical cases of urticaria. As to prognosis, when the swellings are limited to the skin there is nothing to fear as regards life, and there is some hope of recovery. Where the swellings affect the respiratory tract the prognosis is thoroughly bad as regards life, and particularly so in the family cases. Where junctions of skin and mucous membrane are affected, as in the lip or the cheek, the risk of spread to the throat must be taken into account. The gastrointestinal attacks do not seem to be in any way dangerous. From treatment. in the lack of a definite pathology, not much is to be expected. To counteract the lability of the nervous system the general health should be kept at as high a level as possible, and medicine such as iron, arsenic, and strychnine given as required. But the main treatment in the dangerous attacks is without doubt intubation or tracheotomy; and this idea pushed to its logical conclusion would seem to demand that every patient subject to, or threatened with, attacks of cedema of the glottis should constantly wear an actual or potential tracheotomy.

6. Inoperable Cancer.-Drage holds that surgical methods are a confession of defeat in connection with cancer, and he attempts to demonstrate that certain methods are the proper ones with which to treat the disease when the failure of surgery is complete. His methods are based upon the following working hypothesis, that it is necessary to make such an alteration in the blood as will increase the power of the human economy to starve the parasitic growth, to check the changes which are the result of the life of a parasite within the body, and to introduce an obstacle in the growth of fresh foci of dis-He began with sodium cinnamate, basing its use upon the fact that it produces considerable leucocytosis. The various drugs allied to this were investigated chemically, and at present he uses the following: Sodium orthocoumarate is given subcutaneously in the form of a twenty-two per cent. solution in water, in a dose of twenty-five minims up to thrice weekly. Either cinnamic aldehyde in doses of one minim in capsules thrice daily, or five grains of acetylocoumaric acid thrice daily, are also given, both after food. In order to reinforce the activities of these drugs it is necessary to apply a destructive agent to the growths. For this purpose antimonium oxide and copper oleate are used. No toxic effects have been experienced from the use of any of these drugs. The author reports a number of cases of inoperable cancer in which great benefit followed the adoption of this line of treatment. Death never occurs from sepsis, the patients dying gradually from exhaustion. Patients whom the treatment affects least are those who have been treated with Röntgen rays after operation, or who presented large masses of scar tissue as the result of

operation. The position which leucocytosis occupies with reference to the curative action of the remedies is necessarily a speculative one, and it is more than probable that it is an alteration in the serum which is the factor of the greater importance.

LA PRESSE MEDICALE.

October 3, 1908.

1. Chronic Fibrocalcareous Tuberculous Endocarditis with Koch's Bacilli,

By L. LORTAT-JACOB and G. SABAREAN 2. A New Disease; Arrest of Development of the Scabboid in Children, By R. ROMME.

Chronic Fibrocalcareous Tuberculous Endocarditis with Koch's Bacilli.-Lortat-Jacob and Sabareanu report a case with the findings on autopsy, the nature of which is fully described in the title of the paper.

October 7, 1008.

T. A Point in the Operative Technique of Craniectomy,

By T. DE MARTEL. 2. Report of the Twenty-first French Congress of Surgery, Paris, October 5 to 10, 1908.

Craniectomy.—De Martel describes a protector he has devised for use in the introduction of Gigli's saw for the purpose of cutting large bone flaps from the skull.

2. French Congress of Surgery.-The address of Professor Forgues on the Responsibility of the Surgeon, and the reports and discussions on the surgery of the common bile duct and the hepatic duct are given.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 5, 1908.

Experimental Contributions to the Pathogenesis of Eclampsia.

By L. Mohr and L. Freund.

Concerning the Exciting Agent in Scarlet Fever,

By N. T. Gamaleia.

The Demonstration of Antigen and of the Antibody in the Blood of Patients with Typhoid Fever,

By Leo Zupnik and Wilhelm Spaet.

Concerning Specific Neurotoxine,

By MIECZYSLAW GOLDRAUM Renal Atrophy with Fistula of the Ureter.

6. Concerning the Virulence Increasing Aggressinlike Property of the Bile in Infections with Cultures of Typhoid and Coli Bacteria, By Ernst Schleisinger, Quality or Quantity?

8. Resorption of Infection with Tubercle Bacilli by Way of the Gastrointestinal Canal, By J. De Haan.

9. Poisoning with Oxalic Acid, By Bastl Winnogradow.

10. Simplification of the Technique of Cesophagoscopy, By P. Rewingage

By P. REWIDZOFF.

I. Pathogenesis of Eclampsia. - Mohr and Freund assert that by their experiments they have demonstrated the existence of a specifically acting poison of the placenta, and thus have furnished an important support to the theory of a placental intoxication as the cause of eclampsia.

The Exciting Agent in Scarlet Fever .-Gamaleia alleges to have isolated the exciting agent of scarlet fever in the form of a microorganism belonging to a new class of colony forming animal parasites and called by him the Synanthozoon scarlatinæ. He has found it in the skin, the throat, the spleen, and the kidneys. Some of its forms correspond to the rosette like formations described by Mallory and the chrysanthemum flowers of Prowa-

4. Specific Neurotoxine.—Goldbaum states to have unequivocally shown the poisonousness of the

serum of guinea pigs immunized with emulsion of dog's brain for dogs. The coefficient of toxicity of this serum was so high that an injection of I c.c. per kilogramme killed a dog in one experiment, and in another the intracerebral injection of 0.3 c.c. per kilogramme had such a poisonous effect that the dog was removed from the table in a condition of coma and died within an hour. In another case the injection of 0.6 c.c. per kilogramme induced only a somnolence with no symptoms of irritation or of evil effect, and the dog remained perfectly normal. The clinical picture produced by this neurotoxic serum consists of somnolence, torpidity, convulsions, contractures, and finally paralyses in a comatous condition

7. Quality or Quantity.—Bornstein protests strongly against the belief that the welfare of the organism is dependent on its weight, and that quantity and quality are identical. Quality rather than quantity should be the aim in the production of tissue, and the former should never be sacrificed in the interests of the latter. Then he applies this to the effects produced on the human body by alcoholic drinks, and urges abstinence on the part of physicians.

8. Infection with Tubercle Bacilli by Way of the Gastrointestinal Canal.-De Haan repeated the experiments made on smaller animals on a large ruminant animal found in Java known as a Karbau. six years old, healthy, and previously tested with tuberculin without reaction. Material taken from a cow dead of tuberculosis was made into cakes and introduced into the stomach through a glass tube passed into that organ through a wound in the side. Three and a half months later the animal was found to be in a dying condition and was killed. Examination revealed no traces of tuberculosis in or about the intestinal tract, but there was a pulmonary tuberculosis with a complicating tuberculous

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT. October 6, 1908.

I. The Results of Surgery in the Treatment of Chole-lithiasis, By Kehr.

2. Orthodiagraphic Observations Concerning Changes in the Size of the Heart in Infectious Diseases, in Exudative Pericarditis and Paroxysmal Tachycardia, together with Remarks Concerning the Behavior

of Pneumonia to the X Rays,

3. Concerning the Action of Römer's Pneumococcus
Serum in Croupous Pneumonia with Especial Refer-By MAY. ence to the Leucocytes,

Carcinoma Ventriculi ex Achylia, By ALEXANDER. 5. Intermediate Cases in Lumbar Anæthesia

By HÖRRMAN. 6. Casuistics of Ephemeral Pneumonia, By ENGELES.
7. Casuistics of Abortive Pneumonia, By POLLATSCHEK.
8. Contributions to the Surgical Armamentarium.

Ву Асн. 9. An Open Photographic Dosimeter for X Ray Therapy, By Strauss.

10. A New Method for the Subcutaneous Injection of Sera, By Krautschneider. 11. The Vaginal Cæsarean Section in Practice

12. Concerning the Influence of Fulguration upon the Vitality of Cells,

By HOFFMANN.

1. Results of Surgery in the Treatment of Cholelithiasis.-Kehr gives in tabulated form the results obtained by the various methods of surgical intervention in cases of biliary calculi, and speaks

highly in favor of excision of the gallbladder with

hepatic drainage.

2. Orthodiagraphic Observations Concerning Changes in the Size of the Heart in Infectious Diseases. Exudative Pericarditis, and Paroxysmal Tachycardia.-Dietlen has observed acute dilation of the heart, apparently of toxic origin, most frequently in diphtheria, but also in scarlet fever, typhoid fever, acute polyarthritis, and other acute infectious diseases. The behavior of the heart in the course of a recorded septic disease was remarkable. At first the heart was somewhat dilated, gradually increased in size while the bodily weight grew less, and reached its maximum at the end of the third week of sickness. No clinical signs of myocarditis were present during this time. Then the size of the heart began to diminish while the bodily weight rapidly increased, and reached its minimum at the end of the seventh week, which was slightly below normal, and then increased again until it became of the size it was at the beginning.

3. Action of Römer's Pneumococcus Serum in Croupous Pneumonia.--May tabulates his observations made on twenty-eight cases of pneumonia treated with Römer's serum. His paper will be completed in a later issue, but one point may be noted: Of seventy-eight patients, twenty-eight were treated with the serum; in twenty-three per cent. of these the crisis was delayed until after the ninth day, in the others such a delay was present in only

16.6 per cent.

4. Carcinoma Ventriculi ex Achylia.—Alexander reports the case of a man, forty-seven years of age, who had suffered from dyspepsia for five years, and for three years had suffered from a trouble diagnosticated first as achylia gastrica, and then a large carcinoma developed at the fundus of the stomach. He believes that the achylia formed the basis of the development of the carcinoma.

5. Lumbar Anæsthesia.—Horrmann believes lumbar anæsthesia to be indicated in old, decrepit patients, in those with nontuberculous lung diseases, or heart disease, and in prolonged operations.

11. Vaginal Cæsarean Section.-Dührssen reiterates the statement he has heretofore made in favor of the vaginal Cæsarean section as the preferable operation in cases of contracted pelvis of the first and second degrees, and when the cervix is imperfectly dilatable.

AMERICAN JOURNAL OF SURGERY. November, 1908.

Various Clinical Types of Acute Dilatation of the Stomach, with Experimental Researches,

By ROBERT COLEMAN.

On the Use of the Wax Tipped Catheter for Diagnosis of Kidney Stone in the Male, By WINFIELD AYRES. Some Therapeutic Uses of Active, Passive, and Coming Hyperaemia, By EDMUND PRICE FOWLER. Dysmenorrhea, By R. A. MURRAY. Acute Perforating Gastric and Duodenal Ulcer.

By ELLSWORTH ELIOT.

The Wax Tipped Catheter for Diagnosis of Kidney Stone.—Ayres says that it has been proved repeatedly on the operating table that stone in the renal pelvis presents difficulty of diagnosis. Latterly we have been greatly helped in our diagnosis by the x ray, but many experts willingly admit that calculus is not always shown when present, and on the other hand, shadows are sometimes demonstrated when no stone exists. Several years ago Kelly, reporting on the use of the wax tipped catheter, showed that it was a great aid in making a diagnosis when the x ray failed. The only instrument now made that can be used for this purpose is Brown's old model-the one with the projecting telescope. He has added to his model a special telescope for the wax tipped catheter. With this cystoscope it is possible with great care to introduce the wax tipped catheter into the bladder without its touching anything but water. From there on the method of introduction is the same as for direct catheterization. For coating the catheter Kelly uses one half olive oil with one half dental wax, but Avres prefers pure beeswax. This is soft enough to receive the impression of a calculus and is harder than Kelly's mixture and more easily handled. The catheter is threaded through the catheter chamber backwards until only the tip projects beyond the telescope and is placed on the table with the tips projecting over the table edge. The cystoscope sheath is passed and the bladder washed out through it; then the bladder is filled. The telescope with the catheter in place is passed through the sheath while the water is flowing from the bladder, the sheath being somewhat depressed so as to throw the telescope when it emerges from the sheath well up; then more water is put in the bladder. If care has been taken with the passage of the telescope, and if the catheter has been rotated so that the tip will be just in front of the lens, the tip will not have touched the sheath at all, and when the bladder having been filled and the light turned on, the tip inspected through the cystoscope will be seen to be perfect. The catheter is now inserted in the suspected ureteral orifice and slowly passed. If any tender area is detected its distance from the bladder should be located and then the catheter withdrawn and inspected. Or it may be passed to the renal pelvis before encountering any obstruction or tender area. The impression of a calculus on the wax may be a very slight scratch, or what is more usual, a deep gouge. The very slight scratch requires corroboration by other similar scratches, but the deep gouge is positive evidence of the presence of a stone. Impression by solid tissue is smooth and differs materially from that of a stone. However, a flattening out of the tip of the catheter requires several tests to prove that the substance hit is not the face of a calculus.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE. Meeting of November 5, 1008

The President, Dr. John A. Wyeth, in the Chair.

Surgery of the Bile Passages, with Special Reference to Final Results .- Dr. John C. Munro, of Boston, reported the after results of operations upon the biliary passages in cases that had come under his observation during the past five years, utlizing all except the more recent cases. The number of operations was something over 300, and the final results were known in 198, including the fatal ones. One hundred and twenty-two patients had reported to him as well and without any symptoms referable to the bile passages. He had lost track of 106 cases, but thought that from the nature of the lesions and

the operation employed it was safe to count on good results in the majority of these cases. In ninety cases of recovery jaundice was present, in fiftyseven cases it was absent, while it was not recorded in forty-six. There were all degrees of jaundice. One of the ninety cases in which jaundice was present, sixty-three were simple galibladder stone. In forty-three cases of this type jaundice was noted as absent. In the common duct cases, fourteen patients had jaundice and three had not. Jaundice had been present in three cases of pancreatitis for which the gallbladder was drained; in two others it had been absent. Jaundice was present in seven cases and absent in seven in which there was an operation for infection of the gallbladder or the ducts without stone. Jaundice was present in two cases of operation for adhesions alone. No note had been made regarding the presence of jaundice in the forty-six cases of recovery; nineteen of these patients were operated upon primarily for some gross lesion elsewhere, such as ulcer of the stomach, umbilical hernia, uterine fibroid, etc. In the cases of recovery the duration of symptoms might be divided into two classes-those of short duration, or under one year, and those of long duration, or over one year. There were forty-eight cases with an average of four months; five of these patients had symptoms of only a few days' standing. The cases of long duration averaged six years, while there were nine cases in which symptoms had been present for an indefinite number of years. Among the fatal cases there were twelve in which symptoms had averaged six months and fourteen in which the symptoms had lasted on an average nine years. In twenty-seven cases the condition of the pancreas was found to be pathological. Adhesions were present in 127 cases and absent in twenty-two. The postoperative complications most dreaded were those of the lungs and bronchi. In 200 cases of recovery, three patients had typical pneumonia, one had acute cedema of the lungs, one had bronchitis following acute phlebitis, one was septic, and ten had slight cough. When the gallbladder was functionless it was removed if the condition of the patient warranted it. If, however, the gallbladder was functionally active, or if only temporarily out of order and there seemed a reasonable hope of establishing its function, it was drained. In the patients reporting themselves as recovered drainage had been employed four times as frequently as extirpation. In the cases that they had been unable to trace, drainage had been employed a little less than three times as frequently as extirpation. In the entire number of recovery cases they had performed cholecystotomy 125 times, cholecystectomy thirty-five times, and choledochostomy twenty-six times. The patients who had a recurrence of symptoms were divided into four classes: (1) Those in whom the symptoms were due to some unrecognized lesion and not to the presence of stones; (2) those in whom the symptoms were secondary to adhesions following operations; (3) those in whom stones had been left behind at previous operations; (4) those cases in whom new stones had formed. In this series of cases there were ten in which stones had been overlooked. These patients were either troubled with a biliary fistula that would not close or a return of the symptoms for which the first operation had been performed. The overlooked stone was in the gallbladder or cystic duct in every instance except one. Stones might form anew, but this was a very rare occurrence; their presence in these cases had been due to lack of thoroughness at the time of operation. Six patients had been lost from toxemia or cessation of hepatic functions. These patients did not die from shock, but apparently from cessation of hepatic function. In cases where hæmorrhage was suspected they had given, at Dr. Leary's suggestion, 30 c.c. of rabbit's serum subcutaneously; in all these cases there was no tendency to hæmorrhage. They had used this method with jaundiced or purpuric patients for more than a year, and had not seen a sign of bleeding, and they felt that there must be some value in the method. Dr. Munro concluded that an analysis of their cases demonstrated: (1) That jaundice was present in a majority of all gallbladder cases at some time, and that in a large majority of common duct cases there was jaundice; (2) that in these cases the pancreas was not infrequently pathological; (3) that in a large majority of cases adhesions were present and might be the direct cause of symptoms; (4) that pulmonary complications were to be feared, but were less frequent than might be expected; (5) that cholecystostomy was normally a more suitable operation than cholecystectomy unless the gallbladder was definitely functionless; (6) that adhesions, a contracted gallbladder, or overlooked stones might cause a recurrence of symptoms; (7) that it was better to treat toxemia cases medically until the acute stage was passed; (8) that severe capillary hæmorrhage might possibly be controlled, to what extent was not yet determined, by the employment of fresh animal serum.

The Treatment of Biliary Disease as Determined at the Operation.—Dr. Howard Lilenthal read this paper, which will appear in a later issue.

Cholecystectomy versus Cholecystotomy.-Dr. JOHN F. ERDMANN presented this paper, in which he referred to an article published in the New York Medical Journal in 1906, in which he had said that the indications for cholecystectomy were perforation by trauma, ulceration other than that due to abscess or gangrene, obliteration or stricture of the cystic duct, chronic cholecystitis with thickened walls, atrophy, gangrene, acute suppuration, enlargement by dilatation (usually due to calculus obstruction, stricture, or angulations of the gallbladder), marked adhesions, hour glass contractions, chronic or recurring cholecystitis or cholelithiasis, and malignancy. Cholecystectomy was contraindicated where the bladder was apparently healthy in cholelithiasis and pericholecystitis, where there was perforation into other viscera, where difficulty of closure of the connection was great, where there were perforations in the suppurative variety, where adhesions were ex-tensive and where life would be jeopardized by radical interference, where extensive malignancy existed, and where a hurried operation was necessary to save life. Dr. Erdmann said that he had slightly changed his views since that time and was not so radical at present. The reason for this change was that occasionally one had to do a secondary operation upon the common duct, either for an overlooked stone or for a stone that had formed in the liver and

come down, necessitating either a choledochotomy or leaving the patient a chronic invalid in case the stone did not pass. If such a secondary operation became necessary, one had lost the anatomical landmark if the gallbladder was absent. In acute cases, where the patient's condition demanded a rapid operation and the bladder was gangrenous, a few minutes more occupied with the operative procedure would justify cholecystectomy, and the danger of infection, sloughing, and hæmorrhage would be removed with a smaller risk than one would take by leaving the diseased organ. Where the condition was grave and only a thickened gallbladder with infection was present, the bladder contents alone were removed; this step included cystic and common duct work if necessary. Where time and shock were not important factors he did cholecystectomy if the bladder wall was friable or very thick, the bladder markedly elongated and thick, with patches of gangrene or grayish white slough, a large area of gangrene, or complete gangrenous destruction. In acute cholecystitis, calcareous degeneration called for cholecystectomy. In cases of old, contracted gallbladder, acute cholecystitis demanded cholecystectomy, as they were smouldering foci for subsequent attacks. If the gallbladder was acutely in-flamed and distended, the walls not over thick or infiltrated, with no mucous membrane destruction by gangrene or ulceration, he was prone to drain. One should do the radical operation for ulcerative perforations of the gallbladder. One could only obtain finesse of judgment by experience with these cases. In cases of malignancy he was inclined to close the abdomen except where the invasion was very slight or where the growth removal would be so thorough as to warrant a prognosis of little danger of return. Out of 104 operative cases, there were twenty-six cholecystectomies and one case of death due to malignancy. There were fifty-three cholecystectomies with three deaths. They had a record of twenty-five cholecystectomies with no deaths, and fifty-one cholecystotomies with one death, excluding malignancy and a case of multiple abscesses, where death was inevitable. Some of these cases were associated with other operations, such as appendectomies, subphrenic abscess, and such conditions as pregnancy, and one case of hæmor-rhage in the second week post partum. There was one case of cholecystotomy with choledochotomy in which the patient recovered. There were twenty cholecystectomies with choledochotomies, with five deaths. Choledochotomy was done in four cases without any fatality. By excluding the three malignant cases and the one of multiple abscesses, the series contained 100 cases in which there were seven deaths, none of which occurred in twenty-five cholecystectomies and only one in fifty-one cholecystectomies.

Dr. JOSEPH A. BLAKE said that experience had taught him that many difficulties were to be encountered in operations upon the biliary passages. He had been much interested in what had been said regarding the use of rabbit's serum in arresting hæmorrhage. He thought that cholecystotomy should be done rather than cholecystectomy in the badly suppurating cases. In cases of walling off hy adhesions cholecystotomy was a very easy operation and could be done under local anaesthesia. The gallbladder could be removed later if it was found tobe necessary. Many gallbladders would recover if drained; for this purpose the simple rubber dam, carried down, acted very well.

Dr. Lucius W. Hotchkiss said that the cigarette drain was very effective as well as the simple

rubber dam.

Dr. ALEXANDER B. JOHNSON said that during recent years his experience with gallbladder diseases had been quite large, and he was in favor of removing the gallbladder in nearly all serious cases. He had had a number of cases of acute cholecystitis, some very severe, some gangrenous, some with complicating stone in the gallbladder which ob-structed the cystic duct. These patients had been operated upon by other surgeons, who had done cholecystotomy. When, subsequently, the removal of the gallbladder became necessary the operation was exceedingly difficult. He had seen a number of fistulæ following the drainage of the gallbladder. He had had only one case of fistula among thirty cholecystotomies during the past three years. In this patient the bile discharged for more than a year, and a second operation was finally performed.

Dr. George E. Brewer said that Dr. Munro's experience in finding sixty-three cases of jaundice with simple gallbladder stone was rather unusual; when the stones were limited to the gallbladder jaundice was exceedingly rare. Carcinoma of the gallbladder was very serious and was fatal even in the early stages. It was sometimes almost impossible to distinguish gallbladder disease from syphilis of the liver. This was a point that should be

borne in mind.
Dr. Willy Meyer asked whether, in cases of gallbladder stone, it was better to drain or to extirpate. He thought that, as the stones formed so rapidly, surgery should be thorough. If the gallbladder contained mucus it should be removed.

Dr. Elsworth Eliot, Jr., thought that where the cystic duct was damaged so seriously that there was danger of subsequent deformity which might incapacitate the gallbladder it was wise to perform cholecystectomy. The value of any operative procedure could only be judged by the results obtained.

Dr. Munro said that the gallbladder was not removed when it was performing its function, but if it was not able to resume its function it should be

taken out.

Dr. LILIENTHAL said that he believed that in simple gallstone disease, with no thickening of the walls and no infection, cholecystotomy should be the operation of choice. Wherever there was serious inflammation the gallbladder should be removed.

Meeting of November 10, 1003.

The President, Dr. John A. Wyerh, in the chair.

Medical Service in a Modern Army in War, as Exemplified by the Japanese Army in the Russo-Japanese War.—Major CHARLES LYNCH, of the Medical Corps of the army, delivered this anniversary discourse. He was the late representative of the corps in Manchuria. During the Russo-Japanese war he served as military attaché to the legation in Tokyo for duty with the Japanese army, to observe the work of that army. His service comprised the last ten months of the war, nearly all of which was spent at the front in Manchuria with the second Japanese army. Hostilities covered a period of some nineteen months; during this time both Russia and Japan had poured men into Manchuria, so that at the end of the war each had there between 750,000 and 1,000,000 men under arms. It was his purpose to tell as well as he could the reasons which enabled the Japanese to accomplish such noteworthy results.

The discussion of any medical department naturally fell under three heads, organization and administration, sanitation, and professional care of the sick and injured. In order that efficient service in war might be rendered by any military medical department, it was necessary that certain conditions be fulfilled. First, the medical department must be sufficient in numbers to perform the work required of it. The Japanese were extremely liberal in medical personnel. They found they required one per cent. of medical officers and nine per cent. of inferior medical personnel to the total fighting force. The Japanese recognized fully that the quality of their medical officers was quite as important as the number, and the inducements which they offered in pay and promotion for physicians to enter the army were sufficient to secure a good class of men. Russia, on the other hand, while she had a very few eminent surgeons, as a whole was far inferior to Japan in this respect. The Japanese medical department had complete autonomy and the Russian had not. In battle, aid to the wounded was given in various stages from front to rear. First, the regimental aided on the firing line and at the temporary dressing station, then at the dressing station, the field hospitals, the transport department for patients, the stationary hospitals, the line of communication hospitals, hospital ships, the receiving hospital at home, hospital trains, rest stations, and reserve hospitals with convalescent camps as branches. This was the Japanese organization. While the stream of wounded constantly ran to the rear and finally ended at home, medical supplies took the contrary direction. The battle of Mukden was the greatest of which they had record, lasting from February 26 to March 10, 1905, but the pursuit covered several days more. The Russians and the Japanese each had about 310,000 men engaged, the Russians having a preponderance of 300 field guns and 100 heavy guns, while the Japanese had 112 machine guns in excess of those in use by their enemy. Ten Russian corps occupied a front of forty-seven miles; the Japanese front was about forty miles in length. The Japanese losses were reported to be about 45,000 killed and wounded and the Russians had 273 officers and 8,626 men killed, 1,576 officers and 49,426 men wounded, and 336 officers and 31,-253 men missing, making a total of 2,185 officers and 89,305 men. Of the missing Russians, about 20,000 were made prisoners; the remainder were killed. The second Japanese army lost 5,908 killed and 16,288 wounded. The relative high loss in this army was due to the fact that it made a frontal attack on the strong Russian positions near Mukden. The temperature varied from zero to about 40° on the last days of the battle.

Major Lynch threw some lantern slides on the screen illustrating the medical department proper. From his brief account of the medical department in the battle of Mukden it was shown what an extremely complicated matter this was in a great battle. With all the thousands of wounded, and despite the heavy fire of the Russians, there were practically no wounded on the Japanese side who were not under shelter within twelve hours. This was the maximum time. This achievement of the Japanese medical department was simply marvelous. He showed pictures of a field hospital in operation between battles. The Japanese used no hospital trains in Manchuria. They did not have the necessary rolling stock, and even if they had possessed it, still they could not have permitted it to interfere with the supply of their troops. The Russians, on the other hand, had some fine hospital trains, so that a man might be transported very comfortably; but there were so few of these trains that usually Russian patients were put on any trains returning from the front, often without any provision being made for food or attendance. This was quite characteris-tic of the difference between the medical service of Russia and that of Japan. The latter always provided adequate though sometimes rough means for the care of the sick and injured. Before Port Arthur feli, Dalny had at times accommodations for 20,000 patients. Hospital ships were frequently loaded in two hours at Dalny and immediately started back for Japan. Japan operated twenty such ships during the war. Hirshima was the principal hospital centre in Japan. The Japanese provided accommodations for about 70,000 patients in their home hospitals, and for 10,000 convalescents in their convalescent camps. These men had every comfort and care which their country could supply

In all previous wars except the Franco-Prussian, on the German side, the deaths from disease had greatly exceeded those from wounds. The Japanese made use of the present day knowledge of sanitation, and in consequence protected their army better from the inroads of disease than had any other nation up to the present time. In the field army the Japanese reported one death from wounds to 0.47 from disease. While it would be highly desirable to contrast the results of the Japanese in this particular with those of the Russians, this could not be done, as the Russian statistics were worthless. He was quite sure, however, that the Russian percentage of loss from disease was at least twice that of the Japanese. While the Japanese attained notable success in preventing diseases of known causation or methods of spread, they failed with beriberi. A soldier who returned home in Japan suffering from a preventable disease was made to realize by his family and friends that he had been a credit neither to his country nor to them. This was a powerful factor in making soldiers observe the sanitary instructions given them, the correctness of which they would never presume to question. Moreover, a commander in Japan whose forces suffered from disease to an unwarranted extent was likely to be called upon for an explanation. The necessity of careful hygiene for the army was thoroughly impressed on all officers from the time they entered the service. It was taught in all the schools of the line officers, even in the staff college, the highest officers' postgraduate school in Japan. Soldiers received their instruction in hygiene almost entirely from the medical

officers of their regiments. Frequent sanitary inspections were made by medical officers of all grades in the Japanese service; sanitary faults, therefore, could not escape detection, and so they could be corrected before great harm had resulted. A monthly physical examination was made of all Japanese troops. This proved of value, not only as a means for weeding out the physically unfit, but also for detecting communicable disease. The clothing and equipment of the Japanese in every particular were excellent, except the shoes, which were the worst footgear which had been issued to an army in a good many years. Probably no army in a long campaign had been so well supplied with food at all times as were the Japanese in the Russo-Japanese war. Rice was their staple article of diet, and sugar was used to a considerable extent to increase the nutritive value of the ration. Cigarettes and sake were issued as a part of the ration. The standard establishment for the soldier's daily allowance of food was a minimum of 2,580 calories. On account of the prevalence of beriberi, one third of the rice was replaced with barley for some time during the winter of 1904. So far as Major Lynch could judge, this had no influence on this disease. Practically all water used by the Japanese in the field was sterilized by one method or another. Major Lynch believed that "all water was guilty until proved innocent." the field latrines were invariably pits, and their contents were well covered with earth or ashes. The habits of the Japanese soldiers were good. Drunkenness was almost unknown among them. Venereal disease was apparently common in China, but successful efforts were made to prevent the Japanese soldiers from cohabiting with Chinese women, unless they were regularly licensed, in the same manner as was done in Japan. Both love of country and love of family were used to effect this remarkable result. The Japanese probably bathed more than any other people. Even in the field the soldiers had their extremely hot baths, and it was rare that a day passed that each soldier did not get into the Chinese jars which they used for bath-

The Japanese regarded typhoid fever and dysentery as contagious diseases, and isolated them just as carefully as they did smallpox. This was believed to be necessary in an army where the opportunities for contact were so numerous. Lynch was firmly convinced that any army which detected such cases as early as the Japanese did, and then isolated them, would succeed in cutting off one very serious source of danger. The Japanese recognized the possibility of infection by No measures could be taken to prevent the millions of flies in Manchuria from coming in contact with fæcal matter. The army was compelled, therefore, to rely on preventing flies from having access to their food by serving it only immediately before it was to be eaten. The Japanese, in addition to the excellent methods which he had already described to prevent water borne diseases, thought they could diminish their frequency by the use of an intestinal antiseptic, and a creosote pill was issued in little tin boxes on which was written: "To defeat the Russians, take one pill three times a day." By thus appealing to the patriotism of the

soldiers there was no doubt that the pills were taken regularly. It was believed that the medical department made a bad error on this subject of intestinal antiseptics. Very roughly, the Japanese might be said to have had about once case of typhoid fever and dysentery to the Russians six. Typhus fever, though quite common in Manchuria, was rare in the army. Tuberculosis was not commonly seen in the army. Smallpox was rare. Diphtheria, scarlet fever, mumps, and measles occurred only in isolated cases. Beriberi proved a terrible scourge to the Japanese army, and probably from forty to fifty per cent. of all the deaths resulted from it. The Japanese had stated officially that in peace 0.44 per cent. of the army had beriberi; in the Chinese-Japanese war this percentage rose to eighteen, and in the Russo-Japanese war it reached sixteen.

Major Lynch believed that beriberi was not a dietetic disease, and he was convinced that careful isolation of the cases and the proper measures of disinfection could be depended upon to prevent its spread. He ascribed the great increase of this disease in the Japanese army in war in great part to the extreme crowding of the barracks and other quarters, which gave every opportunity for infection from man to man. The success attained in protecting the health of the troops was due to the efficient application of the recognized rules of scientific sanitation. The Japanese, excellent organizers, administrators, and sanitarians as they were, could teach Americans nothing on the practice of medicine and surgery. The Russian medical department was, contrary to the Japanese, a very uneven organization. The Japanese returned a large percentage of sick and wounded men to the ranks. The most interesting cases seen were those of false aneurysms, osteomyelitis, and repairs of deformities. Neither Japanese nor Russians benefited to the greatest possible extent from the first aid packet. The packet of the former was too small, badly folded, and easily contaminated in handling; while with the latter but a small percentage of men were supplied with a better packet.

A medical department might be utilized to increase the offensive power of an army in two ways: First, the strength of an army was not dependent on the number of men on the rolls, but on the number actually on the firing line. "Where are my lost legions?" might be the cry of every commander, unless good sanitation was insured by an efficient medical depart-Second, unless the medical department of an army was so organized and administered that combatants on the firing line were given prompt attention, this line would melt away by unhurt men leaving it to assist their wounded comrades to the rear. At all times both during and between battles, the medical department should guard against unjustifiable loss to the front, by not permitting any men whose physical condition did not demand it to go to the rear. The Russian army, though hampered by bad organization and administration, undoubtedly made a fairly successful attempt to fulfill its humanitarian obligations toward the sick and injured, but it almost totally failed in increasing the efficiency of the army as a fighting force by the aid of its medical department. In fact, it hardly seemed probable that the Russian military authorities gave much thought to the latter subject. It would be going too far to say that this was the cause of the defeat of the Rus-

sians by the Japanese. It was, however, one of the factors which contributed to that result, and not the least important. It seemed to him that if they desired to profit by the experience of the Japanese they should recognize, first, that they must have a strong framework of medical officers on which to erect a structure which would bear the weight of war. The only way to attain this result, in his opinion, was by the creation of public interest and sentiment. So far as good sanitation for our army was concerned, greater difficulties were labored under than in Japan. The Japanese recognized that good sanitation depended in good part on the good teaching of personal hygiene to the individual officers and men making up their army, and with them this was a comparatively easy matter, as their war army, while much greater in size than their peace army, was made up from the active and reserve lists of the regular establishment only, and all officers and soldiers were in consequence well instructed in hygiene from the beginning of the war. America, on the other hand, had but a small army in peace, which must be augmented to a great extent by absolutely untrained men; so if Americans expected to rival the Japanese in low morbidity rates in war and so be efficient so far as these causes had an effect, Americans must go widely outside the army in teaching personal hygiene. This could only be done by good instruction in personal hygiene in schools. This really meant the instruction of a people. It was unnecessary to point out how much this would benefit the public generally in peace.

From what he had said he did not wish to have his hearers carry away the idea that a great deal had not already been accomplished by the medical department of the American army. The military forces to-day were in a stage of transition, but were gradually approaching a logical organization. They had been terribly hampered by lack of medical personnel, and in order to correct this condition they labored four years to have an act passed entitled "A Bill to Increase the Efficiency of the Medical Department." Last year this was done, and since then it had been possible to devote more attention to progress in other

directions.

Retters to the Editors.

MEDICINE AND THE CHURCH.

37 WEST FIFTY-FOURTH STREET, NEW YORK, November 16, 1908.

To the Editors:

In commenting editorially in the last issue of the Journal upon a letter of mine directed to the New York Times you say: "It is impossible to deny the truth of the greater part of Dr. Collins's contentions, but we may rise above their pessimism." May I ask you kindly to say to me what indication of pessimism there was in my letter? Surely, I took no pessimistic view of the prospects of the medical profession. Its outlook was never so promising, if one may base a judgment upon its achievements of the past twenty to thirty years. You further say: "It may be remarked that Dr. Collins underrates the activity of the Episcopal Church in the establishment of hospitals and kindred institutions for the relief of the sick and

injured in New York; St. Bartholomew's Clinic is by no means the sole or even the chief manifestation of that activity-witness, to mention only one, our magnificent St. Luke's Hospital. He appears also to ignore the immense medical work done under the auspices of the Church of Rome, the Presbyterian Church, the Methodist Church, and other Christian bodies, besides the Jews in their religious rather than in their racial capacity." I am at a loss to understand how you can construe the following (taken from my letter to the Times) so as to make it appear to have the significance that you have given it: "It is gladly admitted that the Church has built hospitals, dispensaries, and clinics; that she has carried the sick to the physician or taken physician and nurse to the sick; that she has provided summer homes for the poor. If by the Church Dr. Batten means the Roman Catholic Church, the Salvation Army, and the Jewish people, they certainly have done it." Is there anything in this sentence that permits you to say that I ignore the immense medical work done under the auspices of the Church of Rome, the Jews, etc.? Further, I would kindly ask you to point out to me wherein I have maintained that St. Bartholomew's Clinic is the *sole* manifestation of the activity of the Episcopal Church. I said: "If Dr. Batten means by the Church the Episcopal Church, then it must be denied that it has done all these things (meaning those enumerated above) to such an extent that it is justifiable to boast of it. Except in isolated instances, such as St. Bartholomew's Clinic, the Episcopal Church has done singularly little from the point of view of its wealth and position in this direction. And, Mr. Editor, I should like any one in good faith to try to controvert that statement. If you gather from that that I am ignorant of the existence of "our magnificent St. Luke's Hospital" or of St. Mary's Free Hospital for Children even, I hasten to assure you that I had a knowledge of their existence at the time when I penned that remark, the truth of which I still maintain

I have no desire to enter into controversy with the Worcesterites. My letter to the *Times* was for the purpose of attempting to show that physicians were more legitimately entitled to practise medicine than clergymen; that the assumption of the function of the practitioner of medicine by the latter profession was arrogant and unjustified; that Worcesterites had no corner on cheerfulness, hope, courage, faith, and prayer; and that it was ungracious of them to scoff at their parent, Mrs. Eddy.

JOSEPH COLLINS.

Book Rotices.

We publish 'all lists of Looks received, but we acknowledge no obligation to secure them all. Nevertheless, so far as space formits, we receive those in which we think our readers are likely to be interested.]

Guide du médeen confiste dans les accidents de travail Par le Dr. Calli ven, Assistant-adjoint d'ophthalmologie des hópitaux de Paris. Paris: Jules Rousset, 1908

The bulk of this little volume is composed of a survey of the relations of physicians to French insurance companies, tables of statistics, reviews of

decisions of the French courts, and synopses of contested cases, which render it naturally a more valuable medicolegal work in France than elsewhere, although it contains a good many points of general value. The chapters devoted to the examination of persons suffering from occupation injuries of their eves and to advice as to their care are of more general interest and suggest some valuable matters of detail.

Beiträge zur Enstehung der Geschweiter Dritte Ergänzung zur Geschwulstlehre für Aertze und Studierende. Von Hugo Ribbert, ordentlicher Professor der allge-meinen Pathologie und pathologischen Anatomie, Direcktor des pathologischen Institutes in Bonn. Mit 19 Abbildungen. Sechs beginnende Karzinome der Gesichts-Mit 19 haut eines Mannes. Bonn: Friedrich Cohen, 1908. Pp. 31.

This booklet is an addition to the author's Entstehung des Karzinoms, Bonn, 1906 (see New York Medical Journal for July 6, 1907, page 31). Professor Ribbert reports a case of six beginning carcinomata of the skin of a man's face. The examinations of these cancer formations seem to be in favor of his formerly promulgated theory that the carcinoma derives its origin from a subepithelial cellular change of the connective tissue, forming a growth of the lower cell layer of the epidermis, which growth invades the tissue below the epidermis, similar to the formation of lympathic glands. But this change also stops the epithelial spores from adapting themselves normally, as lympathic glands or hair follicles do, to the epithelial tissue, and induces a permanent hypertrophy, which finally results in an isolation from the normal tissue of a specific growth, thus forming a carcinoma.

Hay beter, Hay Asthma. Its Causes, Diagnosis, and Treatment. By WILLIAM LLOYD, Fellow of the Royal College of Surgeons, etc. Second Edition. London: Henry J. Glaisher; Chicago: W. T. Keener & Co., 1908. Pp. 101. (Price, 4s, 6d.)

The second edition of this book contains little that is new. The author describes the various theories concerning the cause and nature of hay fever that have been advanced in the past. He is inclined, we think, to lay more stress on pollen than is warranted, and less on the neurotic element in the evolution of the complaint than is reasonable. It seems to us that the latter is the essential feature of the affection, and that any irritating substance, e. g., pollen, will start the attack.

In the description of the treatment we think too little prominence is given the place of adrenalin solutions, which give certain patients great comfort, without the danger of producing subsequent deleterious effects. The evil influences of cocaine are properly set forth, but there is not a positive enough condemnation of the use of the drug. The treatment with pollantin is properly discouraged. The work ends with the publication of the histories of twenty-six cases.

Die Orthoröntgenographie. Anleitung zum Arbeiten mit potablehen Rosteenstraden Mit 32 Abhildungen Von Dr. Franz M. Groedel, Bad Nauheim. München: J. F. Lellmann, 1908. Pp. 76.

The importance of the parallel Röntgen rays has lately been fully recognized. This is also shown by the number of publications of pamphlets and of textbooks on Röntgen ray technology which treat of this subject.

Orthoröntgenography, and especially orthodiagraphy, is of great value for medicine, but the technique is rather difficult. The author's book will therefore be of help to every physician interested in this great adjuvant to diagnosis. The book gives a good introduction to the study of röntgenography and the general orthodiagraphical technique, and then describes orthodiagraphy as adapted for examinations of the heart, lungs, and abdominal cavity, and finally speaks of the orthophotographical technique of different authors, and their results as compared with orthoröntgenography, the use of which, in the author's opinion, with some exercise can be easily acquired, as it is a technically exact science upon the reproduction of which we may absolutely rely.

Diät-Vorschriften für Gesunde und Kranke jeder Art. Von Geheimem Medizinalrat D. J. Borntraeger, Regier-ungs und Medizinalrat in Düsseldorf. Fünfte verbeşserte und erweiterte Auflage. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1908.

These diet directions are very practical. There are samples of thirty-nine different directions, such as rational diet for healthy people, diet during an epidemic of cholera, during the lying-in period, during fever, in acute nephritis, in affections of the heart, in anæmia, in convalescence, in rheumatism, and for patients with gallstones, etc. The directions are usually of two kinds, for the well to do and for the poor.

The physician can order from the publishers any form he wishes to use according to the number attached to the directions, and can then give these directions to his patients as the occasion may arise, thus avoiding oral advice, which is often forgotten or misunderstood. The directions are plain, avoiding unnecessary scientific explanations which cannot be understood by the average layman. An English edition for the American physician would certainly be well received.

BOOKS, PAMPHLETS, ETC., RECEIVED

BOUKS, PAMPHLEIS, EIG., RECEIVED.

Buddhism and Immortality. By William Sturgis Bigelow. Boston and New York: Houghton, Mifflin Company, 1908. Pp. 75. (Price, 75 cents.)
Thirty-fifth Annual Report of the Secretary of the State Board of Health of the State of Michigan. For the Fiscal Year ending June 30, 1907. Pp. 188.
Surgical Memoirs and Other Essays. By James G. Mumford, M. D., Instructor in Surgery, Harvard Medical School, etc. Illustrated. New York: Moffat, Yard, & Co., 1908. Pp. 358.
Diseases and Surgery of the Genitourinary System. Rev.

Diseases and Surgery of the Genitourinary System. By Francis S. Watson, M. D., Senior Visiting Surgeon to the Boston City Hospital, Lecturer on Genitourinary Surgery, Boston City Hospital, Lecturer on Genitourinary Surgery, Harvard Medical School, etc., assisted by John H. Cunningham, Jr., M. D., Visiting Physician to the Long Island Hospital, Boston, etc. In Two Volumes. Volume I: The External Genitals, the Prostate, and Bladder. With 339 Engravings and 23 Colored Plates. Pp. xii-627. Volume II: The Kidneys and Ureters. With 115 Engravings and 24 Colored Plates. Pp. v-474. Philadelphia and New York: Lea & Febiger, 1908.

The Psychological Phenomena of Christianity. By George Barton Cutten, Ph. D. (Yale), Author of The Psychology of Alcoholism. New York: Charles Scribner's Sons, 1908. Pp. xviii-498.

Anatomic und Mechanismus der Skoliose. Von weil. Dr. Call Nicoladom, 20. Professor der Chirurgic an der

Dr Cal Neokadon, o.o., Professor der Chrurqie an der Universität Graz, k.k. Hofrat. Mit 54 Figuren auf 37 Ta-feln und dem Porträt des Verfassers. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. 58.

A Manual of Bacteriology, Cluncal and Applied. By R. Tanner Hewlett, M. D., F. R. C. P., D. P. H. (Lond.), Professor of General Pathology and Bacteriology, King's College, London, etc. Third Edition. London: J. & A. Churchill, 1008. (Through P. Blakiston's Son & Co., Philadelphia.) Pp. xii-638.

Reflections on Plague and the Methods of Checking it.

Reflections on Plague and the Methods of Checking it. (With Letters to the Press.) By Pestonjee M. Kanga, B. A., LL. B., Solicitor, High Court, Bombay. Bombay: Bombay Education Society's Press. 1907. Pp. 74. Applied Physiology. A Handbook for Studnets of Medicine. By Robert Hutchison, M. D., F. R. C. P., Physician to the London Hospital, Assistant Physician to the Hospital for Sick Children, etc. New York: Longmans, Green, &

Co., 1908. Pp. xii-298.

Ueber den Ursprung des melanotischen Pigments der Haut und des Auges. Von Dr. E. Meirowsky, Assistent der Klinik. Leipzig: Dr. Werner Klinkhardt. Pp. viii-

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fover, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service,

| during the week ending Novemi | her 20, 1908; |
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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the fourteen days ending November 11, 1908

- Abbott, F. C., Acting Assistant Surgeon. Leave of absence for fourteen days granted October 13, 1908, amended to read seven days from October 11, 1908.
- ALEXANDER, E., Acting Assistant Surgeon. Granted four-teen days' leave of absence from November 6, 1908.
- Bailey, C. A., Acting Assistant Surgeon. Directed to proceed to St. John, N. B., on or about November 19, 1908, for medical examination of aliens.
- BILLINGS, W. C., Passed Assistant Surgeon, Directed to proceed to Arundel Cove, Md., and report to commanding officer of the revenue cutter Itasca, for duty.
- BRINCKERHOFF, W. R., Acting Assistant Surgeon. Directed to proceed to Molokai Leprosy Investigation Station as often as the public business requires.
- CARTER, P. I., Acting Assistant Surgeon. Granted seven days' leave of absence from October 26, 1908, under paragraph 210, Service Regulations.
- CLARK, TALIAFERRO, Passed Assistant Surgeon. Reassigned to duty at Philadelphia, Pa., to date from July 19, 1908; directed to proceed to Schuylkill Haven, Pa., for the purpose of examining an insane alien; directed to proceed to points in Pennsylvania, New Jersey, and Delaware, for the purpose of making medical examination of aliens
- FAHEY, EDW. W., Acting Assistant Surgeon. Granted nine-teen days' leave of absence from November 12, 1908.
- FISHER, C. E., Acting Assistant Surgeon. Granted ten days' leave of absence from November 6, 1908.
- Frost, W. H., Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon W. C. Billings, directed to proceed to Washington, D. C., and report at Hygienic Laboratory for temporary duty.
- GILL, S. G., Acting Assistant Surgeon. Granted twentyeight days' leave of absence from December 4, 1908.
- GOLDTHWAITE, HENRY, Acting Assistant Surgeon. Granted twenty-one days' leave of absence from November 5,
- GRUBBS, S. B., Passed Assistant Surgeon. Directed to proceed to New York upon completion of duties in Paris,
- Gustetter, A. L., Acting Assistant Surgeon. Granted ten days' leave of absence from November 15, 1908.
- HUGHES, C. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from Novemebr 5, 1908.
- Hume, Lea, Acting Assistant Surgeon. Granted ten days' leave of absence from October 24, 1908; granted ten days' extension of leave of absence from November 3, 1008.
- JACKSON, JAMES M., JR., Acting Assistant Surgeon. Grant-ed thirteen days' leave of absence from November 9, 1908, and eight days' leave of absence, without pay, from November 22, 1908.
- KIMMET, W. A., Acting Assistant Surgeon. Leave of absence for thirty days, granted September 16, 1908, amended to read twenty-five days from September 20, T008.
- LATINDER, C. H., Passed Assistant Surgeon. Granted two days' leave of absence from October 30, 1908, under paragraph 191, Service Regulations.

 LYALL, R., Acting Assistant Surgeon. Granted three days'
- leave of absence, without pay, from November 3, 1908.
- NUTE, ALBERT J., Acting Assistant Surgeon. Granted one day's extension of leave of absence, on account of sickness, November 6, 1908.
- ONUF, B., Acting Assistant Surgeon. Leave of absence for twenty-seven days from November 1, 1908, granted October 22, 1908, amended to read twenty-seven days from November 4, 1908.
- Ryder, L. W., Pharmacist. Granted four days' leave of absence from November 2, 1908; granted two days' extension of leave of absence from November 6, 1908. SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Reassigned to duty at Baltimore, Md., to date from November 2, 1908.
- vember 2, 1908.

 Stoner, Geo. W., Surgeon. Granted five days' leave of absence from October 23, 1908.

STILES, C. W., Chief Division Zoology, Hygienic Laboratory. Detailed to represent the Service at the meeting of the Southern Medical Association, Atlanta, Ga., November 10-12, 1908.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., November 4, 1908, for the pur-pose of conducting a physical examination of an officer of pose of conducting a physical examination of an oliter of the United States Revenue Cutter Service; Passed Assist-ant Surgeon J. W. Schereschewsky, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder. Board of medical officers convened to meet at the Marine

Hospital, Seattle, Wash., for the purpose of examining alien Joseph Elia; Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the medical corps of the United States Army for the week ending November 21, 1908:
Appel, D. M., Lieutenant Colonel, Medical Corps. Granted

Prepert, D. M., Lieutenant Colonel, Medical Corps. Granted leave of absence for thirty days.

Віярнам, W. N., Captain, Medical Corps. Ordered to report at Manila, P. I., for examination for promotion. Bloombergh, H. D., Captain, Medical Corps. Relieved from duty at Fort Leavenworth, Kan., and ordered to San Francisco, Cal., to sail January 5, 1000, for Manila for

Philippine service.

Cox, Walter, Captain, Medical Corps. Ordered to report

at Manila, P. I., for examination for promotion.

DOUGHERTY, JAMES C., First Lieutenant, Medical Reserve
Corps. Ordered to active duty at the expiration of his present leave of absence.

ESCOBAR, JULIUS A., First Lieutenant, Medical Reserve Corps. Fell into an open well at Imus, Cavite, P. I.,

November 15, 1908, and was drowned.

Geddings, E. G., Captain, Medical Corps. Ordered to report at Washington, D. C., for examination for promotion.

GUITTARD, A. M., First Lieutenant, Medical Reserve Corps. Ordered to active duty and directed to proceed to Fort Logan, Col., for duty. HARVEY, P. F., Colonel, Medical Corps. Left Chicago, Ill.,

on leave of absence.

Jones, H. W., First Lieutenant, Medical Corps. Relieved from duty as surgeon of transport Buford about Janu-

ary 15, 1909, and ordered to the United States.

MON, R., First Lieutenant, Medical Reserve Corps. Granted an extension of fifteen days to his leave of

MURRAY, WILSON, First Lieutenant, Medical Reserve Corps. Ordered to active duty at the expiration of his present leave of absence, and directed to proceed to Fort William Henry Harrison, Mont., for duty.

Persons, E. E., Captain, Medical Corps. Relieved from duty in Philippines Division; will sail December 15, 1908, from Manila for San Francisco.

PINKSTON, OMAR W., First Lieutenant, Medical Corps. Relieved from duty as surgeon of the transport Crook.

PURNELL, H. I., Captain, Medical Corps. Relieved from duty at Fort Mackenzie. Wyo., and ordered to San Francisco, Cal., for duty as surgeon of the transport Thomas on its next voyage; on arrival at Manila, to report for duty in Philippines Division.

QUINTON, W. W., Captain, Medical Corps. Ordered to report at Washington, D. C., for examination for pro-

motion.

RAGAN, C. A., Captain. Medical Corps. Left Fort Monroe,

Va., on leave of absence for ten days. REASONER, M. A., First Lieutenant, Medical Corps.

lieved from duty as surgeon of the transport Thomas.

SLAYTER, JOHN T. H., First Licutenant, Medical Reserve
Corps. Honorably discharged from the service of the United States.

WORTHINGTON, J. A., First Lieutenant, Medical Corps. Relieved from duty at General Hospital, Presidio of San Francisco, Cal., and assigned to duty as surgeon of the transport *Crook*.

Navy Intelligence:

(Missal last of changes in the stations and duties of officers serving in the Medical Corps of the United States

The Corting in the Medical Corps of the Omited States for for the acceleration November 21, 1608. State on F. Medical Impactor Detached from the Navy Yard, Mare Island, Cal., and ordered to com-mand the Naval Hospital, Annapolis, Md.

Brooks, F. H., Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to the Naval Recruiting Station, Cleveland, Ohio.

BRECK, F. W., Pharmacist. Detached from the Naval Medical Supply Depot, Canacao, P. I., and ordered home

to wait orders.

Dessez, P. T., Passed Assistant Surgeon. Orders to the Pacific Fleet modified; ordered to temporary duty at the Naval Hospital. Mare Island, Cal.

the Naval Hospital, Mare Island, Cal.

FAUNTLEROY, A. M., Passed Assistant Surgeon. Detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to duty at the Naval Hospital, Amnapolis. Md.

KELLY, H. L., Assistant Surgeon. Detached from the Naval Station, Cavité, P. L., and ordered to the Decatur for duty with the First Torpedo Flotilla.

Lownder, C. H. T., Surgeon. Ordered to the Navy Yard, Mare Island, Cal., and to additional duty, in command of the Naval Medical Supply Depot at that place.

MAYERS, G. M., Passed Assistant Surgeon. Unexpired portion of sick leave revoked: ordered to the Naval Re-

tion of sick leave revoked; ordered to the Naval Re-cruiting Station, Baltimore, Md.

MUNSON, F.-M., Passed Assistant Surgeon. Detached from

the First Torpedo Flotilla on board the Decatur and ordered to treatment at the Naval Hospital, Canacao,

Puck, R. F. S., Pharmacist. Detached from the Naval Training Station, San Francisco, Cal., December 21st, and ordered to the Naval Medical Supply Depot, Canacao, P. I., sailing from San Francisco, Cal., about

January 5th.

Scott, T. M., Pharmacist. Detached from the Naval Hospital, Annapolis. Md., and granted leave for three

months from December 1st.

Vickery, E. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to the Naval Hospital, Boston, Mass.

Births, Marriages, and Beaths.

GIBNER.—In San Francisco, California, on Sunday, November 8th, to Captain H. C. Gibner, Medical Corps, United States Army, and Mrs. Gibner, a son.

Married.

Cowles-Fuller.-In New York, on Tuesday, November 24th, Dr. Henry Clay Cowles, Jr., of New York, and Miss Grace Truman Fuller.

BECHTOLD.-In Philadelphia, on Thursday, November 12th, Dr. B. K. Bechtold, of Kulpville, Pennsylvania, aged sixty-three years. Brooks.-In Baltimore, on Friday, November 13th, Dr.

W. K. Brooks.

COTTER.-In Corning, Iowa, on Monday, November oth, Dr. S. E. Cotter.

DEXTER.—In Lockport, New York, on Friday, November 20th, Dr. Benjamin F. Dexter, aged seventy-three years. FLEMING.—In New York, on Friday, November 20th, Dr.

William L. Fleming, aged seventy-three years.

JACKSON. — In Stamford, Connecticut, on Monday, November 16th, Dr. W. M. Jackson, aged fifty-six years. Pettit.—In Elizabeth, New Jersey, on Sturday, Novem-

ber 14th, Dr. Alonzo Pettit, aged sixty-seven years.

SAUNDERS.—In Lanesville, Massachusetts, on Wednesday, November 11th, Dr. Levi Saunders, aged eighty-three years, Scott.—In Cincinnati, Ohio, on Wednesday, November 18th, Dr. W. D. Scott, of Georgetown, Kentucky, aged

SULLIVAN.—In Lowell, Massachusetts, on Wednesday, November 11th, Dr. Patrick E. Sullivan. TOMPKINS.—In Fredericksburg, Maryland, on Wednes-day, November 18th, Dr. J. Edward Tompkins, aged forty-one years.

VAN MARTER.—In New Brunswick, New Jersey, on Friday, November 20th, Dr. John S. Van Marter, aged

seventy-one years.
Venooy. — In Penn Yan, New York, on Thursday,
November 19th, Dr. B. A. Venooy, of Pultney, aged thirty-six years.

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Original Communications.

CONTRIBUTION TO OUR KNOWLEDGE OF THE ETIOLOGY OF DEMENTIA PR.ECOX.*

(Preliminary communication.)

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Introduction.1

An attempt to explain the psychology of dementia præcox was made by many students of psychology and psychopathology-numerous fascinating theories resulted. In this paper only a brief reference can be given to them.

In 1886 Tschisch stated that the fundamental disorder of catatonia is insufficiency of attention. Freusberg maintained that the automatic actions in catatonia are connected with a state of weakened consciousness which lost its control over the psychic The motor disturbance is only a symptomatic expression for the grade of psychic tension. The fact that weakening of consciousness is dependent upon the disturbance of attention is also accepted by Aschaffenburg, Janet, Kraepelin, and Ziehen.

In 1894 Sommer in his studies on catatonia concluded that in this disease the perceptive processes are retarded, and the produced images often im-press on attention and the patient has great difficulty of getting rid of them.

Neisser stated that at the threshold of consciousness lie all the pathological conditions of stimuli.

Vogt, being influenced by P. Janet, thought that constriction of consciousness and reduction of attention are the main elements in catatonia. selon is of the same opinion. "Perception of external objects," he says, "perception of sound, perception of personality, judgment, and belief cer-

*Read in part before the Medical Society of the Manhattan State Haspital, February 28, 1908 *The main substance for the introduction was drawn from Jung's hook, Urbar Perchalogie der Promourer process, Jena, 1907.

tainly disappear when the intensity of attention diminishes." In regard to dementia præcox, Masselon affirms that "the habitual condition is an emotional apathy—the disorder is intimately connected with the disturbance of intelligence; they are of the same nature—the patients do not manifest any desires-the whole volition is much reduced-the disappearance of the desire is connected with all the other affections of mental activity—the elements have a tendency to revive an individual life, not being more systematized for an inactive spirit." Thus he assigns intellectual deterioration in dementia præcox to, I, attention disorder; 2, slowing of psychic process; 3, gradual decline of memory; and, 4, continuous diminution of power of combination. Briefly stated Masselon's theory implies a central psychological disturbance embracing cognition, emotion, and volition.

Weygandt made a special study of the end stages in dementia præcox, and he arrived at the conclusion that apperceptive dementia is its fundamental disorder.

Stransky, from the standpoint of clinical observation, concluded that "emotional deterioration in dementia præcox depends upon poverty or shallowness of emotional reactions and the incongruity between affect and ideation." He termed the latter condition as dissociation between thymopsyche and noopsyche. In his later studies he showed that speech disturbance is the product of intrapsychic ataxia.

Otto Gross explained the psychology of dementia præcox by dissociation of consciousness, and proposed a new name—dementia senjunctiva. savs: "Dissociation of consciousness, to my mind, signifies a synchronous discharge of functionally separate association streams." Upon this hypothesis the various abnormal mental phenomena such as autochtonous ideas, impulses, compulsions, and influences of the mind, could be explained.

Neisser believed that in dementia præcox there is a tendency to fixation of affect. "These fixations of affect destroy the ability to sympathize in joy or sorrow and lead to an emotional isolation of the patient, which goes hand and hand with intellectual

estrangement," remarks Neisser.

The studies in association methods have shed much light on the psychology of dementia præcox. Indeed such important work as Freud, Bleuler, Ricklin, and Jung cannot be too highly commended.

Jung, who followed Freud religiously and intelligently, offers a remarkable communication to the psychology of dementia præcox. Jung compares the mechanism of a dream to that of dementia præcox, and shows their intimate relations to each other. He says: "If we allow a person in a dream to

act or walk as if he were awake, then we have a clinical picture of dementia præcox." Again, "In dementia præcox a performed mechanism is loosened which normally and regularly functionates in a dream.'

The close analogy of hysteria to dementia præcox is pointed out by Jung; their essential differences may be briefly outlined. Hysteria is possessed by a complex which cannot very well be conquered. The wish dream, wish deliria, in hysteria are gratifications of the complex. There are several complexes in dementia præcox which have become permanently fixed and which cannot be suppressed. The causal relation between the complex and the disease in hysteria is conspicuous; but not such is the case in dementia præcox. However, analysis of many cases of dementia præcox clearly shows that their onset was caused by marked affectivity from which painful emotional states developed. In addition to the psychological action of the complex, it is also believed that toxines help its further activity. The psyche cannot liberate itself from the complex, and therefore personality becomes distorted. Jung says: "What Janet speaks of 'the function of the rcel' in hysteria may be applied to dementia præcox 'The patient constructs in his own imagination small, very coherent, and logical stories; that is when he comes in contact with reality he is no more able to effect attention than comprehension." In brief, Jung's theory of dementia præcox may be expressed in the following manner: A complex or detached thought content, associated with affective states, forces itself upon one's psyche and distorts personality by robbing "the ego of light and nour-ishment, just as cancer robs the body of its vitality." Hence we have a reduction of psychic energy, disorder of attention, lack of proper reaction and adjustment to and with environment, and the rise of morbid ideas.

Adolf Meyer's conception of dementia præcox is worthy of thoughtful consideration. In his own

We would ascribe as the essential features disruption of judgment, only insufficiently accounted for by any special mental or physical upset-that is, without any evidence of intoxication or other delirium, or without the manic depressive thinking disorder, or the foundation of the hysterical or epileptic disorder—discrepancies between the mood and the general reaction, peculiar attention disorders, and feeling of interference with thinking and deterioration in matters which are largely dependent on sound instinct, such as distinction of the real and unreal, and the critic of imaginative material—all this in the face of relative clearness. so that we are forced to think of a fundamental deterioraso that we are forced to think of a fundamental deteriora-tion or defect as the only means to account for so much perversion of instinct and reasoning. In connection with this there appear a number of symptom pictures, also met with occasionally as more or less adequate reactions, such as states of puzzle, of religious and mystic fascination, of automatic and stuporous states, such as can be in part obtained by hypnotic suggestion, or such as arise as psychasthenic and hysterical reactions, as we call them when they appear on sufficient and characteristic foundation. insufficiency of the provoking factor, and the oddity and incongruity rather than the mere excess of what might be the result of a sufficient cause in an average person, constitutes one of the most important criteria for the estimation of the seriousness of the process.

Despite these many magnificent explanations, we are still not able to interpret the morbid phenomena and genesis of dementia præcox. August Hoch

very thoughtfully remarks: "Dementia præcox is one of the most difficult problems of psychiatry, and it will be a long time before we shall be able to fully understand the symptoms and the principles which underlie them.'

It will be easily appreciated what a difficult task one undertakes to discuss the ætiology of a malady, the psychology and pathology of which are still obscure. Nevertheless, at the present state of our knowledge of psychopathology we have a right to restrict the group of dementia præcox to such cases in which the peculiar onset, stamps of deterioration, bizarre reactions, odd and unexplainable behavior, inconsistent emotional reactions, and the morbid ideas of a fantastic nature constitute a part or a whole of the disease picture.

The one hundred and thirty cases, selected for the purpose of study of the causative factors of dementia præcox presented the mentioned features.

THE GOVERNING ÆTIOLOGICAL FACTORS IN DE-MENTIA PRÆCOX.

Heredity.—No matter what theory of heredity we may accept, whether the Larmack's school, pangenesis of Darwin, germplasm of Weismann, plastidules of Haeckel, or Mendel's conception of transmission, the fact remains that hereditary influence plays an active part in the development of many forms of psychoses. Such eminent authorities as Morel, Dejerine, Magnan, Kraepelin, Ziehen, Biswanger, and others adhere to this view. The well known French dictum, "heredity is the cause of all causes," may be mentioned.

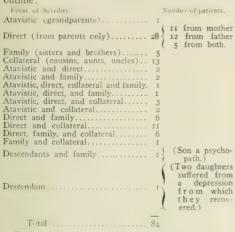
The relation of heredity to dementia præcox can However, Christian and hardly be disputed. Daraszkiewich do not attach much importance to hereditary taint. In fact, Christian states that those who have neurotic and vesanic ancestors can never become true dements.

On the other hand, Joffroy maintains that dementia præcox is essentially a hereditary disease. Morel thinks that alcoholism in parents is responsible for the malady. Clouston says that "the insanity of puberty is always a strongly hereditary insanity; it, in fact, never occurs except where there is a family tendency toward mental defect or toward some other of the neuroses." "My own observations on cases of well developed dementia præcox,' writes Jelliffe, "which I have been able to follow for many years and whose parents have been well known to me, have shown that three elements have been most emphatic in the ancestry, dementia præcox itself, alcohol, and abnormal personality or crankiness, if I may so express it.

The statistical data of the well known observers may be illustrated by the following table:

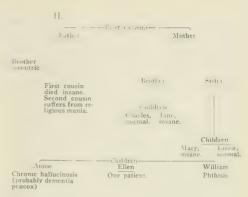
| may be mustrated by the following table. | | | |
|--|---|----|-----------|
| Author. | I | 26 | rcentage. |
| Kraeplin | | | |
| Denseny and Roy | | | |
| Christian | | | 43 |
| Croq | | | . 68 |
| Ziehen (Dementia hebephrenia) | | | |
| Wolfsohn | | | . 85 |
| Illberg | | | . 65 |
| Kraus | | | |
| Kalmus | | | . 50 |
| Pickett | | | |

In sixty-four per cent, of my own cases it was possible to demonstrate neuroses, psychoses, eccentricities, and alcoholism in patients' genealogical tree. The classification of the type heredity as well as the frequency of occurrence may be given in this outline:

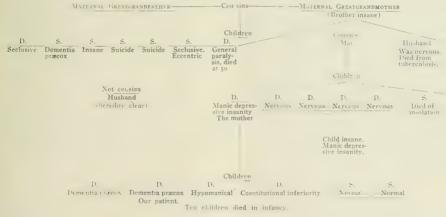


The following two interesting genealogical diagrams are of two patients who belong to this group of cases:

I. As far as could be traced the whole family inter-



ences to the development of morbid mentality is rather important. In the literature the subject is treated meagrely; only casual allusions are made to particular mental and nervous diseases, but are not mature for deductive purposes. Dexter, in his book on Weather Influences, states that "arrests for insanity are below the normal in prevalence during the colder months of the year, and above the normal for the warmer, though not the hottest months; are affected but slightly by different degrees of temperature, except by the very hottest, which produce a marked increase: are excessive for low and de-



Autointoxication.—Kraepelin suggests and the French believe that dementia præcox originates from an autointoxication process. Ingenious theories have been evolved which are plausible in books, but ridiculous in their practical applications. The disorders are ascribed to faulty hepatic metabolism, defective intestinal, and renal elimination, and to pathogenesis of the ductless glands. So far the biochemical investigations have rendered no valuable aid towards the solution of this problem. The labors of the chemist should be encouraged, but their results must contain thorough scientific worth before receiving our recognition.

Scasons.—The relation of meteorological influ-

ficient for high barometrical conditions are more prevalent for periods of low humidity than for high; are deficient for calms, with little effect from higher wind velocities; are slightly above the normal for 'fair' and considerably above for 'dry' days."

In the study of my patients, it was utterly impossible to determine the condition of the weather at the time of onset of the psychosis, but the relation of the season to the development of the disease was established with little difficulty.

The statistics are given in the following table:

Spring. Summer. Fall. Winter. Not known.

23 26 20 38 23

Age.-Beyond doubt age is an important predis-

posing factor in mental diseases. A great number "Psychoses and of cases occur in adolescence. neuroses," says Hall, "abound in early adolescent years more than at any period of life. This causes great emotional strain, which some have described as a kind of repressed insanity that is nevertheless normal at this period." "Out of 1,800 insane, Clouston found 230 between fourteen and twentyfive years of age; forty-nine between eighteen and twenty; 157 between twenty-one and twenty-five years of age. Fink reported that of 1,892 inmates of the Würzburg Hospital, 228 were twenty-nine, 12.15 per cent. males, and 11.5 per cent. females. Cullare found in France that 4.7 per cent. of all were between fourteen and twenty, and 8.8 per cent. between twenty and twenty-five.

Ziehen asserts that dementia hebephrenia is a disease peculiar to puberty, and in delayed periods it may occur from twenty-one to twenty-five, but never after twenty-five years of age. The same author, however, says that catatonia may become manifest in all ages. Sixty per cent. of Kraeplin's cases of dementia præcox occurred before twentyfive, and only five per cent. between forty and fiftyfive years of age. In Serieux's forty-six cases, the

ages ranged as follows:

| 1 | Age. | | | | | | | | | | | | | | | | | | | | | | | | N | umber. |
|----|------|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|
| 15 | to | 20. | | , | | , | | | | | , | | | | | | | | | | | ٠ | | | ٠ | 6 |
| 20 | to | 25. | | | | | | | | | | | | | | | | | | | | | | | | II |
| | | 30. | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 35. | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 40. | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | to | 50. | ٠ | ٠ | ٠ | ٠ | ۰ | ٠ | ۰ | ٠ | | , | ٠ | ۰ | ۰ | 9 | ٠ | ٠ | ۰ | ۰ | ٠ | , | ٠ | ٠ | ٠ | 2 |

In Christian's 104 patients of dementia præcox, fifty-six were below the age of twenty and fortyeight above twenty. Most of Crocq's cases were between twenty-five and thirty-five; after thirty-five it gradually declined, and beyond forty-nine it was infrequent. Aschaffenberg found dementia præ-cox seventy-four per cent. in men and eighty per cent. in women till the age of twenty-five; the cases which developed in the fourth decennium were usually in concomitance with pregnancy and lacta-

Out of my 130 cases, it was found that ten were between twelve and sixteen years of age; ninetyeight between seventeen and thirty; seventeen between thirty-one and thirty-nine; five between forty-two and forty-eight years of age.

| Age Table. | |
|------------------|--------|
| Aug Number, Age. | Number |
| 12 2 29 | 3 |
| 13 1 30 | 5 |
| 14 I 31 | |
| 15 | |
| 16 5 33 | 3 |
| 17 0 31 | 0 |
| 18 | 3 |
| 19 9 36 | I |
| 20 6 37 | 3 |
| 21 15 38 | Î |
| 22 11 30 | 1 |
| 23 6 40 | 0 |
| 24 4 17 | 0 |
| 25 7 12 | |
| 26 7 43 | I |
| 27 I 45 | I |
| 28 | |
| | |

It is interesting to note that only in two cases the

mental alienation developed at puberty. Both of them showed psychotic traits, and in one heredity was demonstrated. In one of these patients, in addition to these factors, fright acted as an exciting

The following are complete records of three oldest and two youngest cases of dementia præcox:

CASE I.-Lena H. Admitted to this hospital on June 10, 1904.

Æt. seventeen. Russia (Hebrew); heredity; single. Family history: Paternal aunt was temporarily insane.

Paternal grandfather was subject to spells of melancholy. Paternal grand uncle was melancholy.

Personal history: Patient was born in Russia in 1887. During her intrauterine life mother sustained a fall, but apparently without ill effects. Labor was difficult, but not artificial resuscitation was necessary. From the age of six months to one year she was subject to convulsions.

She was quiet, seclusive, had no initiative, everything she did was in a mechanical way, and was not as lively as her sisters and brothers. Her education was only fair. She was poor in her studies and would exert great mental effort in order to keep up with the class.

Menstruation never appeared.

At the age of eleven she suffered from measles and pneumonia. Soon after the establishment of convalescence she became quiet, depressed, would remain alone, and manifested no interest in her environment. While on her journey to the United States she was inactive, and displayed placid indifference.

In this country she was sent to school, but she showed no efficiency in mental work, and was soon forced to aban-

don her studies.

At twelve she told her mother that she had peculiar thoughts, would often cry, was afraid to go out on the street, and at night she would scream out loudly, "Oh. Mama!"

She gradually declined mentally, and at about the age of fourteen she refused to dress herself, and would not eat for days, remained seated in one place, would speak to her-self, and frequently cried and called for her mother. She would wet and soil herself.

Since the age of fifteen she became practically mute. Shortly before admission to this hospital she became excited, disturbed, destructive, refused food, and was very She was sent to Bellevue, from where she was

admitted here on June 10, 1904

Upon admission to this hospital she was quiet, answered no questions, occasionally frowned, carried out no commands, and manifested no interest in her surroundings. On account of her marked inaccessibility, delusions, and hallucinations could not be demonstrated. Gavage was nec-Physical condition showed no marked pathological conditions. On the next day she gave expression to a peculiar jargon which could not be understood very well. Soon she commenced to to take food and her appetite was ravenous.

During her residence in this hospital her condition re-

mained without important changes

As a rule patient sat quietly all day long, chewed rags, at times saliva drooled from mouth, took no interest in what transpired about the ward, did not associate with her fellow patients, and was dressed and undressed by an attendant. At times laughed and smiled to herself without a tendant. At times laughed and smiled to herself without a recognized cause, was not spontaneously productive and answered no questions. Often she made grimaces and gestures. The visits of her parents produced no impression upon her. She had many spells of excitement. On one occasion she was talkative, cried, appeared apprehensive, tossed herself on the ground, and was much disturbed. When excitement subsided she was extremely timid, and frequently jumped up suddenly as if reacting to extremel citizent in the contract of external stimuli, but was inaccessible to examination. (We have only one record of such an episode-the others were accompanied by destructiveness and mild hyperactivity.)

CASE II Jussie P Admitted August 2, 1007. Et. sixteen; Russia; single.

Family history: Paternal uncle was eccentric and flighty.

Personal lustery: Patient was born sixteen years ago in the western part of Russia. During intrauterine life mother frequently menstruated and was weak. She was the fifth of seven children. She attended school and was considered a good student. She was always quiet, would brood over trifles, and at times would become nervous. Otherwise she was considered bright, cheerful, and pleasant.

She never menstruated.

In the spring of 1904 she was frightened by her aunt, who was regarded peculiar and mentally unbalanced. (This

aunt was not consanguineous, but by marriage.)

Ever since then it was noticed that she would shrug her shoulders, was afraid to go to her aunt, and in fact, feared the house in which the aunt lived. Frequently she would cry, and refused to go to school. At this time she commenced to react to hallucinations, and often remarked, "What does he want—he wants me to eat." During these hallucinatory episodes she would become irritable and excitable, destructive and assaultive. At this time she would go to her room and remain by herself. She thought she saw black cats and heard the voices of her dead relatives. At times she would take food to excess, and at other times she would eat very little. Occasionally she assumed an ag-gressive attitude toward her mother. Whenever she was sent on an errand or to school, she would run very fast, as if she were driven by some one.

Shortly before her admission to this hospital she became

much excited, manifested assaultive acts, screamed and shouted, and refused food. She was sent to Bellevue Hos-

pital in the latter part of September, 1904.

While there she was depressed, apprehensive, and reacted to hallucinations. She said: "Somebody is trying to kill me—I was afraid—talk about me—at night—I saw Christ in the woods to-night—I was afraid—in Russia is no Christ

-I saw Christ here.

When admitted here on September 28, 1904, physical examination showed some stigmata, slight eruption, and exaggerated knee jerks. Mentally, she was restless, appeared confused, suspicious and apprehensive. She was not very accessible to examination; only after much urging she answered but few questions. The following replies to answered but few questions. The tolking queries will illustrate her peculiar trend of thought:

"I don't

queries will illustrate her peculiar trend of thought:
"Why did they send you away from your home?" "I don't
know, I was crying." "What were you crying about?" "I
don't know." "Were you afraid?" (No answer). "Where
do you live?" "With my mother." "What street?" (She
jumps up nervously from her chair and shakes her head.
"What kind of a house is this?" "I don't know."

During her residence in this hospital she was irritable, timid, peevish, and would frequently cry or laugh in a childish fashion. Often she would make peculiar motions, and would pick her face aimlessly. She was not very

communicative.

In May, 1904, she became quieter, more composed, and fairly tractable. At the time of her parole (June 9, 1904) she was quiet, answered questions readily, appreciated that she was in a hospital, was anxious to return home, but exhibited no insight into her mental condition. However, she

was still nervous and mildly restless.

When returned home she was not considered well men-lly. She answered questions readily, and would assist with light work about the house. However, this lasted but a short time. She was not allowed to go on the street for fear of getting lost. For several days she would not eat, and then again her appetite was ravenous. At times she would become excited, and then she would suddenly say, "Why did he hit me? What do you want from me?" She often talked to herself in a loud tone of voice.

For the past year she grew gradually worse. She was restless, would run away, inclined to be destructive and

assaultive toward the members of her family

August 2, 1907, she was readmitted to this hospital.

Her mental condition remained practically unchanged. She was restless, uneasy, and fidgety in her behavior. She shrugged her shoulders, rubbed her face, raised her skirt, picked her nose, and made many bizarre motions with her hands. At times she emitted peculiar sounds which could not be distinguished. Quite often she laughed to her-self loudly. When questioned she did not seem to make any effort to comprehend the examiner and her answers were given in a haphazard manner, and accompanied by no affect. For instance:
How do you feel? "All right." Day? "The 8th."

Date? "Monday." Month? "Friday." Year? "58." (At another time gave "6.") Place? "68 street." Are you sick? "I don't know." What sickness? "No." How many fingers? "6." How many noses? "1." How many cheeks? "Nothing." How many tongues? "1." How many cheeks? "Nothing." How many feet? "6." How many teeth? "8." How many tongues? "50." How many papas? "6." How many mamas? "6." How many brothers? "6." She bestowed proper attention upon her person and also

She bestowed proper attention upon her person, and always appeared clean and tidy. At times would polish the

ways appeared clean and tidy. At times would polish the floor, but could not be engaged in an intellectual occupation.

CASE III.—Mary T. Admitted March 15, 1907. Æt. fifty-five; Russia (Hebrew), widowed.

Family history: Negative.

Personal history: Patient was fifty-five years of age, and was a native of the southern part of Russia. Nothing was known of her early infancy or childhood. At eighteen she married; gave high to six children; one of them died in married; gave birth to six children; one of them died in infancy. She immigrated to the United States in 1901. She was always irritable, frequently got excited, angry, and would tear her hair, inclined to be seclusive, and was also

considered very nervous.

The first evidences of mental alienation became manifest at the age of forty-eight (two years before her immigration to this country), when several unpleasant events occurred in the history of her life. At this time her husband died, her sister was dangerously ill and death was expected, and her son escaped to America on account of some financial complication, and she (the patient) was therefore arrested and put in prison. As a result of all that, patient became depressed, cried quite often, was not able to sleep, and said that her son was dead. When letters were received from him she did not believe they were written by him. She thought everyone was her enemy. She was coherent in speech and attended to her household properly. She was afraid to go to the United States because she thought that she and her children would be electrocuted.

On the steamboat she maintained a dejected attitude, cried quite often, and imagined that she would be thrown into the ocean. When she came to this country she thought she would be killed, but soon she was convinced that this idea was erroneous. However, she was not considered a normal woman. She was suspicious, frequently heard imaginary voices which called her vile names, and people wanted to harm her and the children. She had ideas of reference, said that people were following her and laughing at her, and misinterpreted sounds, actions, and behavior of men and women. Two years ago she took off her wig (which is contrary to her religion) because she imagined

people accused her of having a scalp disease.

In 1904 she conceived the idea that a certain pushcart peddler was killed, and his body put in the basement of the house where she lived. Her memory was not affected, and she was not restless at night. When she saw pictures she thought they alluded to her. The cartoons in the newspapers were supposed to represent her image. She would talk to herself and make motions with her hands. She attended to her household duties until eighteen months before admission to the hospital. A year ago she refused food for a week, remained in bed, was very quiet, was in constant fear of an ambulance which she imagined would call for her.

About eight months before her admission patient's condition grew worse. She burned papers and when asked to account for her peculiar acts, she used to say that in so doing she purified her person. At this time she gave expression to ideas of grandeur; stated that she was worth millions of dollars, and that all the houses belonged to her. When she was threatened with dispossession she laughed and said, "How could this be possible when I live in my own house?" Frequently she demanded that a demonstration should be made in her honor because she was a queen. Whenever money was mentioned to her she would say "fæces." She talked to herself, laughed, and smiled without apparent cause, and at times gesticulated. Shortly before her removal to Bellevue Hospital, she imagined that her vaults were stolen from her; she would go to her tenants and ask them to return her money. At this time she became much depressed, distubred, spent most of her time in crying, and could not sleep or eat. She was sent to Bellevue

Upon admission here physical examination showed:

Eruption on face; skin rough and pigmented; knee jerks

exaggerated; evidences of senile decay.

Mentally the patient was noisy, troublesome, attention could not be obtained, she moaned, frequently cried, and at times showed agitation. When an atempt was made to examine her, she became disturbed, cried loudly, appeared suspicious and apprehensive. She was perfectly inaccessi-

Her mental condition showed no important changes. may be described as followe: Quite frequently she shouted, cried, and screamed at the top of her voice. When she saw the ward physician, supervisor, or strangers, she became excited, stamped with er feet, spat in their faces, and gave expression to abusive speech, and at times manifested assaultive acts. As a rule her speech was very incoherent, showed a tendency toward verbigeration, used a peculiar jargon which could not be distinguished, and was particularly fond of obscene words and phrases. not accessible to examination, and when questioned she not accessiole to examination, and when questioned size said: "Don't touch me, I am a pure woman—you are not clean—you have in you a spirit and a devil," etc. She stated she had nineteen children. Her mood was variable; at times she was depressed and apprehensive. In her habits she was clean, and she bestowed proper attention upon her personal appearance. She slept well and did not manifest nocturnal restlessness.

CASE IV .- Mary H. Admitted June 15, 1907. Æt. forty-

six; Ireland; housewife.

Family history: Maternal cousin was insane. Father died from asthma; he indulged in alcoholic excesses. Husband suffered with syphilis; initial lesion appeared nineteen

Personal history: The informant had known patient for the past nineteen years. He married her eighteen years ago. She had five children; two died in childhood; had

one miscarriage.

She was always quiet, not talkative, seclusive, attended to her household duties properly, and was considered fairly intelligent. She had no education; could only write her own name. She would occasionally take a glass of beer and whiskey, but was never intoxicated. Menstruation was irregular; it would occur once in three months

Psychosis: August 5, 1906, her son stole \$200 from her, and suddenly disappeared. No trace could be found of him. Soon after this she commenced to worry, and would talk about her missing son, but at the same time she attended about her missing son, but at the same time she attended to her housework. One month later she would assume a sitting position all day long, would not do any work, and ofttimes would cry. Last November she said that she saw her name on the cars, and conductors were looking at her. She would say to her husband, "Here is my name in large letters—go and take it off—go to the car stables and report this matter." In April and May she would frequently become disturbed, would destroy things about the house, and would make an attempt for the window. For the past few months she had neglected her person, would not do her work, stated that she heard people call her vile names, and that she was watched by men. She said that she got a bad name and was accused of being an immoral woman.

bad name and was accused of being an immoral woman. On admission to the hospital patient was mentally quiet, depressed, spoke coherently, and complied readily. Asked if she felt sad she said, "Well, no, sir, I don't—I feel happy." (Looked depressed). Why so happy? "I didn't do anything wrong, and I don't feel unhappy." Have people talked about you? "I didn't hear them talking about me, but I see them looking at me." How long has this been going on? "I never used to go out much because I didn't want people looking at me so much for nothing." didn't want people looking at me so much for nothing; I noticed them long ago." You have been annoyed a good while? "The neighbors were the cause of it—they would not mind their own business." Did you ever find them out? "No, always kept at the back window, I never went to the front." She knew the day and month, called the place Blackwell's Island.

On the twentieth of June she was mute, tube fed, and wet and soiled the bed.

July 10th she answered questions in a low voice with little hesitation, said she perceived the odor of dead and human dirt. She admitted hearing voices in the left ear, and, as she put it, "It is preaching—rendering the doctrine of the Catholic faith-it comes from a saint and I hear it

On the fifth of August patient was morose, gloomy, gave On the fifth of August patient was morose, gloomy, gave sarcastic and pert replies, and was not very accessible to examination. When asked what place it was she replied, "The last place God made and He forgot to finish it." Are you sick? "Yes, I am." Have you any trouble? "Brain fever." Do you hear voices? "No, I speak to voices all the time." Why did you come here? "Why, I came here to look at the buildings—this is the nicest scenery here." When further questioned about coming here, she said, "I This is a peep show—I was brought here for a show.

This is a peep show—I was brought here for a fake—to see what things are here." Her time orientation was correct.

While under further observation patient was quiet, seclusive, did not employ herself, and did not manifest great interest in her environment. She spoke slowly in a coherent strain, answered relevantly, and cooperated fairly well. She stated that about two weeks before coming here a man entered her womb and remained in her body; he was man entered her womb and remained in her body; he was in the chest, back, and everywhere; he was in her body because she was an angel; he told her to be happy and prayed for the people. He sang quite often and told her what to say. He spoke to everyone on religious matters. He said that everyone should be good and lead a good life. She heard him in the left ear. The clergyman lay always one neard nim in the lett ear. The clergyman lay always in her body; he did not eat or sleep; once she heard voices at night. She knew the day, gave the month incorrectly, and the year 167. This place was Blackwell's Island. She saw no insane women in the place. Her retention was poor. Memory for the remote past was fairly good, but for the immediate past was rather defective. Mood was that of indifference. that of indifference.

Physically, her knee jerks were somewhat brisk, pupils were responsive to light and accommodation, no perceptible

tremors, no defective speech.

On November 20, 1907, she died from strangulated hernia.

On November 20, 1907, she died from strangulated hernia. No autopsy was permitted.

Case V.—Ida D. Admitted on April 28, 1904. Æt. forty-three; United States; single.

Family history: Father, brother and sister, died from tuberculosis. Maternal uncle died insane; two maternal cousins are now mentally deranged. One uncle died from

apoplexy. Personal history: Patient was born in this country in 1861. She received a moderate education, and was a good musician. Menstruation accompanied by no abnormal

phenomena.

She was always sullen, seclusive, was not fond of amusements, and quick tempered. She indulged in no alcoholic beverages.

In the winter of 1904 she suffered from pneumonia; convalescence was protracted, and during this time her brother

was also sick with the same disease

In January of 1904 she commenced to worry about her brother's condition. She became quiet and depressed. After her brother's death the depression and unnatural quiet-ness became more pronounced. When she was spoken to she would stare vacantly, and answered no questions. condition grew gradually worse. At times she would throw articles at her mother and sister. She became resistive and extremely filthy in her habits. Her commitment was im-

Upon admission to the hospital physical examination showed no definite pathological lesions of the vital organs.

Mentally she was quiet, complied with requests readily, and made few spontaneous remarks, which were limited to the following: "Oh, those poor creatures—these poor creatures! What is the matter with them?" Her expression was sad. Her attention was difficult to obtain. She looked at the examiner in a perplexed manner. She appeared un-easy, and fidgety in her behavior. When asked for her name, she said: "My own name—(shook her head, rubbed name, she said: "My own name—(shook her head, rubbed her hair) that ain't right—well, my own name—I know my name—well, it is not right for those other people to go up—maybe I will tell you by and by." How old are you? "When I came here yesterday there was Mrs." What year is this? "Wait a minute." What month is this? Suddenly "This young woman." What day is this? "I say this is not right—this is not right."

On the next day she was strongly resistive, masturbated openly, talked in a disconnected strain, and was mildly distractable. She said, "Last night I picked up something-a

ring—the bishop—J. C.—Jesus Christ—I can read that—(looking at notes) in the Bishop's room—state room—May's eyes—they walked in—went on chair—in state room—and covering up the little children—them children out there—the priest—coming on the boat—(priest was in the ward) she was not there." When questioned regarding hallucinations, she said, "Sometimes I hear delusions." What do you mean? "Cursing, calling me names—wh—son of a b—." Where do they come from? "Intemperance caused it—I guess it always sounds in my ears—sometimes loud—I hear them at night the most." Do you answer them? "Yes, I tell them to go to hell."

them? "Yes, I tell them to go to hell."

April 30, 1904. Patient showed great variability in attention; at one time answered questions readily, and then again made irrelevant and peculiar replies. For instance: Who brought you here? "I ain't a Guinea." Why do you say that? "Ain't they calling me a Guinea around here?" How did you get here? "No, I came on the boat, train and free." What do you mean by fire? "Burning the yellow house down." Who brought you here? "My mother used to come here and we descended from the soldiers." What nouse is this? "Oh, my head is muddled up."

May 6, 1904. Patient gave some data about her personal history. She stated that her age was forty-five and that she was born in 1859; went to school from eight to sixteen; gave the month, year and date correctly; the place was either M. S. H. or Bellevue Hospital. Her answers to some questions were irrelevant and bizarre. Why did you

May 6, 1904. Patient gave some data about her personal history. She stated that her age was forty-five and that she was born in 1859; went to school from eight to sixteen; gave the month, year and date correctly; the place was either M. S. H. or Bellevue Hospital. Her answers to some questions were irrelevant and bizarre. Why did you come here? "They put us out of the house because we did not pay our rent and they sent us here." Why did you go to Bellevue Hospital? "They took me to see my brother, who was sick, and they set a trap and got me into the station house, and then took me to Bellevue; then my head got muddled."

Since May 27, 1904, patient refused to answer questions, offered no spontaneous remarks, and was practically inaccessible mentally. She was obstinate, resistive, masturbated in a shameless manner, and at times reacted to hallucinations. On July 11th she became wildly excited, and assaulted the nurses. This was only of short duration. For the past three years patient was quieter, at times

For the past three years patient was quieter, at times masturbated openly, and was obstinate and resistive. She assumed a sitting posture, head bowed, and hands folded. Often she muttered to herself in a low tone of voice. At times laughed and smiled to herself in a childish fashion. She answered no questions and complied with no requests. The visits of her relatives and friends made no impression upon her. She showed muscular rigidity in both arms, and neck. She reacted promptly to pin pricks. She required constant attention from attendants; it was necessary to dress and undress her. She wet and soiled herself.

Nationality.—The rate of frequency of mental alienation in a particular nationality cannot be definitely estimated. It is stated that insanity bears a direct ratio to a nation as the latter to civilization. The fact that modern civilization is a contributing factor to neuroses and psychoses cannot be questioned. The distinguished American sociologist, Professor Giddings, says: "Degeneration manifests itself in the protean forms of suicide, insanity, crime, and vice, which most abound in the highest civilizations, where the tension of life is extreme, and in those places from which civilization has ebbed and from which population has been drained, leaving a discouraged remnant to struggle against deteriorating conditions." . . . "The statistics of insanity are imperfect, but there is no doubt that insanity has greatly increased within a generation and is still increasing, and that it is most prevalent where life is intense or hard."

Our information regarding this interesting subject must depend upon statistical documents. For the fiscal years beginning October 1, 1906, and ending September 30, 1907, 834 women were admitted to the west division of Manhattan State Hospital. The majority of the patients came from the United

States, Ireland, Germany, Russia, and Austria, as this table will show:

| Nation. | No. |
|---------------------|-----|
| Austria | 52 |
| Bohemia | 3 |
| Belgium | 2 |
| British possessions | 2 |
| China | |
| Canada | |
| Cuba | |
| Denmark | I |
| England | 17 |
| Finland | |
| France | 6 |
| Germany | 79 |
| Galicia | |
| Holland | |
| Hungary | |
| Italy | |
| Jreland | |
| Norway | |
| Poland | |
| Roumania | |
| Russia | |
| Scotland | |
| South America | |
| Spain | |
| Sweden | _ |
| Switzerland | |
| Syria | |
| United States | |
| West Indies | 29/ |
| West mules | 0 |

In my own cases, forty-eight were Americans, twenty-seven Russians, seventeen Irish, seventeen Austrians, eleven Germans, three Italians, three Hungarians, one Roumanian, one Cuban, one French, and one Finnish.

It is extremely interesting to note that the Jew shows a great predilection to neuroses and psychoses. Of 834 women admitted to Manhattan State Hospital for the past year, 188 were of the Jewish faith—thus making about 22.5 per cent. In my 130 cases, fifty-three were Jews.

Kraepelin is of the opinion that consanguineous marriages among the Jews are responsible for the frequency of insanity. Emil Meyer maintains that due to force of circumstances the Jew was compelled to lead a seclusive life, and, moreover, his/occupations are of such a nature which require no bodily activity. It must also be borne in mind that the Jew lacks an important phase in his education -physical culture. He bestows too much attention upon the mind and completely neglects his body. One must not overlook a striking fact in the history of the Jews. Ever since time immemorial this race was the world's stepchild. They had many and many a cruel stepmother, who treated them without pity or shame. Hence, by reason of this long and continuous torture, abominable abuses, and contemptible treatment, the Jew acquired a neurasthenoid constitution and a psychopathic predisposition.

Psychotic Traits.—"On one side," says Kraepelin, "many observations speak in favor of a disease process which can develop long before that shown in our diagram. Especially it appears to me that the fact is worthy of being emphasized that in about twenty per cent. of our cases certain peculiarities in early childhood were quite often noticed long before the symptoms of dementia præcox fully developed. They were seen in connection with mild phases of the disease—seclusiveness, fear of people.

capriciousness, over religiousness, unruliness, irritability, affectation, and lack of moral control. Not infrequently well defined mental enfeeblement is present upon which a new disease is engrafted. As it appears to me, herein lies the solution, that they are deviations from the normal in the youth and early adolescent life, and they are succeeding phases of the same disease which later become manifested as dementia præcox." And August Hoche also expresses similar ideas—"that a number of cases of juvenile dementia were before the onset of the disease marked by nervous and mental stigmata; from the anamneses it was learned that patients often suffered from enuresis, pavor nocturnus, somnambulism, irritability during the menstrual epochs, etc., or they were seclusive or wilful; in a small number of cases they were weak mentally." Adolf Meyer states that ætiologically the constitutional makeup counts for a great deal, but not in the vague sense of heredity and degeneracy merely: "In cases of dementia præcox we find over and over an account of frequently perfectly exemplary childhood, but a gradual change in the period of emancipation. Close investigation shows, however, often that the exemplary child was exemplary under a rather inadequate ideal, an example of goodness and meekness rather than of strength and determination, with a tendency to keep to the good in order to avoid fights and struggles. Later religious interest may become very vivid, but also largely in form; a certain disconnection of thought, unaccountable whims, make their appearance, and deficient control in matters of ethics and judgment; at home irritability shows itself often wrapped up in moralizing about the easy going life of brothers and sisters; sensitiveness to allusions to pleasures, health, etc., drive the patient into seculsion. Headaches, freaky appetite, general malaise, hypochondriacal complaints about the heart, etc., unsteadiness of occupation and inefficiency, day dreaming, and utterly immature philosophizing, and, above all, loss of directive energy and initiative without obvious cause, such as well founded preoccupations, except the inefficient application to actuality. All these traits may be transient, but are usually not mere neurasthenia, but the beginning of a deterioration, more and more marked by indifference in the emotional life and ambitions, and a peculiar fragmentary type of attention, with all the transitions to the apathetic state of terminal dementia."

In about sixty-eight per cent. of my cases it was conclusively demonstrated that the patients presented psychotic traits during their childhood and adolescent life. These were: Seclusiveness; timidity; fear of being alone; unsociability; not fond of amusements; cherishing solitude and shunning company; unnatural piety; sanguine temperament; irribability; easily angered and excited; brooding over trifles; crankiness; capriciousness; egotism; haughtiness; sensitiveness; vindictiveness; general backwardness and absent mindedness; lack of initiative; childish laughter; inclination to obstinacy and indifference; inability to learn a trade.

One of my patients in her normal days had a habit of shaking her head from side to side. Another would cry loudly while doing her lessons. Another was always dreamy, had no initiative to do

anything, could not learn a trade, and inclined to be seculsive. Another was extremely shy and unsocial, was not fond of playing, would conceal herself from strangers, was irritable, absent minded, and obstinate. Another was afraid of music, would make peculiar grimaces and gestures, was easily angered, and could not get along with children.

It is worthy of note that in sixty-seven per cent. of these patients vesanic or neurotic heredity was

determined.

Education.—Faulty systems of education, as well as mental surmenage, are contributory factors to all forms of adolescent insanity. Jelliffe asserts that "school work is not the only cause of fatigue by any means, but it plays a rôle in the genesis of the neurasthenoid background which is so prominent a feature in many of the predementia præcox signs, and one cannot fail to be impressed by the unnatural fatiguability of these individuals. . . . Such good observers as Emminghaus, Ziehen, Eulenberg, Pick, L. Strumpell, Kahlbaum, Hecker, Christian, Wille, Uffelmann, Biswanger, Baginsky, not to mention scores of others of equal prominence, all describe well marked neurasthenic development in the child, and young adult, and ascribe them to the overburdening of school life."

In one of my patients, mental surmenage was regarded as an important factor in the causation of her mental breakdown. She was a young woman of eighteen, attended New York Normal College, and was apparently bright in all studies save mathematics. She had to work very hard in order to keep up with the class. She at last failed in this subject at her final examination. The over exertion of mental effort associating with the worry over failure in examination caused her mental breakdown. She could have been saved if the pedagogues would not have attempted to force upon her a subject for which she showed no inclination.

Thirteen of my patients were poor in their studies; twelve were exceptionally bright, one, who was of Irish extraction, carried honors in German, and another graduated from school with a medal; seventy-two patients received a fair education; forty-one graduated from a common school, three attended high school or normal college; fourteen were illiterate.

ere illiterate.
(To be concluded.)

PERITONITIS DUE TO APPENDICITIS.

With Special Reserves to Diffuse Suppositive Peritonitis.*

BY FRANZ TOREK, A. M., M. D.,

Attending Surgeon to the German Hospital and the New York Skin and Cancer Hospital; Adjunct Professor of Sungay in the New York Postgraduate Medical School.

If the appendix perforates in consequence of inflammation and the opening has not been closed by adhesions, there results a more or less extensive infection of the peritoneal cavity. This infection may spread in a short time over a great part of the peritonæum, or a circumscribed abscess may form. This abscess, however, may later on burst through its walls and invade almost the entire peritoneal cavity.

*Read before the German Medical Society of the Co. 31 New York, November 2, 1908

Such an invasion of the peritoneal cavity was formerly called "general peritonitis," but as it occurs very rarely that the entire peritonaum is involved, that name has been abandoned and the term "diffuse suppurative peritonitis" has been adopted. To describe the extent to which the pus or purulent serum has spread, the following terms are employed: A suppurative process that is walled off from the rest of the peritoneal cavity is designated simply as an "abscess" or as "circumscribed peritonitis"; an extension over the greater part of the peritoneal cavity is called "diffuse peritonitis"; while those processes in which the purulent serum is not walled off, but free, which, however, have as vet extended only moderately far, are described as "progressive or spreading peritonitis." The term "diffuse suppurative peritonitis" therefore should be employed only in those cases in which the pus has extended well over to the left side of the abdomen. Unfortunately these terms are, even at the present time, not always strictly adhered to in reports upon cases, a fault which often causes the reader to receive entirely erroneous impressions.

It is true the exudation of serum and leucocytes on the part of the peritonæum is, as everywhere in the body, a salutary process which has for its object the warfare against the inroads of the bacteria. But, on the other hand, an extension of the purulent serum implies also the spreading of the poisonous material, and experience shows that in diffuse suppurative peritonitis the struggle, as a rule, terminates in favor of the bacteria, as the disease almost invariably ends fatally without surgical treatment.

Surgical treatment has for its object the removal of the appendix and of the pus. In the case of abscesses some hold that the removal and drainage of the pus will suffice; but if this plan is followed, the appendix should be removed later to insure against recurrence. I always remove it at the time of operating on the abscess, unless strong counterindications forbid. In progressive and diffuse peritonitis all agree that the appendix should be taken out at once.

In all cases of spreading peritonitis and in many cases of abscess the right rectus incision will give good access. Some abscesses are better attacked through a more lateral incision, in which cases the opening of the general peritoneal cavity can usually be avoided. The pus is removed by mopping, not by irrigation, and the abscess cavity is drained.

In spreading peritonitis-that is, in cases where the pus is free, not confined by adhesions, but as yet diffused over a teritory of limited extent—the pus is also removed by mopping, not by irrigating. By flushing one would incur the risk of spreading the pus to parts of the peritonæum which had not been involved. Drainage in these cases is not necessary, unless it is impossible to close the stump of the appendix properly, as may happen, for instance, if gangrene extends well up to the cæcum or even into it.

Now we come to the most important cases, those of diffuse suppurative peritonitis. This form has always put to a test the best efforts of the surgeon. The method of treatment has gone through the gamut from simple incision and drainage up to the employment of numerous incisions in different parts of the abdomen with copious gauze packing, without, however, showing any improvement in the results, recovery being rare. In fact, it was found by animal experiments that extensive gauze packing in the peritoneal cavity was distinctly harmful. This was, therefore, given up, and a single incision in the right lower quadrant was again used, special weight being attached to the importance of washing out the peritoneal cavity. This was done with the aid of a long metal tube introduced through the wound. Then a small drain was introduced. The success appeared to be quite satisfactory, and several surgeons pointed with pride to the fact that it had been possible to save fifty to sixty per cent, of the cases by this method combined with Fowler's position.

Fowler's position, a posture in which the pelvis is low, while the back and head are raised, was employed for the following reason: It had been shown experimentally that colored fluids introduced into the peritonæum were absorbed most slowly in the pelvis and most rapidly in the diaphragmatic portion. In view of this observation the fact that those cases of appendicular inflammation with diffuse suppurative peritonitis, in which the pus had found its way to the diaphragmatic region, were particularly serious ones, was construed to signify that the more active absorption of the pus by the diaphragmatic peritonæum was responsible for the sepsis. reason Fowler introduced his posture, so that the pus should flow away from the diaphragm toward the

pelvis, which he drained.

This argument sounds quite logical, but on closer scrutiny is found to be faulty in the following points: In the first place, those experiments for studying the absorption of fluids in different parts of the abdominal cavity were made with non-irritating fluids and do not permit us to draw any conclusion as to the behavior of pus. It is safe to assume that the stomata in the diaphragmatic peritonæum will close promptly when irritated by a septic fluid. In the second place, it must be considered that the cases in which pus from a perforated appendix has extended to the diaphragm, are serious ones for the very reason that the suppuration must be very extensive in order to reach that part. The more the pus spreads, the higher it will ascend and the more severe will be the peritonitis. The presence of pus in the diaphragmatic portion, therefore, characterizes the cases as serious simply because it signifies a wide extension of the peritonitis. In a similar manner a peritoneal collection of pus having its origin from an ulcer of the stomach would be of far more sinister significance if it extended down into the pelvis than if it remained confined to the region of the ulcer. In the third place, it is a mistake to assume that pus which may remain in the peritonæum after lavage will flow to the deepest point in the same manner as ascitic fluid does. Accumulations of pus that were not evacuated by the lavage were certainly in part shut off by adhesions and cannot flow down, while. in the case of freshly forming pus, the loops of intestine have ample time to obstruct its descent.

My own method consists in making a large median incision, which in most cases extends to a couple of inches above the navel. The appendix is rapidly exposed and tied off. The pus which pours out on opening the peritonæum and on searching for the appendix is at once rinsed off with salt water, so that the removal of the appendix may be done in a terri-

tory not too much soiled. Then follows the careful cleansing of the peritoneal cavity by pouring saline solution from bottles or pitchers. This is done systematically, taking up one region after another, for instance, first the region of the appendix, then the pelvis, then the left lower part of the abdomen, finally the parts higher up. During these manipulations the intestines must be treated as tenderly as possible. The wound then is closed completely with through and through silk sutures, no drainage being employed, unless it has been impossible to close the stump of the appendix, in which case a drain is introduced down to the stump through a separate small lateral incision. Furthermore, I do not employ Fowler's posture and avoid inducing peristalsis during the first five days.

This mere outline of my method must suffice, as I have already described it fully, citing eighteen histories (Medical Record, December I, 1906). Of those eighteen patients I succeeded in saving fifteen, or 83½ per cent., a figure which up to the present time has not been approximated by other methods. I have now completed a second series of eighteen cases, again with three deaths, so that the percentage of recoveries has remained the same. That my cases were not selected will at once be plain through the fact that I have refused to operate only in a single case, that of a private patient who was brought to the hospital in a moribund condition and died a few hours after her admission.

The following points in my method may require some explanation: 1, The large median incision; 2,

cleansing by irrigation; 3, closure without drainage. By the large median incision we gain the best access to all parts of the peritoneal cavity and are better able to cleanse it than by a small incision at some other site. I have repeatedly evacuated collections of pus remote from the original focus, for instance, in the left upper quadrant, and already walled in by fresh adhesions. Such collections would not have been emptied if a small incision and a tube had been used for irrigating. The shock of the operation is not increased by the greater length of the incision. The numerous incisions formerly used and again abandoned did harm not owing to the extensive cutting, but owing to the excessive use of gauze packing for drainage. The unavoidable handling of the intestines, furthermore, can be done much more gently through the large incision than through one giving insufficient access-and gentleness in handling the peritonæum is an absolute condition for

The necessity of gentleness in handling also explains the second point, cleansing by irrigating. In no other way can the cleansing of the peritonæum be done so gently as by irrigating. The counter indication against flushing, which I mentioned in speaking of progressive peritonitis, namely, the danger of spreading the pus by flushing, does not exist in the diffuse cases, for in these the pus is already widely spread.

The third point, the closure of the abdominal cavity without drainage, rests upon the fact that the peritonæum, after it has been washed clean, is well able to cope with what little infectious material may yet be left. Furthermore, it is impossible to drain the peritoneal cavity, as may be seen from what I

said in reference to Fowler's position. Even drainage at five or six places would not only fail to fulfill its purpose, but would do harm, as experience has shown. In all my cases I have drained only twice, when the point of origin of the appendix could not be properly closed owing to extension of the gangrene to the cæcum. This was done by the introduction of a strip of gauze through a separate lateral opening. The indication for drainage in those cases was not the presence of diffuse peritonitis, but the expected escape of fæces.

The last word on diffuse suppurative peritonitis has surely not been spoken, but I hope that it has been my good fortune to add a mite to our knowl-

edge in this chapter.

59 East Sixtieth Street.

CHOLERA AND COMMERCE.*

By W. T. JENKINS, M. D., New York,

Former Health Officer of the Port of New York; Port Officer of the Anchor Steamship Company; Medical Director, Merchant Marine Hospital Service; Sanitary Engineer, New York Board of Health, etc.

I appreciate the honor of contributing to this "symposium" on cholera. The breadth of my subject is apparent, as also the difficulty of treating it adequately in the time to which I must confine myself.

I must deal chiefly with the interference of both commerce and the liberty of passengers caused by regulations to prevent the advance of cholera, although they have been of value in stimulating scientific research and in giving rise to international conferences and also many national commissions.

The results of these councils have been far reaching, as, for instance, the discovery of the spirillum of cholera, by Robert Koch, the reduction to concrete form of our knowledge of this disease, and the revolutionizing of the methods of quarantine.

Interesting and important facts are: The place of departure of the cholera is India; its path on land corresponds to that of travel and traffic. Its transmaritime advent, of course, has corresponded with the track of commerce, and its North American visits have been in cycles of about sixteen years.

The last outbreak in America was in 1873, an interim outbreak, the explanation of which may be found probably in the arrival of ships at New Orleans, when the epidemic entered on vessels from ports widely scattered all over the globe.

Doubtless on account of efficient inspection, no cholera appeared at any port in the United States in 1882, but in 1887 two French steamers arrived at Quarantine at New York with cholera aboard, but owing to prompt isolation and detention the disease did not get beyond Quarantine.

It was this appearance of cholera that caused the Academy of Medicine to appoint a committee which, at the request of the mayor, investigated the conditions of the port and made recommendations for such improvements as would bring the quarantine equipment up to the highest standard of modern scientific and medical knowledge. The result of its work was the plant which I received from my predecessor

"Read at a meeting of the Medical Association of the Greater City of New York, November 16, 1908.

in February, 1892. The next appearance of cholera, which was in August and September, 1892, was somewhat more formidable than the preceding one. It came from Hamburg during my first year's service as health officer, and its peculiarities are of sufficient interest to permit special mention, but before dwelling on its characteristics I wish to remark that it is instructive to note the following: The sixteen year period has begun to be modified by the increased volume and diversity of commerce. It will also become apparent that this importation was confined to the lower bay of New York harbor. On February 2d of this year (1892) I entered upon the duties of health officer. On the 30th of the previous month the steamship Massilia had cleared Quarantine after medical inspection. On the 11th of February the board of health reported the discovery of fifteen cases of typhus among the immigrants landed from this steamer. These were Russian Hebrews who, in accordance with the provision of the Baron Hirsch fund, intended to seek refuge in Palestine, but were denied passage through Turkish territory, and therefore took passage for America. This outbreak put the health officer on the alert. I notified all steamship companies of the necessity of detention, inspection, and disinfection of baggage at the ports of embarkation, and it is due to this watchfulness that seven months later an epidemic of cholera was prevented. On August 19th, from the daily telegraphic dispatches from which we had been studying the march of cholera through Eurasian inland towns, I predicted its outbreak in Hamburg; and, in accordance with my conviction, telegraphed the Secretary of State: "Please inform me if you have any information of cholera in Germany," to which I received the reply on the same day that he had none, but four days later I received the following telegram from the department in Washington: "Cholera officially reported in Hamburg." A few hours later a second message came, reading: "Following from consul at Hamburg: 'Health officer states officially Asiatic cholera in Hamburg. Have stopped bill of health.' While in full confirmation of what I had felt must

have been the case, I received on August 25th, two days later than the previous two telegrams, the following: "Our consul at Hamburg cables this morning: 'Hamburg authorities admit to-day Asiatic cholera; has been in Hamburg since the 18th. . . Cable if and how long quarantine will be imposed." I immediately issued proper regulations and telegraphed the same to the Secretary of State, and these were promptly sent to consuls abroad. results of these regulations (which, by the way, are still in force) appear in my report to the legislature in which I say: " . . . It is a matter of gratification that, although persons who brought cholera to Hamburg were passing through that and other ports constantly on their way to the United States, the continuation, throughout the entire period of this epidemic in Russia, of the consular hygienic measures contributed in no small measure to prevention of disease at this port. In addition to these preventive measures, means for bacteriological diagnosis and a complete hospital equipment were provided at this port. One serious difficulty was en-

countered.'

While previous provisions made it possible to deal with a limited steerage with infection, no provisions had been made to limit the freedom of cabin passengers, and in addition to this, and of greater moment, absolutely no provision was made to shelter or otherwise care for infected or suspicious cabin passengers. What made it more difficult was the fact that the committee of the Academy of Medicine in 1887 had failed to incorporate in its report any recommendation for such an emergency as the disposition of cabin passengers, an omission which was probably excusable, because previously cholera had not existed in the cabin.

During the period from August 31st to September 15th six ships with cholera arrived, two of which carried cabin passengers, and in the cabin of each suspicious deaths had occurred.1 The total number of cases admitted to Swinburne Island was seventytwo, and the percentage of death as stated by Byron² and Wilcox was only eleven. This excellent showing was due in large part to the treatment of Dr: Judson Daland, clinical instructor in the University of Pennsylvania, who was in charge. This consisted in a minute and painstaking medication and surgical

procedure, the latter predominating:

Treatment.—In the premonitory diarrhoea, if there was no collapse, the first step was to clear the bowels, which was done by the administration of 10 grains of calomel by the mouth, and this repeated every hour until three doses were taken or thorough evacuation secured. Afterward one half grain was administered every two hours. Stimulants were used as required, preferably brandy, generally administered hypodermically. In the stage of asphyxia the stomach and bowels were thoroughly washed out. For the stomach the Fancher tube was used for the purpose of introducing a 1 in 1,000 solution of hydrochloric acid. The procedure was repeated every two hours. The intestine was washed out with a two per cent. aqueous solution of tannic acid, half a gallon being used at a time at a temperature of 108.9° F., and repeated every two hours. A long (two feet) rectal tube was employed, the patient lying upon his back, and gentle massage was made if there was any difficulty of passage of fluid beyond the ileocæcal valve.

The purpose of this procedure was: I, To wash out the intestine; 2, to precipitate the ptomaines; and, 3, to warm the body. After each injection the bodily temperature rose from one to three degrees F.

When the pulse began to disappear and respiration became shallow, then hypodermoclysis was resorted to. The solution employed was sodium chloride, 3 parts; brandy, 10 parts; to 1,000 parts of sterilized water kept at a temperature of 104° F. One quart was used for an adult, and it was injected into the flanks at about the eighth rib, and was repeated every second to fifth hour, according to the necessities of the case. The largest amount used in one patient was eleven quarts. In several cases inhalations of oxygen at the rate of a gallon every hour, watching the heart, were resorted to. No nourishment was administered while vomiting persisted. At

¹Jenkins. Health Officer's Report, Appendix E, 1893, 110th Assembly session, p. 196.
Appendix E. Health Officer's Report, No. 71, p. 121.
Scholera, 1892, in New York. American bournal of the Medical Sciences, ev. p. 62.

other times peptonized beef juice, champagne, and milk with carbonated water—three parts of the former to one of the latter—were employed. The distressing cramps were avoided in all but two cases by placing the patients in a warm atmosphere, in their beds, near the steam radiators, and building a tent over them, so that they would be in a current of hot air. During convalescence a simple and nourishing diet was instituted.

It is of more than passing interest to contrast with this showing the reputed cases of cholera on the Island of Manhattan, where there were said to have been eleven, in two of which the nature of the disease was not determined, making in all nine cases of cholera with nine deaths. It is therefore evident that in this epidemic the cholera patients in the city showed, the largest death rate in the cholera records. It must also be noted that not one of these cases could be traced to any infected ship, either in or out of quarantine.

During the cholera epidemic there were inspected and passed with but slight detention at Quarantine from August 31 to October 14, 1902, crews, 34.612; first cabin passengers, 17.330; second cabin passengers, 13.050; steerage, 15.081—a total of 89.073, and although these ships passed near the quarantined fleet, not one case subsequently devel-

Of those who contributed for the supply of these unusual necessities, namely, detention and suitable care of cabin passengers, among whom there had been suspicious illness, Mr. J. P. Morgan, as famous for his charity as he is noted for his financial ability, is deserving of first mention. This philanthropist furnished the steamer *Stonington* of the Fall River Line. The navy lent the recruiting ship New Hampshire, and through the courtesy of the Secretary of the Treasury the use of Camp Low

was tendered, should I desire it.

What, however, was of greatest service was the purchase by Governor Flower, upon my recomendation, of Fire Island, including the Surf Hotel. Also worthy of notice was the action of Mayor Hugh J. Grant and President of the Police Commissioners, J. J. Martin, who at my request adequately policed the quarantine fleet by tugs manned by courageous volunteers of the regular police force. Shortly after, from my knowledge of the situation abroad and here, I was able to announce the arrival of the last cholera ship and on the fifteenth of October to publish the defeat of the cholera and the raising of quarantine.

In the year 1903 events notable in the history of quarantine occurred. Eminent professional and business men, following out an induction warranted by the previous history of epidemics, had concluded that an epidemic in 1803 was certain, and these views were spread abroad and accentuated in the public prints. In harmony with this view of the case, a bill had been introduced in Congress to grant additional powers to the United States Marine Hospital Service. This bill was opposed by me until I had the assurance that I should not be interfered with, but

should receive the cooperation of all concerned. This assurance I soon received. Any opposition on the part of the transatlantic transportation companies was not to be expected, even if cooperation was prompted by no higher motive than the saving of the expense of detention of passengers, the diminution of commerce, and the establishment of a bad reputation. Germany especially could be depended on for aid, since she had had the good fortune that one of her sons discovered the Spirillum choleræ, and now sought to maintain her reputation, by instituting and furthering scientific hygienic measures.

However, in order to insure absolute safety, special arrangements were made with one of the great transatlantic lines most deeply interested. And in conformity thereto I sent Dr. George W. Nash to Hamburg, to inspect the lodgings of emigrants, to supervise ship sanitation, and to certify to the general hygienic conditions. Very soon after his arrival Dr. Rosenau, of the United States Marine Hospital Service, also was ordered to Hamburg, where he remained until relieved by Dr. J. H. White. Dr. Nash and Dr. White worked harmoniously with our consul, with the result that no ship from Hamburg brought cholera to New York during this year, although there was a limited epidemic in Hamburg, which had been occasioned by the distribution of contaminated water from the Elbe. It was from this epidemic that a stoker of one of the express passenger steamers en route to America came down with cholera and was promptly put ashore at Cuxhaven. Dr. Nash, by request of the steamship company, boarded the ship at Southampton and accompanied her to this port. Professor Dunbar, of the Hygienic Institute of Hamburg, within a few hours after the patient was landed, demonstrated the presence of the cholera spirillum. Upon the ship's arrival at New York, though a demand was made upon me to order her detention at Ouarantine, since Dr. Nash reported all on board well and she had been out more than five days without illness and all precautions had been observed, I cleared the vessel without detention. Notwithstanding alarm was caused in certain circles, no cholera occurred, and the following valuable lesson was impressed upon the minds of all, that if proper cooperation could be had abroad, at sea, and in port: 1, It knowledge of the hygienic condition of snip and passengers before sailing, at sea, and upon her arrival is assured; and, 2, if on the arrival of the ship all persons aboard are well, there is absolutely no danger of introducing cholera into the country and therefore no reason for detention.

It may be said here that German ports have the most satisfactory arrangements for emigrants on shore, specially illustrated by the Auswandererhallen (Emigrant Hotel), of the Hamburg-American Line, at Veddel, Hamburg.

^{*}Dr. Reynold W. Wilcox. Ibid., pp. 61 and 62.

*See statement to this effect. American lournal of the Medical
conserve, pp. 65 and 69, article by Herman M. Bags, M. D.
Reynold W. Wilcox. Epidemic Cholean in the Port of New
York American Learnal of the Wilcox. Settled Sciences, October, 1893.

This hotel consists of two score neat buildings, covering an area of about fourteen acres. It has its Ifwish as well as its Christian guartee, and provision is made for supplying hashes tood to the Jews. The different races, as well as the two sexes and those of different ages, are housed separately. A water system; a sewerage system in which the sewage is disinfected in the most approved manner before it is disposed of; an electric light system; a large bath house provided with showers and tube placed in individual com-

Italy was specially to be feared in this year. I therefore sent Dr. Judson Daland to Naples, where cholera was epidemic, and he had surveillance of the ports of Italy and the Levant. On August 3d the steamship Karmania arrived, having had deaths on the voyage (she was a freight steamer on which steerage accommodation had been improvised). The causes of death, which were said to be various, included gastroenteritis. One case developed in port and the microscopical examination revealed the Spirillum choleræ. Immediately I requested the editors of all the papers to meet me at the mayor's office and laid before them all the facts, at the same time making the request in the interest of commerce and business generally, that no alarming or unnecessarv statements be published, while I would keep them informed by bulletin issued twice a day of the exact situation. As to the passengers, all were landed at Hoffman Island, divided into groups, and placed under the supervision of medical and sanitary police, while careful bathing and thorough disinfection were insisted on. Among these persons twentyone cases of cholera developed, all of which were transferred to Swinburne Island for treatment, which consisted of the method employed in 1892, and only four deaths resulted. The effect of the regulations established by the Department of the Port of New York for governing emigrants abroad, in 1892, were continued with the most evident good results. For instance, three vessels sailed from Naples when cholera was epidemic here, but only after the passengers had been detained in accordance with these regulations. All these arrived at New York without illness aboard, passed Quarantine without detention, and among the passengers no cholera developed

Contrary to this state, during the same season four vessels with the same class of passengers with similar place of origin, in many cases with the identical water and food supply, the same as on the vessels for the United States, left for South America. All, however, were turned back by the authorities and returned to Naples, the vessels having had respectively fifty, ninety, eighty-four, and two hundred and thirty deaths from cholera during the voyage. This is introduced simply to illustrate the ease

with which cholera may be controlled when proper regulations are instituted and carried out, such as were established by me in 1892, and failure to do so cannot but be fatal. The duty of handling these diseases at home rests

upon the local health officers of the port, but the rapid advance and discoveries in these diseases is fast reducing the health officer's work to mere inspection. Of the ports of the United States and its dependencies, all except New York, Boston, Philadelphia, and Baltimore are under the management of the Public Health and Marine Hospital Service. The port of New York is greater by far than all the others combined, having probably eighty per cent. of immigration, ninety per cent. of cabin travel, seventyeight per cent. of imports and tonnage, of the ves-

sels sailing under foreign flags.

The Public Health and Marine Service has, in addition to the functions for which it was established, the added duties of the examination of imigrants and of all the diseases, including mental deficiencies, in respect to which the emigration laws apply. This makes it necessary for the service to employ many private and public hospitals, which involve large expense, and this expense has to be borne by the steamship companies. This is a charge upon them which I believe is unwarranted, but if it has any ground for existence it is unjust for two reasons, viz.: 1. The charges are grossly excessive; and, 2, while the steamship companies are the chief parties interested, they are denied the right to be a party to the making of the terms, and what makes the situation the more paradoxical is that at the time when the United States Marine Hospital Service was pleading for a national quarantine, the statement was made that it would be less expensive than any local quarantine. Of all these charges the steamship companies should be relieved, especially because the head tax has recently been doubled.

Let me say here that I do not wish anything in this statement to be interpreted as an adverse criticism upon the United States Public Health and Marine Hospital Service, which has rendered and is offering to-day a service which is the nearest approach to a national health supervision and bureau of national and international sanitary information and investigation that has yet existed, but is sadly hampered by the limitation of its personnel, particularly so in the port of New York.

In conclusion, let me say that in thus considering my theme, the relation between cholera (epidemic) and commerce, I feel that the information gained at the port of New York, as I have just had the privilege of relating to you, has been of the utmost importance, not only to the welfare of the country at large, but especially to this port of entry, the volume of whose commerce annually is in the aggregate such that in 1908 \$191,000,000 was paid in duties, or sixty-six per cent., compared with the rest of the re-

maining ports of \$90,000,000.

No period in the history of our land is more representative in this respect than that which I have analyzed this evening and during which I had the privilege of being health officer. While I have always felt it to have been a great privilege to serve my people, especially you in New York, during such an interesting era, I feel no less proud that

This is introduced simply to illustrate the ease partments lined with white tile; and a disinfecting plant to which has been added a device for protecting bagagae sgainst damage from live steam, are features of this complete community shelter. Is one off the inhabitants ill, there is a hospital with a resident physician and a nurse attached to care for him. If the disease is a contagious one, there are special hospitals provided with modern equipment for his isolation and care. There are post and telegraph offices; a money exchange; a canteen; two hotels for the accommodation of those who wish to live in a more secluded maner and are willing to pay a mark, or twenty-four cents, a day extra for it; and two clothing stores; one for the sale of men's which any one can interpret regardless of literacy or language. On the sale of men's which any one can interpret regardless of literacy or language. The protestants. The Catholic church is equipped with all the paraphernalia required by the ritual, and masses are said four times a week. In the lewish section is a synagogue.

Each "citizen" pays about forty cents a day for the benefits of the Auswandererhallen. The institution is valuable to the steamship company also. It serves to keep the emigrant in a contented frame of mind and good physical condition.

No sooner does the emigrant reach the Auswandererhallen than the fitting of the paraphernalia required by the ritual of the fitting of the second of th

it happened during my régime that we were enabled to materially increase the quarantine facilities. When I assumed office I received from my predecessor the wholly inadequate islands in the lower bay and one faulty tug for boarding steamers. However, I was able to pass on to my successor in office Fire Island and the Surf Hotel, which alone could meet any emergency, also an appropriation secured from the legislature to extend Hoffman Island from two and one half acres to ten acres, i. e., to increase it to four times its size at that time; also three tugs, not only substantial, but in every other respect adequate for all future service.

But last and not least important was the promulgation and carrying into effect by the Secretary of State the regulation of inspection and detention at ports of embarkment, which are now in force, and which, if properly observed, will arrest the march

of any epidemic in the future.

100 Broad Street.

RESTORATION OF SIGHT AFTER NEARLY A MONTH'S BLINDNESS FROM GLAUCOMA.*

By J. L. MINOR, M. D., Memphis, Tenn.

It is not so unusual to restore vision to an eye, blind from an attack of acute glaucoma, if the patient is seen early and promptly operated upon; but in the case I am about to relate blindness had existed for nearly a month, and it really belonged to the hopeless class. I never saw a case myself, nor do I know of one in literature, where, after so long a period of blindness from this disease, vision was regained by any means.

CASE.—Miss H., aged fifty-seven, referred to me by Dr. J. F. Cochran, of Memphis, was seen September 16, 1903, when the following history was elicited: While traveling in California, on July 5, 1903, she had a sudden and severe attack of pain in the left eye, lasting thirty-six hours. A few days later a like attack was experienced in the right eye, when it was noticed that vision was blurred in both eyes. Such attacks repeated themselves every few days, being usually worse in the left eye, and with each attack there came more impairment of vision, and by August 22d patient was totally blind, with more or less continuous pain in each eye. She was taken to an infirmary in Los Angeles, Cal., several weeks after the first attack, where she remained for a week or more, under treatment, when she was dismissed, with eserin drops to be used as demanded, which gave slight relief from pain, but had no effect on sight. Her case was pronounced hopeless as to vision, and operative measures were refused by the attending oculist.

operative measures were retused by the attending oculist.'
After this, the condition remained practically unchanged until I saw the patient. She told me that she could see, at times, large objects, but I found not even perception of light. The tension of the eye was +1. Scleral vessels, enlarged; anterior chamber, shallow; pupil, dilated; media so hazy that nothing more than a red reflex could be obtained. This description applied to both eyes. Pain was more or less constant and severe, and the natient was worn more or less constant and severe, and the patient was worn to a shred by her continued suffering and depression over her condition. The case presented a pitiable outlook, for vi we had been lost for a month, and the condition

pronounced hopeless by an oculist of repute. Moreover, this opinion had been rendered six weeks prior to my seeing her, when a clear media admitted a view of the fundus; and as, at that time, I was told that the oculist refused to operate, I naturally inferred there was some contraindication-probably a hæmorrhagic condition; hence I was in a serious dilemma as to what course to pursue. I was not serious dilemma as to what course to pursue. I was not long in deciding that iridectomy would hardly make her worse, and that it offered the only hope of relief from pain and the only avenue to possible vision. With the assistance of Dr. J. F. Cochran and Dr. Alfred Moore, and under cocaine anæsthesia, I performed an iridectomy, upwards, in each eye. The operations were smoothly persuance of the properties of the properties of the properties. formed and the customary dressings applied. The healing process was normal. No further pain was experienced. The eyes were dressed daily on account of a slight conjunctivitis, but not until the fourth day after the operation was there any effort made to test the vision, when it was was there any enort made to test the vision, which it was found that she could see and recognize faces some feet away. By the end of a week she could see the hands of a clock across the room and tell the time by my watch.

The first careful tests were made at my office, on October 13, 1903, with the following results: O. D. V. = 20/40 - 1.25 d. c. ax. 120 V. = 20/30. O. S. V. = 20/100 - 2.00 d. c. ax. 90 V. = 20/40. Visual field in each eye was concentrically contracted to a circle 10 degrees from the circle 10 degrees from th 90 V. = 20/40. Visual field in each eye was concentrically contracted to a circle 10 degrees from the point of fixation. The wounds had closed, with good keyhole colobomata. Media was clear. T. n. The ophthalmoscope showed in right eye, with the exception of the optic disc, a normal fundus. which could be seen with — 1 d. s. The disc showed general cupping of — 7.00 d., with kneed vessels, and was of almost atrophic whiteness. The left eye showed the same condition expect the supplies of the disc was less (fundus condition, except the cupping of the disc was less (fundus, - 2.00 ; disc, — 5.00)

I have seen Miss H. from time to time, at intervals of every few months, up to January 20, 1908. The right eye has retained its vision and visual field, and has remained unchanged up to the present time, except for the development of a small cystoid cicatrix at the upper and outer ment of a small cystola creatrix at the upper and outer portion of the seat of the corneoscleral incision, which was first noticed April 12, 1904, and has so remained since. The left eye, on March 16, 1905, could not be brought beyond 20/100. On January 18, 1906, vision was reduced to 20/200, and on October 30, 1906, it was, movements of hand at two feet, which it still retains at present. There have been no changes in tension or intraocular appearances.

RANDOLPH BUILDING.

THE VALUE OF THE X RAYS IN CHEST DIAGNOSIS.*

By A. L. GRAY, M. D., Richmond, Va.,

Rontgenologist to The Virginia and St. Luke's Hospitals: Professor of Physiology, University College of Medicine.

In the determination of conditions existing within the thorax, every procedure that will add to our very imperfect methods should be accorded a most hearty welcome.

While there are specialists who can, after years of the most assiduous application and wide experience in chest examination, recognize very slight abnormalities with a wonderful degree of accuracy, such men are rare, and often their findings are not treated with the respect due them, for the reason that the doctor referring the case is not sufficiently trained in physical diagnosis, and cannot himself detect the points elicited by the chest specialist.

There are conditions that, by reason of their size and location, even the most skilled physical diagnostician cannot possibly ascertain, while their recognition at the onset may mean the arrest of the disease before it is beyond control.

^{**}How at Linda now to a Only mologed Society, at New London, Conn., July, 1908.

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^{*}Read at a meeting of the Medical Society of Virginia, Richmond, Va., October 20 to 24, 1908.

It is my desire to call to your attention the applications of the x rays as an aid in discovering with accuracy points difficult or impossible of demonstration otherwise.

Thoracic Ancurysms.

Although an early diagnosis rarely, if ever, enables a complete cure to be effected, the patient's habits of living may be so modified, and treatment so instituted in consequence thereof, that life may be prolonged or even the progress of the aneurysm arrested.

A thoracic aneurysm found by the x rays in a woman in the sixth month of pregnancy caused me to advise the induction of miscarriage. The operation was successfully performed, and the patient spared a probable sudden death during labor.

Aneurysms have been often found when their existence had never been suspected, and the radiograph was made for an entirely different reason.

Pain in the region of the large bloodvessels, persistent aphonia or huskiness of the voice, bronchorrheea, areas of deep seated tenderness near the sternal or in the interscapular regions, when the cause is not clear, should always be suggestive of thoracic aneurysm.

Pleuritic Effusions.

Though these are usually easy of diagnosis, they are sometimes very difficult.

It has been my fortune to test the utility of the x rays in a considerable number of cases of hydrothorax and pyothorax, and in a single case of hæmothorax, the result of a bullet wound.

In hydrothorax, which is the most common of these, the level of the fluid, if it is not walled off, shows distinctly in the radiograph, usually as a fairly sharply defined line, above which are the shadows of more or less normal lung tissue, while below is the denser and more diffused shadow due to the greater difficulty encountered by the x rays in penetrating the fluid. The ribs appear much less distinct.

In localized pleuritic effusion, where adhesions have formed a distinct wall which encloses the fluid, the thickened pleura, as well as the fluid, is generally easily recognized. If the effusion is great, there appears in the lung tissue itself, especially in that portion near the fluid, an increased density due to compression.

What has been said of hydrothorax may likewise be said of empyema, except that the pus shadow is more dense than in hydrothorax, and often the shadows of the ribs are entirely obliterated.

Pneumothorax is readily determined by the absence at the site of the air, of even the normal

shadow of the lung.

Abscesses within the lungs are distinguishable by appearing as very dense, generally single areas shading off into the surrounding lung tissue.

A difficulty which occasionally presents itself is the risk that the patient may undergo in being placed in the upright position necessary in diagnosticating general effusions. Rarely, indeed, will a case be seen in which the danger would be too great to permit the sitting posture in bed for the short time necessary to take the picture. Such a condition,

however, does sometimes occur and renders the diagnosis of free fluid quite difficult.

Tumors and Enlarged Glands.

Tumors of the lung tissue generally produce dense, often sharply defined areas of more or less irregular outline, not infrequently multilocular. They may be distinguished from abscesses, which they most resemble, by the absence of fever, and by the result of the blood examination.

Mediastinal and bronchial glands appear as rounded or oval shadows with clear cut borders. They may, if large, be mistaken for small aneurysms, and must be distinguished, if there is doubt, by fluoroscopic examination, when the expansile pulsations may be seen.

Tuberculosis.

It is in tuberculosis that the x rays have begun to open a new field. X ray operators everywhere have in the last few years turned their special attention to the early recognition of this disease by radiographs. Many cases have been reported in which the chest specialist has failed to determine any physical signs—long before the appearance of the bacilli in the sputa—in which an unqualified diagnosis of pulmonary tuberculosis was made and the subsequent course of the disease verified the findings.

With the present, almost instantaneous, work that the recent machines are capable of doing, an exposure may be made while the breath is held, and the smallest area of consolidation will appear distinctly on the picture. Isolated tubercles, minute calcified glands, and thickening at the roots of the lungs can be clearly demonstrated. In advanced tuberculosis in which there is considerable consolidation, the areas may be studied and progress or recession of the disease determined by comparing radiographs made from time to time. Cavities in the lungs, their size, location, and whether or not they are being walled off are all points that may be shown by a good radiograph.

In chest examinations for tuberculosis it is not sufficient, as is often done, to make a single picture with the plate behind the thorax, for images of small, solid areas in the anterior portion of the lungs, may be indistinct by reason of their distance from the plate.

In order to obtain a clear impression, it is of equal importance that a picture be made with the plate in front.

Restricted motion to the diaphragm on the affecter side (Williams's sign) which was formerly considered of great value in the diagnosis of early tuberculosis, has been proved to be unreliable. This is easily demonstrable by an x ray examination, but is not always present in the earliest manifestations.

The heart may also be outlined, and its size and position ascertained. This is best done by the employment of the orthodiagraph, which also enables the diaphragm and other structures to be most accurately charted.

The location of foreign bodies in the œsophagus and respiratory passages is of such frequent occurrence as to require no comment in this necessarily brief paper.

312 EAST FRANKLIN STREET.

CONGENITAL NEPHRITIS.* BY HOWARD T. KARSNER, M. D., Philadelphia,

Demonstrator of Pathology in the University of Pennsylvania; Assistant Pathologist to the Philadelphia General Hospital. From the Laboratory of Pathology of the University of Pennsylvania and the Philadelphia General Hospital.

The following case is of interest not only because of its rarity, but because of its suggestions in the realm of ætiology of nephritis; for, although we all stand ready to credit nephritis to some very definite infection or to the presence in the body of some fairly well defined irritant whose nature we have at least approximately determined, yet the occurrence of this disease in the new born child of an apparently healthy woman leads one to think that the delicacy of this finely constructed gland may be susceptible to the irritation of many substances of which we have little conception at the present time. the kidneys of young children may become diseased because of the influence of an irritant which seems to be of little or no ætiological moment in adults is well borne out by reference to the literature. Acute indigestion and inflammatory conditions of the gut tract, cold plunges, exposure to high grades of heat, calcareous and hæmosiderin deposits in the tubules, interstitial hæmorrhage, and even icterus, in addition to the causes found in later life, such as passive congestion, ingested irritants and infections, have all been shown to play a part in the ætiology of nephritis of very early life (13). The delicacy of the infantile kidney is well shown when so simple a condition as vaccinia may produce nephritis (15). That uric acid infarcts may produce nephritis in very early life is well known (10), and that such uric acid infarcts may occur before birth has also been demonstrated (12). Parental syphilis as an ætiological factor in infantile nephritis, and even in the nephritis of premature and still born infants, plays an important part. Here, of course, the nephritis is most usually of the interstitial type, but in some cases in which purely parenchymatous changes have occurred the cause seems to have been undoubtedly syphilis. Spiess (19) noted this in 1877, Stroebe (20) again in 1891, and Cassell (7) in 1904 made a complete study of twelve cases of undoubted hereditary syphilis, the patients dying between the fifth week and the fifth month, and of six cases the patients being syphilitic and prematurely born. Ten of the twelve patients in the first group "showed more or less severe parenchymatous alterations which exhibited an extremely wide variation in extension and intensity." Of the six cases in the second group four patients showed severe alterations in the epithelium of the uriniferous tubules. In these cases, however, the glomeruli "showed no serious diseased process.

The case which I report is one of acute parenchymatous disease. I was unable to locate the father, but the mother's history and physical examination were negative, and the baby itself showed nothing to indicate syphilis. Baby and mother were on the service of Dr. Reynolds in the Philadelphia General Hospital. The autopsy on the baby was made during my own service in that institution. Dr. Reynolds and his resident. Dr. Jackson, have furnished me with the physical examination and the account of the birth, life, and death of the infant. History, physical examination, and autopsy report follow

E. B., white, thirty-four years; born in Ireland; occupation, housework; unmarried; was admitted to the hospital in the early stages of labor.

Family history: Father and mother dead of unknown cause. Three brothers and two sisters are all living and

well. One sister has five children, all living and well, and has suffered no miscarriages.

Previous personal history: Patient had mumps and measles in childhood and had suffered from no serious or long standing illness in adult life. Menstrual flow began at sixteen years and continued normally until last July. She denied having been pregnant before and denied ever having had intercourse before the one which caused the present pregnancy. She absolutely denied venereal history of any sort, although she said she had had slight attacks of leucorrhœa within the past three years. She denied using alcohol or other drugs, but is a moderate coffee and tea drinker.

History of present condition: Menstrual flow was last seen in July. Passed through the usual course of preg-nancy with its signs, except that the breasts did not enlarge appreciably.

Physical examination (by the resident physician, Dr. Jackson): Well developed, adult, white Irish woman of Jackson): Well developed, adult, white Irish woman of moderate stature. Eyes: gray, pupils react to light and accommodation. Tongue: coated and dry. Pulse: tension fair, slow, and of good volume. Head: negative. Chest: Negative. Abdomen: pendulous; foctal mass on the right, feet on left side. Vaginal examination: netlike processes about the orifice. Cervix soft, flattened and admitted two fingers. Extremities; negative. Ward Notes:

April 22, 1908. Patient went into labor at 3 a. m., mem-April 22, 1908. Fatient went into labor at 3 a. m., membranes ruptured at 8;30 a. m., child was born at 9;45 a. m., placenta at 10:15 a. m. Morphine sulphate, gr. ½; hyoscine hydrobromate, gr. 1/150; given hypodermically about one half hour before active labor began. Child born in left occipitoanterior position. Labor normal. Child apparently well developed, showing no abnormalities except cyanosis, which continued even after respiration had been established. A few minutes after cutting the cord the child became more deeply cyanotic, respiration failed, and the child died about forty-five minutes after birth.

April 30, 1908. Uninterrupted recovery on the part of the

mother. (Note: At about the time of death of the child the resident physician attempted to inject a small dose of strychnine directly into the heart, an attempt which was without observable effect.)

observable effect.)

The mother's urine showed a light yellow color, was clear, specific gravity, 1.015, contained a few epithelial cells and detritus, but no albumin, sugar, or casts.

Autopsy on the body of the child was made by me forty-eight hours atter death: M. B., aged forty-five minutes. Body of a white female infant, well developed and well nourished. Fairly good growth of light hair, with the general cutaneous redness of the new born. No apparent cyanosis. Primary incision showed nothing abnormal. On lifting the chest flap a needle puncture was found in the fourth interspace in the midclavicular line, which could be followed down into the lower lobe of the left lung without followed down into the lower lobe of the left lung without showing any evidence of having struck the heart or peri-

Abdomen: Abdominal cavity showed a smooth, glisten-Abdomen: Abdominal cavity showed a smooth, glistening peritioneum; normal situation of organs. Belly cavity contained approximately 100 cc. of clear, brownish yellow, limpid fluid. Spleen: Approximately of normal sizes smooth, glistening capsule; cut with ease and showed a moderately firm, slightly bleeding cut surface, without distinct markings. Left adrenal: Large, showed post mortem congestion. Left kidney: Weight, 20 grammes; measured 5x2.2x2.7 cm.; was markedly lobulated; capsule stripped with ease, showing a smooth, dark brown surface with intense congestion of stellate veins. The organ cut with ease and showed a slightly bulging cut surface; cortex measured 2.5 mm., entire kidney substance, 1 cm.; cortex showed 2.5 mm, entire kidney substance, I cm.; cortex showed marked congestion, little or no striping; pyramids considerably injected. Pelvis normal. Right adrenal was like tis fellow. Right kidney: Weight, 18 grammes; measured 1882/28/25 m., capsule stripped with case, showed a

grayish brown surface with injection of the veins not quite so marked as in the opposite organ; cortex measured 2 mm., cut with ease, showed a light, yellowish brown, moderately bleeding cut surface; entire kidney substance to mm; cortex was light in color and showed no stripings. Pyramids moderately injected. Bladder: Showed a normal mucosa; contained no urine whatever. Urachus, closed. Stomach contained a small amount of frothy mucus. Mucosa apparently normal. Intestines were considerably injected, particularly in the neighborhood of the Peyer's patches; they contained a large amount of dirty yellow, feecal ma-terial. Appendix was normal. Large intestine was distended with meconium. Liver was approximately normal in size; showed a smooth, glistening capsule; cut with ease, showed a slightly bulging, grayish brown, bleeding cut surface in which the markings were completely obscured. Gali bladder was distended with very viscid green bile; mucosa normal. Pancreas showed no gross anatomical change. Aorta was normal. Thymus was present, apparently normal.

Thorax: Right pleura was smooth and glistening throughout. Right lung was moderately crepitant; cut surface was light red, exuded on pressure a small amount of frothy white fluid. Left pleura was like the right. Left lung was like its fellow, except for a slightly bleeding puncture extending from the outer surface well into the lower lobe. Pericardium was smooth and glistening. Cavity contained 30 c.c. of clear, straw colored fluid. Heart was of normal size; musculature apparently normal; thickness of wall of the heart ventricles giving a ratio of about 1.2 (right to left); foramen oyale patulous; valve leaflets norin appearance and orifices of normal calibre.

Anatomical diagnosis: Congestion of lungs; puncture wound of left lung; patulous foramen ovale; acute diffuse nephritis; cloudy swelling of liver.

Sections were prepared and examined histologically from the following tissues: 1, Thymus; 2, lungs; 3, liver; 4, pancreas; 5, spleen; 6, kidneys; 7, stomach; 8, small intestines.

I. Thymus: The surrounding fibrous tissue was a thin I. Inymus: The surrounding norous tissue was a tinu layer of loosely arranged fibres, poor in cells, in several places including a few fat globules. The gland proper showed the usual lymphoid cells in the cortex with a looser arrangement in the medulla. The corpuscles of Hassall were numerous and discrete. No epithelium encountered. Vessels showed normally thick walls, but were densely engorged with erythrocytes. Cortex did not show demonstra-ble erythroblasts, but showed numerous mononuclear

eosinophiles.

2, Lungs: Pleura present, showing as a thin, loosely at ranged layer of fibrous tissue with somewhat congested ranged layer of history issue with somewhat congestive capillaries. Vesicles were moderately but universally distended, in some parts much more so than in others. No evidence of true exudate was found, although in some places the vesicles were filled with a finely granular substance which took the eosin faintly, probably serum. alveolar walls were moderately thick in the poorly expanded portion of the lung and about as thin as those of the adult lung in the well expanded portions. The thicker alveolar walls were made up largely of engorged capillaries, a few connective tissue cells with oval vesicular nuclei. A few lymphoid cells, plasma cells, and leucocytes were discernible as "were di were discernible, as were also the endothelial cells of the considerable as were also the endotheral cells of the engillaries. No evidence of excess of fibrous tissue elements could be made out. The bronchi showed slight clouding of the epithelium with loss of outline. Nuclei were sharply outlined, vesicular, and well stained. No desquamation or exudation. The larger vessels showed a rich supply of elastica, but were of normal thickness and wells are constituted were constituted to the control of make up. Congestion was general and well marked throughout the section.

 Liver: Capsule present and of normal thickness and ensity. Perilobular portion of capsule was also normal in thickness, but shows a few lymphocytes embedded in In the the thorn was a tew lymphocytes embedded in the fiborus meshes. Portal vein was normal; hepatic artery engorged with erythrocytes; bile ducts showed normal epithelium. The parenchymal cells were poorly outlined, granular, and poorly stained. Many of them contained minute vacuoles, probably of fatty origin. The nuclei were distinctly outlined, but faintly stained and vesicular. In many instances the nuclei were completely obscured. Definite karvertheyis and previous not demonstrable. The innite karyorrhexis and pycnosis not demonstrable. tervening capillaries showed numerous erythrocytes.

central veins were generally filled with blood.

4. Pancreas: The cells of the parenchyma were of about

normal size, but showed no distinctness of outline, and were somewhat granular. The nuclei were well stained, prominent, sharply outlined, and with normal chromatin arrangement. The islands of Langerhans were present in apparently normal numbers, their cells showed the same protoplasmic degeneration as noted in the parenchyma, the nuclei being normal. The interlobular interstitial tissue was present in comparatively increased amount, but showed young connective-tissue cells of the oval and fusiform vesicular type, in a relatively loose network of fibrillæ. The vessels were of normal size, but considerably injected throughout the section.

5, Spleen: Capsule and trabeculæ of normal thickness and density. The pulp showed the usual arrangement of fine stroma and small round cells, markedly admixed, how ever, with enormous numbers of erythrocytes which in many cases seemed to encroach upon the follicles somewhat. The follicles otherwise were normal in size, prominent, and showed normal elements. The vessels were universally distended with blood, but normal as to the walls.

6, Kidneys: Capsule almost completely stripped, leaving only a few fibrillæ on the surface. The glomeruli were of a size that could be considered normal for the time of life of the patient. The number of nuclei was markedly inof the patient. The number of nucies was markedly increased, they being for the most part oval, circular, or occasionally spindle shaped, well stained, sharply outlined, distinctly vesicular, and with a netlike arrangement of the chromatin. The capillaries showed the presence of a moderate number of crythrocytes. The capsular epithelium was normal. The capsular space was almost completely obliterated by the enlarged tufts and showed no appreciable exudate. The epithelium of the convoluted tubules was swollen, had completely lost outline, and was distinctly granular. In many tubules the lumen was obliterated by the swelling, in others the lumen was filled with granular detritus. A few vacuoles very suggestive of fat could be made out in the basilar portions of the cells. The nuclei showed various degenerative changes, in some cases staining diffusely blue with the hæmatoxylin, in others showing a peripheral accumulation of chromatin. Many nuclei were obscured either partially or completely, but no fragmentation obscured either partially of completely, but no fragmentation was demonstrable. The tubules of the rays and the medulary tubules showed much less protoplasmic degeneration and normal nuclei. The blood vessels showed normal walls, but veins, arteries, and capillaries were markedly congested. The interstitial tissue showed no proliferation. In a position corresponding to the pelvic side of the sections was found a large mass of fairly dense fibrous tissue covered

with transitional epithelium, the infantile pelvis.

7, Stomach: The nucosa was of normal thickness. The glandular epithelium showed typical goblet cells formation, grandiar epinenum snowed typical goolet cens formation, and there was finely granular material in the lumina suggesting the presence of mucus. The deeper epithelial cells showed granularity, swelling, loss of outline, and small vacuoles, probably of mucus. The nuclei were normal. The interstitial tissue of the mucosa was normal, save for the infiltration of a very few round cells. Muscularis and peritoneal coats were normal. The vessels of all the coats were moderately engorged with erythrocytes.

were moderately engorged with erythrocytes.

8. Small intestine: The epithelium had disappeared, probably because of post mortem digestion. The villi showed some degeneration of the outermost cells, and there was a slight round cell infiltration. The submucosa showed at one point a large collection of lymphoid cells, which was not sharply outlined, but spread out into the surrounding tissue. The remainder of the submucosa was normal. Muscularis and peritoneal coat were normal. The vessels generally were moderately congested. Histological diagnosis: Normal thymus: congestion of lungs; advanced cloudy swelling of liver; interlobular fibrosis in pancreas; congestion of spleen; acute parenchymatous nephritis; mucoid degeneration of gastric mucosa; slight lymphoid infiltration of small intestine.

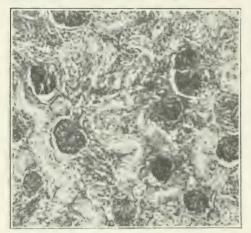
This history showed nothing in the mother that I can definitely blame for the repliritis in the child. The fact that she was unmarried suggested the fact that some drug might have been used to induce their tion, and my attention was particularly directed to potassium chlorate as an inducer both of abortion (12) and of nephritis, but the history showed nothing of this.

the cause of the nephritis except the slight lymphoid infiltration into the submucosa of the small intestine, which in view of the work of Jacobi (16) and of Holt (14), and associated as it was in this case with a parenchymatous degeneration of the liver, would suggest the possibility of some feetal intestinal disturbance as having induced the kidney condition. With the absence of any splenitis and the absence of anything in the gut to indicate definite intestinal disease I cannot consider these conditions as having more than a suggestive significance.

The general congestion of all the viscera, I believe to have been purely postnatal, since there was no vascular thickening, no evidence of diapedesis or hamorrhage, and no interstitial proliferation (except in the pancreas); hence it was probably of insufficient duration to have produced any inflamma-

tory kidney condition.

Syphilis is naturally the disease to which we look as the most likely cause of the condition, but there were no cutaneous bullæ, no enlargements of the



Section of kidney, howing by the deep tone of the glomular tufts the marked proliferation of the nuclei.

bone ends (no sections made), no interstitial overgrowth in the lung, a liver that showed a normal capsule of Glisson, and no changes in the kidney that could be considered indicative of nephritis. The pancreas showed moderate interlobular overgrowth of connective tissue, a condition which can occur quite independently of syphilis and which has been so reported (18).

Parenchymatous disease of the kidney, as I have stated before, occurs in syphilis of the new born and of the fœtus, but such conditions are by no means diagnostic of syphilis. Cassell (7) says, "In reference to the diagnostic interpretation of these (parenchymatous) alterations in connection with syphilis I had an agreement with Hecker when I say that we must not see anything pathognomic or diagnostic of syphilis in these degenerative conditions."

Hence I am led to believe the disease in this particular infant was in all probability of the type that Holt (13) speaks of as primary nephritis.

For justification of such a classification of this case I refer to Ballantyne, who in rather general consideration of The Pathology of Antenatal Life (4) says: "During feetal life the organism is subject, just as it is in later life, to the maladies which are caused by microbes and their toxines, and by poisons, mineral and vegetable; it may also be affected by diseases which, in the absence of fuller knowledge, we must call idiopathic. . . . So far therefore as our knowledge of the pathology of postnatal and antenatal life has carried us, it would seem that the same morbid causes are in action in all the periods into which the existence of the organism has been divided."

In how far the kidney condition was responsible for the death of the baby is hard to judge, when we remember the fact that this infant was apparently a "blue baby" and had a wide open foramen ovale. Of course, during feetal life the activity of the kidney is not great, and we must consider the possibility of the changed conditions and activities of life having produced such an increased demand on the function of these diseased kidneys as to have completely disabled them. The infant's bladder was empty, but that may have been brought about by the usual urination which occurs soon after birth. It is hardly probable that a toxemia sufficient to cause death would occur in forty-five minutes, yet we must conclude from the pathological condition of the organs that the kidney insufficiency must have had a considerable duration, and that some more or less marked grade of toxæmia must have existed prior to birth. In that case the additional toxæmia attendant on the increased functions of postnatal life may have been just sufficient increment to cause death. In such cases "it may be said that the cause of death is birth."

A careful search of the literature shows a surprising meagreness of information in reference to nephritis in infants as young as this. Many standard textbooks of pædiatrics and pathology fail to mention that such a condition may occur. Many of the more modern authorities mention the primary nephritis of the new born, but seem to think of it as a condition limited to postnatal life and do not suggest the possibility of its being present at the time of birth and of its having originated in antenatal life. On the other hand, Descroizilles (9) mentioned it as early as 1883 as occurring "in the first days of ex-Cotton (8), Baginsky (3), and Henoch (11), all draw attention to it, the last named in particularly forceful fashion. He says "one sometimes meets with cases of most tender age in which nephritis has developed and has resulted disastrously without any cause for the condition having been discovered. I do not mean here the cloudy swelling of the cortex which often appears as a result of the disturbance of epithelial nutrition, but clinically recognizable pictures of inflammation." Ashby and Wright (2) make even a more positive assertion, saying that "in rare cases infants are born with acute nephritis," and refer to the case which is the third and most definite of the three cases that I have collected, i. e., cases which have truly been born with

the aid of the mechanical stage. The result was negative. While this negative finding is by no means conclusive, yet it may be ac-

CASE I .- This is Cahen's (5) case, reported in 1853, a case which was probably, but not certainly, nephritis; I quote from Cahen's paper: "Observation IV. A male infant of two days, not having reached term, weighing 1,000 grammes, and of forty-two centimetres total length, died suddenly as a result of convulsions on April 29, 1851. At the autopsy the principal organs were found to be normal. The kidneys were congested, one weighing seventeen grammes, and the other fourteen grammes. A few drops of urine found in the bladder gave a white precipitate of albumin."

Case II.—Kast (17) described and pictured the gross appearance of a kidney in which histological section would probably have shown the changes of a nephritis subsequent to congestion. His report follows:

to congestion. His report follows: "Cyanotic kidney in a new born. Body of an extremely cyanotic child which died during birth. All the organs showed intense venous congestion; multiple ecchymoses up to the size of lentils on the serous membranes. absolutely unexpanded. Kidneys showed marked foetal lobulation. On the cut section the black blue colored pyramids were sharply demarcated from the homogeneous light red cortex; the deep blue color of the pyramids was seen throughout their entire extent, and by close inspection was seen to be brought about by a recognizable tense injection of the venous channels up to the borderline.

Tagetion of the venous chainers up to the boldering.

Case III.—Ashby's (1) case as quoted in Carpenter's article (6) is probably the most definite and certainly the most interesting case that I have found. Carpenter says:

"Ashby records the case of an infant, aged four weeks, which became dropsical the day following its birth and remained anasarcous to the day following its birth and fle-mained anasarcous to the day of its death, and finally died in convulsions. The kidneys were pale and showed but little distinction between cortex and medulla. Microscopically, there were extensive epithelial and fibroid changes, and the small arteries appeared thickened. There was no evidence of syphilis, although he thought that suggestion worthy of consideration, but to him it appeared to be the exact type of scarlatinal nephritis.

I firmly believe that such cases as this of Ashby's and the one that I report, although at the present time to be classified only as primary nephritis, have most certainly been caused by some nephritic irritant the nature of which we do not know, but just as surely as there will come a day when there are no primary anæmias, so will a day come when the term primary nephritis will have become historic rather

than practical.

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1320 SOUTH BROAD STREET.

REPORT OF A GLIOMA OF THE BRAIN INVOLV-ING THE PIA MATER.

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The general conception of glioma held by practitioners and even by some pathologists is that the tumor takes its origin in the central nervous system from glia cells, which infiltrate, but generally do not destroy the surrounding nerve tissue; the tumor remains confined to that tissue and does not While these characteristics are form metastases. true for the majority of such growths, they no longer hold for all of them. Mallory has reported a glioma arising outside the central nervous system which formed metastases. Some of the ependymal gliomata cause multiple growths in the ventricular

It is held that the gliomata do not grow beyond the brain and cord, or, to be more precise, that they do not infiltrate the meninges. It is for the purpose of clearing away this misconception that this

paper is written.

Schlesinger in his comprehensive monograph on Spinal Cord Tumors, which was published in 1898, makes no mention of gliomata growing diffusely

from the brain into the meninges.

Bruns in his book Die Geschwülste des Nervensystems, published in 1908, page 10, says: "The infiltration of the pia by a glioma scarcely ever happens; it halts at the pia. Rare exceptions may occur; indeed Pels-Lensden has observed the invasion of the pia by a central glioma of the cord."

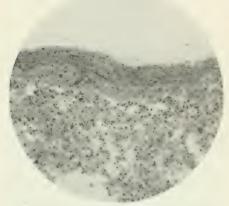
As recently as in one of the July numbers of the New York Medical Journal of this year, Mayer and Proescher, in their report of a glioma of the brain, make the statement that gliomata never extend to the meninges of the central nervous system.

It is astonishing that such statements occur so frequently in view of the large number of cases reported in which the infiltration under discussion has

taken place.

Saxer has observed the glia tissue growing into the pia in a case of syringomyelia, thus showing the possibility of glia growth, although possibly not of a true glioma. Alzheimer has called attention to the fact that glia fibres frequently invade the pia in cases of general paresis. The oldest known case of tumor infiltration is that of Klebs, who describes an invasion of the pia, adjacent to a glioma of the cerebral cortex, by glia cells. The first important observation is that of Pels-Lensden, to whom Bruns referred, who reported a glioma of the cord which infiltrated the meninges of both cord and brain.

Frank and Benda have observed a case in which a central tumor located in the dorsal region grew out into the pia and surrounded the entire cord. The third case is that of O. Fischer, in which the tumor occupied the entire lumbar and sacral regions and parts of the dorsal and cervical segments and of the brain. The tumor had infiltrated the pia in a diffuse manner as high as the cervical cord. In Roux and Paviot's case there was a tumor in the cervical region which grew out into the pia and infiltrated the meninges of the entire cord. Grund reports a case of glioma in the lower and middle



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cord which extensively infiltrated the pia mater. Spiller in a note to the Deutsche Zeitschrift für Nervenheilkunde, xxxii, calls attention to Grund's omission of a case reported by himself and Hend-Their case was one of a growth in the rickson. cord with diffuse invasion of the meninges. In the original article the authors stated: "There is unquestionably a close resemblance between these cells and those of the ependyma, and the temptation, therefore, is to call the tumor an ependymoma; but it seems remarkable that an ependymoma being a form of glioma should give extensive metastases to the pia of the spinal cord.'

The most recent case is that reported by Martens and Seiffer. It was an ependymal glioma arising in the fourth ventricle with multiple growths in the lateral ventricles. The growths in the fourth ventricle had infiltrated the pia over the cerebellum.

All these are the authentic cases of gliomata reported as growing into the meninges. Gliosarcoma or diffuse sarcoma arising in the cord and brain has long been known to infiltrate the meninges. Grund found that thirty-nine such growths with meningeal infiltrations have been reported, and described either as round cell, or spindle cell sarcoma, or as alveolar sarcoma, angeiosarcoma or endothelioma. Undoubtedly many of these if studied carefully to-day with newer technical methods and stricter regard for the conception of sarcoma would prove to be gliomata. It has been objected that some of these growths have originated in the meninges and grown into the cord, but Schlangenhaufer has shown that in most cases this assumption

The history of my case is as follows:

K. A., age seventeen years; was admitted to the service of Dr. B. Sachs, to whom 1 am indebted for the clinical history. March 22, 1907.

Previous history.-She had measles and scarlet fever

when a child. She had never had convulsions or periods of unconsciousness. There was no history of syphilis. She had not menstruated. She said her eyes had always

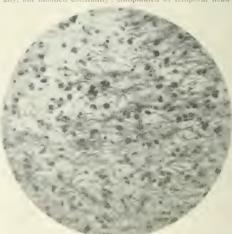
been somewhat prominent.

The present illness began eighteen months ago with attacks of headache, nausea, and vomiting. The headache lasted for several hours. These attacks occurred every two or three days for about two months. She went to work but could not do as well as before the onset. She was clumsy and slow in her movements and not mentally as bright as she had been. Three months ago she began to have headches again. They were bilateral and located in the temporal region. They occurred generally in the forenoon. There was no vertigo. She stated her sight, hearing, and speech were normal. She had not been in

The physical examination. March 23d, was as follows: Patient was well nourished. There was marked exophthalmos, especially of the left eye. The eyes appeared to be set far apart. Von Gracfe's symptom was well defined. There was divergence on accommodation. The pupils were equal and reacted to light and during accommodation. There were no palsies. The patellar reflexes were increased. Ankle clonus was present. The head appeared to be early and or accommodation of the property of the participation of the property of the participation of the property of t to be enlarged and measured fifty-five centimetres at the occipitofrontal level. Bilateral Macewen sign was present. On this same day and eight days later, each time at 7 a. m., the patient had a paroxysmal attack, which was

characterized by general rigidity, dilatation of the pupils, and bradycardia. These attacks were of short duration and followed by deep sleep. At 9 a. m. she began groaning and became restless. She answered questions. The face was pale; pupils contracted. There was vomiting; cyanosis of the extremities with a small and rapid pulse.

On April 4th, it was noted that the patient talked rationally, but mouned constantly; complained of temporal head-



the college three materials

ache. The deep reflexes were increased; no Babinski sign. There was weakness of the external rectus of the right eye. Dr. May's examination of the fundi showed a postneuritic atrophy of both.

April 10th.—The strabismus was more marked, and the

exophthalmos was more prominent.

May 3d.—Vision was lost. The mental condition was bordering upon dementia. The eyes were more prominent. Slight left facial palsy. Patient was unable to stand. The

Significant factor passy, rattern was unable to stand. The radiograph showed no tumor.

On May 24th a decompressive trepanation on the left side of skull was done without revealing the tumor.

May 20th.—The same was attempted on the right side; the patient's condition remained practically unchanged; remained in deep stupor, death occurring on June 18th.

The patient first presented general symptoms of

cerebral disturbance, such as headache, vomiting, and nausea, occurring in attacks for a period of two months. These attacks were probably due to the closure of the foramen Magendii with subsequent internal hydrocephalus. There followed an intermission of fifteen months, during which period slight mental apathy was the only symptom. It is possible that during this time either there was no increase of the hydrocephalus and there was an acquired tolerance of the brain to the pressure, or the foramen had become patent in some inexplainable fashion, or the circulation had been reestablished through some other channel than the foramen and the two lateral ventricular clefts of Key and Retzius. After this period, the symptoms of pressure recurred, and with them the symptoms of disturbance of the blood circulation at the base as shown by the exophthalmos. It was impossible from these symptoms to make a certain distinctive diagnosis between internal hydrocephalus and hydrocephalus caused by a neoplasm or by cysticercus of the fourth ventricle. Assuming there was a neoplasm, its definite localization was impossible. though the presence of exophthalmos and the later involvement of the nerves governing the eye muscles made it seem most probable that a tumor mass must lie in the region of the chiasm. This was afterward actually found to be the case. The two operations were performed more with the hope of giving relief to the patient from the symptoms due to intracranial tension than of localizing the growth.

Autopsy findings.—The convolutions were flattened. The lateral ventricles were very much dilated and contained a considerable quantity of cloudy fluid. On the base of the brain was a covering of newly formed tissue. The growth had the appearance of a thick, inflammatory rine growin had the appearance of a thick, inhammatory exudate located in the pia. It was very gelatinous, translucent in places, and of a grayish color. In some parts it was necrotic and in others showed evidences of old and recent hæmorrhages. It was nowhere adherent to the dura, but was so intimately incorporated with the pia that it was impossible to distinguish one from the other. The growth stripped off from the brain cortex as does the The growth stripped off from the brain cortex as does the pia normally, and except in the region of the chiasm it had not infiltrated the brain substance. The lower limit of this tissue extended to the medulla at the level of the crossing of the pyramids, and anteriorly it extended to just in front of the optic chiasm. It covered the pons, the crura cerebri, the tuber cinereum, the infundibulum, and completely obliterated the optic chiasm. The neoplasm had grown into the pontofacial angle, and surrounded both fifth nerves, especially the left. The right third and optic nerves and both fourth nerves could not be solated. Occupying the position of the infundibulum there was a mass of ordematous tissue about the size of a wal-nut, which reached up into the brain. It extended up-ward into the third ventricle, which it almost entirely occluded. Thence it had grown back through the iter into the fourth ventricle which was likewise almost completely filled. From the third ventricle, the tumor had passed through the foramina of Monro into both lateral ventricles, but more especially the right, where the gelatinous mass was attached by a pedicle to the inner wall just in front of the pillars of the fornix. This appeared to be the total ventral the same than the same places where the same and the same places. to be the only place where there was a connection be-tween the growth and brain substance proper. The growth had encircled the blood vessels at the base, especially those of the circle of Willis.

Microscopical examination.—The appearance was that of Microscopical examination—The appearance was that of the typical and common form of glioma (Figs. 1 and 2). The stroma of the growth consisted of the numerous processes of characteristic glia cells. There were also many glia fibres which seemed to have no connection with the cells. Giant multinucleated gila cells were likewise present. In parts of the growth the blood vessels were very numerous and they usually had rather thin walls adja-cent to which was the glia in characteristic fashion. In places there were hæmorrhages, both recent and old, as well as necrotic areas.

Sections of the growth were submitted to Professor Mallory, of Harvard Medical School, and he confirmed

the diagnosis.

The origin of the growth was from the wall of the The origin of the growth was from the wall of the ventricle, most probably from the wall of the right, to which it was attached. The gliomata which arise in the ventricles are those which take their origin from the subependymal glia. These tumors, however, are much more cellular than the one herein described and have very little or almost no stroma. The cells likewise generally have the character of the ependymal cells. This growth had none of these characteristics, but resembled much more those gliamata which arose from the glia of the brain. those gliomata which arose from the glia of the brain substance beyond the ependyma. While the manner in which the tumor invaded the pia was very unusual, the growth resembled other gliomata in the manner in which the surrounded the nerves and blood vessels without impairment of their function. Although all the cranial nerves, except those arising from the medulla, were surrounded by neoplasm, only the second and right sixth were much affected. And the atrophy of the second was probably due primarily to a neuritis caused by the internal hydrocephalus and not to trauma from the growth.

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108 WEST EIGHTY-SEVENTH STREET.

LATE REPORT OF A CASE OF FRACTURE AND DISLOCATION OF THE SECOND CERVICAL VERTEBRA.

By CHARLES D. Fox, M. D., Philadelphia, Pa

In view of the great rarity with which we encounter patients who have survived fractures of the cervical vertebræ, such cases are interesting and should be reported.

Fractures and dislocations of the first, second, and third cervical vertebræ almost invariably cause immediate death, and are most frequently the result of hanging, diving in shallow water and striking the head on a sandy bottom, or from some heavy object striking the head with great force in the

direction of extension.

The following history was taken September 13. 1907, in the nervous department of the Dispensary of the Hahnemann Hospital, of Philadelphia:

CASE—The patient, J. G., et chirty two, an intelligental breed Indian, was well until July, 1904, when 940 pounds of beef fell fourteen feet, striking him on the vertex and forcing his head backwards. He fell to the ground unconscious, remaining so for from five to eight hours, and

¹I am indebted to Dr. F. S. Mandlebaum, pathologist, for the photomicrographs.

was taken to the University Hospital. No operation was performed, but extension was applied in bed for two months. Following this he was kept in a plaster cast for three months, at first in bed, but later in a chair. Then an apparatus was made for him, with a jury mast, and he was treated as an ambulatory patient until eight months ago, when he discarded the apparatus except for short periods when the pains were severe.

The patient stated that for the first two weeks, following

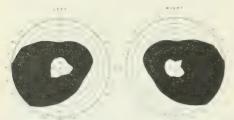


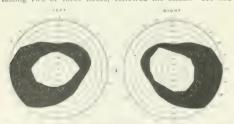
Fig. 1. The degree of concentric contraction of the visual fields present at the time (1) the first examination, September 13, 1907.

the accident, he was totally paralyzed in all of his limbs. During the first six months he complained of involuntary urination. There was not any dribbling of urine, but he did not know when his bladder was full. At present he knows when it is distended, but cannot hold his urine longer than a minute after the first impulse to urinate. For the last year he had not known when his rectum was full, and there occurred involuntary defacation. For about two and a half years his sexual desire was lost, and at present is very feeble. There had not been any erections since the accident.

He asserted that the pain, temperature, and tactile senses were lost for an indefinitely long period, indefinite because of the very gradual and incomplete return of these senses. His usual weight was 220 pounds, but three months after the accident it was 90 pounds, and at present 140 pounds. During the first three months that he was out of bed he had static ataxia, severe enough to cause him to

fall, even when his eyes were open.

About eighteen months ago, or twenty months after the injury, attacks as follows first appeared: The aura consisted of a sense of coldness of the scalp, vertigo, scintillating scotoma, tinnitus as if a bell was ringing, and a rancid taste. Any one or all of these symptoms might be present, lasting about three minutes or less and being followed by loss of consciousness and falling to the ground. While unconscious, usually about ten minutes, there were tonic and clonic convulsions, involuntary urination and defæcation, and biting of the tongue. A stuporous condition, lasting two or three hours, followed the attack. He had



It is the result of errortin elsemation, November 25, 1907.

taken strontium bromide for six months, at present in five grain doses, in solution, three times daily. In all he had had six convulsions with a progressive decrease in the length of the intervals

During the last six or eight months he had had attacks of petit mal, spontaneously, and whenever he closed his eyes, or was in the dark. Following an aura similar to that of the major convulsions he felt as if falling, or as if some great distance separated him from his body. In fact he

asserted to have frequently seen his body from a great distance. In addition he experienced numbress and tingling of the skin, dyspnca, palpitation, and a sensation as if his nose was bleeding. He never fell unless unable to hold on to some support. The attacks occurred about two or three times a day and lasted about two minutes. There apparently had never been any tendency towards the development of ambulatory automatism. During several attacks that I witnessed his eyes were closed, the face was expressionless, and there occurred slight twitching of both hands with moderate general rigidity.

At present he complains of a progressive failure of vision, dating from the injury, and of numbness of the fingers, toes, back, left side of face, and of the whole of his chin. He has also noticed irritability and impairment of memory not progressive and more marked for recent events. At night he rests in a steamer chair, as the pains in his neck are more severe when his body is in a horizon-tal position. Sleep occurs after a long interval, is very light, and he states that it lasts only about three or four hours. It is always accompanied by dreams, but the character of these is not of any interest to us. At times he has auditory hallucinations of singing, always by the same young, unknown female voice. This singing, possibly a psychic equivalent of a convulsion, has no fixed relation in time to his epileptic attacks nor is it a symptom of them.

His former occupation had been that of a cowboy and a special officer. Judging from the present size of his muscles and frame, together with his appearance in an old photograph he showed me, he must have formerly been a very well proportioned and powerful man. Knowing thoroughly the gravity of his condition and that at any time during a convulsion he may so injure his neck as to cause

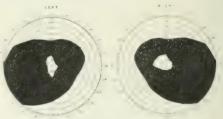


Fig. 3.—The retrogressive changes in the visual fields following the attack of meningitis.

instant death, he became quite indifferent and appeared to care little whether he lived or died. He denied the use of alcolol, but admitted to having had a venereal sore four and a half years ago which, judging from his description, was probably a chancroid.

The first physical examination, made September 13, 1907 showed his pupils to be equal, moderately large and reacting well to light, accommodation, convergence, and consensually. The external ocular muscles functionated well and without any nystagmus. Figure 1 shows the marked concentric contraction of his visual fields present at this time. Vision was 0. S. 3/70 and 0. D. 3/50. The eye department reported his discs to be practically normal. The muscles of the face and tongue functionated normally. All the muscles of the upper extremities were symmetrically very weak, but those of the lower extremities were revery weak, but those of the lower extremities were remarkably strong, and he asserted to be able to walk ten miles a day without any great fatigue. Tenderness was elicited in all the nerve trunks. This, he said, had been present for five or six months, or since "his feelings had returned." The tactile pain and temperature senses were very much impaired over the entire body and in some areas absent; but these defects were not apparent in the lower extremities. Astereognosis was present, that is, he could recognize the qualities of an object felt but could not name it or give its uses. The speech faculties were normal. With his eyes open there was slight static ataxia, but when closed the ataxia was severe enough to cause him to fall. were not any signs of incoordination of the upper extremities. The biceps and triceps jerks were present and the patellar, Achilles, cremasteric, epigastric, and gluteal reflexes were normal. The plantar reflex was almost absent and Babinski's and Gordon's signs were negative. Atrophy,

contractures, and spasticity were not demonstrable. Palpation of the skull disclosed a depression over the apex of the occiput measuring about one inch in width by two inches in length. The first and best radiograph made showed a fracture and slight angular displacement in the body of the second cervical vertebra, but unfortunately the patient had an epileptic attack while carrying the plate, resulting in its destruction. Closure of his eyes for tests in the above physical examination caused two attacks of petit mal.

From September 13, 1907, until January 7, 1908, he was treated at regular intervals in the nervous department, but his epileptic attacks steadily increased in frequency, in spite of the administration of strontium bromide in doses of from eighty to a hundred drops of the saturated solution three times daily. The onset of symptoms of severe gastric irritation prevented any further increase in the dose. During this period of fifteen weeks he had seven major convulsions and many of the minor attacks. For the possible relief of his pains he was advised to resume wearing his apparatus, which he had discontinued for some time, though little benefit resulted at first. Figure 2, taken November 25, 1907, shows the marked improvement that occurred in

the visual fields.

On January 7, 1908, he complained of having seen and to be dead, including his father, two brothers, and a friend. He asserted to have been subject to these hallucinations for the last seven years. These occurred only as he dozed and were accompanied by a sensation as if falling and followed by confusion and depression. He fully realized that these occurrences were purely subjective and thought that they were due to his having thought about his father and others before going to sleep. The voices never gave commands or revelations. It might be of interest to note the fact that the patient was a believer in the occult. The characteristics of these atacks would lead one to suppose that they were psychic equivalents of epileptic convulsions. February 18, 1908, immediately following a convulsion, he had a visual hallucination. Thinking he saw a man leave his room, he searched the house before coming to the conclusion that it was hallucinatory.

February 27, 1908, he stated that the preceding day severe pains had appeared in the back of his neck, both legs, and back, rapidly becoming more intense and preventing any sleep at all that night. In the morning, when he stood up, his legs were so weak that they gave way under him and he fell to the floor. He also complained of a very bitter taste, gastric pains, and a very severe paroxysmal headache, as if the top of his head was coming off. There was not any incontinence, but he said that he couldn't hold his mine after the first impulse to urinate. The cervical pains must have been very severe for, stoic as he was, the tears were running down his face while being examined and he admitted having cried all night. At this time the pupils were equal, normal in size, but reacted sluggishly to light, accommodation, convergence, and consensually. There was marked limitation of ocular movements in all directions and incomplete bilateral ptosis. The visual acuity was O. D. 3/70 and O. S. 3/70, showing a marked reduction in comparison with the acuity of O. U. 12/10 obtained three days before. His tongue was heavily coated, dark brown, and the breath was very offensive. Kernig's sign was elicited bilaterally, and there was a great reduction of strength of his whole body associated with a slight amount of spasticity. The pulse was 120, and the temperature by mouth 98.6° F. Because of his serious condition he was admitted to Hahnemann Hospital February 27, 1908, but left the next day in order to collect it in person that day. When warned of the daingers of leaving the hospital he laughed, saying that it made no difference to him whether he lived or died, and that if he lived to get to the home of some of his friends he would remain there even if without proper attention rather than go to any hospital.

Following this I attended him at his friend's home, where he was confined to bed. His condition became more serious and at one time he had a series of major epileptic convulsions, forming a status epilepticus, which lasted for several hours, in spite of the fact that he was taking 270 drops a day of the saturated solution of potassium bromide. For several days he was unable to move his limbs or even protrude his tongue. The highest temperature noted was 102.5° F. At one visit I decided that he couldn't possibly

live over twelve hours, but fortunately did not express this opinion.

About the middle of March he began to improve and on April I, 1908, to my great surprise he staggered into the dispensary, with the aid of a cane, saying that he felt almost as well as before his attack of illness. He stated that there was a total amnesia from the time of his entrance into the hospital, February 27th, until about the middle of March, and that a sudden twist of his neck accompanied by a sharp crack audible to others, a subjective sense as if shot in the vertex and severe epistaxis, ushered of amnesia, when visiting him, I noticed a great change in his personality. Normally he impressed one as being a Caucasian, but at this time one seemed to be talking to an Indian. He continually expressed a desire to be out in the open air, saying that if he were out on the plains sleeping on the ground he would surely get well. Also that the Indian medicine man possessed remarkable powers, hypnotic and otherwise, unknown to the whites, and these powers had been known and used for centuries. Confine-



Fig. 4 — Photograph taken September 20, 1007, showing the amount of flexion of the patient's neck that was present even during attempts at extension.

in the change to his normal personality. During this period ment in the house would kill him, but he wouldn't allow himself to die, and many times he swore he would surprise me by walking into the dispensary well some day. The character of his conversation was most impressive, and at times beautiful. It is unfortunate that circumstances at that time did not permit me to visit him more frequently and to examine with more detail his condition, especially this apparent dissociation of his personality.

and to examine with more decay, this apparent dissociation of his personality. Physical examination, made during his first visit after the illness, showed his pupils to be dilated and almost inactive, associated with paralysis of both superior recti, the right external rectus, and the left internal rectus. Figure 3 shows the retrogressive changes in his fields. The glossal muscles functionated well, but there was a weakness of the left facial muscles. His strength was very much reduced in general. The patellar reflexes were very much exaggerated, but no spasticity could be elicited. Kernig's sign was present, and also a slight static ataxia.

He was last seen by me in August, after he had returned from a trip to the west, and he was then in about the same condition as he was prior to his recent illness.

Note.—While walking along the street on August 30, 1908, the patient was suddenly seized with severe abdominal pain. He fell unconscious, vomiting began, rapidly becoming feed in character, and he was taken to the terman Hospital, where an instance is a right strangulated inguinal hernia was performed. The recovery properties of the properties of the statement, and the wound healed in four weeks without any complications having occurred. Feed

operative results that we cooltained are of interest because, on account of possible trophic changes, they could hardly be expected in

After consideration of the history of this case, the signs and symptoms present, and the results of radiographic examination, the diagnosis was made of an old fracture dislocation of the second cervical vertebra, complicated by an ancient depressed fracture of the skull. In addition, the patient suffered from major epileptic attacks, without any focal symptoms, and petit mal. His recent attack would seem to be an acute cerebrospinal meningitis of unknown type and origin.

The medicinal treatment he received, while under my care, had been almost exclusively with bromides for the possible relief of his convulsions. Hypnotic suggestion, carried to the stage of somnambulism, was employed for over four weeks, with no apparent effect on his convulsions, but being of great benefit in the relief of insomnia, pains, and other symptoms. This was most noticeable during the attack of meningitis, for on several occasions when the headache and pains were almost unendurable I kept him in the hypnotic state for a half hour, and on one occasion as long as two hours. Immediately upon the production of hypnosis his pains would entirely disappear and would not return for perhaps twelve hours.

2126 PINE STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

A SERNES OF FRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXX—How do you treat asphyxia neonatorum?

(Closed November 16, 1908.)

LXXXI.—How do you treat chronic eczema? (Answers due not later than December 15, 1908.)

LXXXII.—How do you treat chronic lead poisoning?

(Answers due not later than January 15, 1909.)

Whover unswers one of these auestions in the manuer

"Answers due not later than January 15, 1909.)

Whoever answers one of these questions in the manner
most satisfactory to the editors and their advisers will
seceive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely
on the value of the substance of the answer. It is requested
(but not REQUINED) that the answers be short; if practicable, no one answer to contain more than six hundred

All persons will be entitled to compete for the prize, whether subscribers or not. This prize voil not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXXIX has been awarded to Dr. Samuel Salinger, of Chicago, whose article appeared on page 1037.

TREATMENT OF SICK HEADACHE.

Dr. Franklin C. Clark, of Providence, R. I., re-

No special law can be laid down for the treatment of migraine, the hemicrania of medical writers, the name which covers the vast majority of cases of sick headache. As the female sex constitutes the great bulk of its sufferers, sex would seem to be a predisposing cause. But, as the disease is often very erratic in its attacks, sex cannot always be a determinate factor; nor is age.

Now, excluding cases in which the cause may be traced to some error of diet, intemperance in the use of food or drink, the loss of sleep, mental or physical strain, and to many other exciting causes the avoidance of which at once points out the proper remedy, we come to a type of the affection in which the peripheral nerves seem to play the main if not the sole cause in its induction. As nausea and vomiting are prominent symptoms of a certain order of brain disease, it is reasonable to infer, that the like symptoms, manifested in many attacks of migraine, attest a like sympathetic connection between the stomach and some functional disturbance of the brain

Remedial treatment of migraine thus becomes a treatment of its supposed cause, as well as for the relief of the distressing symptoms to which the disease owes its name. But, unfortunately, there are no known preventive means but what are tentative, provisional, and unconvincing. We are thus confined to the treatment of symptoms over which some remedies seem to exert more power than others. But, first, there are some adjunctive measures that even of themselves are capable of affording considerable relief.

At the outset, then, of an attack of migraine, or on the appearance of certain premonitory symptoms so well known to those suffering from sick headache, absolute rest and quiet should be en-joined, and, if possible (especially in the case of women), the sufferer should be kept in bed during the continuance of the attack, in a cool, airy room, somewhat darkened and remote from noise and society, and little or no nourishment be allowed except an occasional draught of water or a cup of a strong infusion of tea or of coffee, without milk or sugar. Tea and coffee sometimes alone give immediate relief. Applications to the head of cold, such as compresses kept constantly wet with cold water, and especially of ice in some manner, are valuable remedies. Sea baths have been advised with great benefit. But rest and quiet are, above all, to be insisted on, without which all the drugs in the pharmacopœia will be of no avail. Nature now, if at any time, requires absolute repose and the avoidance of all exciting causes.

Mental or psychic healing, as it is termed, has its advocates; and headache has not escaped its proportionate share of this form of treatment. beyond a few isolated examples of alleged cures of this affection by what has been denominated "suggestion," mental healing has never produced any permanent effect in times long past, and never will. It is a mere waste of time and money and but trifling with the weaknesses of human nature.

Much has been written on the subject of headache and many drugs prescribed for its relief. though no remedy has as yet been offered that possesses infallible curative properties. But, if specifics are unattainable, yet there are a few medicines which in a certain proportion of cases seem to exercise a remarkable control over this complaint, among which may be cited tea and coffee, already mentioned, though to a limited degree. But of all the drugs thus far known, Paullinia cupana, or

guarana, enjoys this peculiar property most conspicuously. At one time it was regarded as the true specific. In my hands it has been very satisfactory; in one instance particularly, that of a woman who had been a sufferer from headache for over thirty years. Under its use she became wholly exempt from attacks of it for the rest of her life, some fifteen or twenty years. Guarana should be administered in powders of twelve and a half grains each, every half or full hour until relief is obtained.

Of course it is the caffeine, contained in all three of these remedies, and of which guarana has the largest percentage, to which the benefit is to be ascribed. The dose of caffeine must, of necessity, be far smaller, but its method of administration

remains the same.

But the best form in which to administer this alkaloid, I find, is in conjunction with acetanilide and monobromated camphor, the camphor being added to counteract the depressing effects of the acetanilide, which is cumulative in its action; for its effects, like those of all the coal tar products, require constant watching. I use the pure alkaloid caffeine instead of any of its salts.

Potassium, sodium bromides, and other remedies are of pronounced value. Where there is considerable blood pressure or nervous excitement, the bromides have marked tranquillizing power in reducing the temperature and lowering the pulse.

Other adjuvants may be cited, such as the application of a stick of menthol to the aching spot or painting it with the tincture of aconite or with an appropriate solution of its alkaloid; and, lastly, the employment of anodynes and hypnotics, whose name is legion. An anæsthetic, if not too far continued, might be of service in attacks of exceptional severity. All drugs, however, of an uncertain or dangerous character should be scrupulously eschewed, and only those administered that experience has proved to be the safest and the most reliable.

Correspondence.

LETTER FROM LONDON

Burthden Honore.—Beauty Specialists."—Plague in Liverpool—Heredity and Disease—The Death of Sir Henry Pitman.

London, November 17, 1908.

In the honors list issued on the King's birthday medical men again figure prominently. First and foremost is the name of Sir Anderson Critchett, who becomes a baronet. He is a distinguished ophthalmic surgeon, and has been surgeon oculist to the King since 1901. His father, the late George Critchett, was also famous in this branch of surgery. Mr. Jonathan Hutchinson, Sen., F. R. S., F. R. C. S., has been made a knight. Though he is well known all over the world as one of the foremost syphilologists, his work in connection with the graphic representation of the lesions of disease and the scientific organization of museums deserves the widest acknowledgment by the medical profession. He was president of the Royal College of Surgeons of England in 1880-1800, and was recently congratulated by the Council of that body on the attainment of his eightieth birthday. Dr. Thomas Oliver

and Dr. Stewart Woodhouse have also received the honor of knighthood. Dr. Oliver is physician to the Royal Victoria Infirmary, Newcastle on Tyne, and has done a good deal of work in connection with trade diseases, in the investigation of which his experience has been very great and has frequently been turned to account by the government. Dr. Stewart Woodhouse, of Dublin, was formerly an inspector under the Local Government Board in Ireland and a member of the General Prisons Board of that country. Dr. Donald MacAlister has been made a Knight Commander of the Bath. Dr. MacAlister had a very brilliant career at Cambridge, being senior wrangler in 1877. He acted for a short time as mathematical master at Harrow, and was subsequently graduated M. D. at Cambridge. He was appointed physician to Addenbrooke's Hospital and delivered the Goulstonian lectures before the Royal College of Physicians in 1887. He became the representative of the University of Cambridge on the General Medical Council in 1889, and in 1904 was elected president in succession to Sir William Turner, K. C. B. In that capacity he has fulfilled his duties in a manner which has already insured his unanimous reelection to that office. He has also lately been elected principal and vice-chancellor of the Glasgow University.

In other branches of science appear the names of Dr. Alfred Russel Wallace, the veteran biologist, who has been appointed to the Order of Merit, and Professor J. J. Thompson, who has received the honor of knighthood, is Cavendish professor of physics in the University of Cambridge and presi-

dent elect of the British Association.

An interesting case came before the courts last week which has shed a flood of light on the mysterious arts of the "beauty doctor." A lady who had three small pits on the side of the nose as a result of smallpox was attracted by an advertisement setting forth the ability of the specialist to remove, among other things, smallpox pits from the face by "purely harmless and painless methods." She underwent the treatment. for which she paid a fee of thirty guineas. The result was disclosed in the court. According to the medical evidence, the treatment had resulted in a deep ulcer on the side of the nose, apparently caused by some caustic irritant. The jury awarded the plaintiff £500 damages, and found that Madame Auguste, otherwise known as Catherine Lavin, the beauty specialist, was guilty of fraud. One witness described how she was shown a woman patient at Madame Lavin's whose face on one side was wrinkled and on the other full and firm. The smooth side was kept continuously under plaster, except when it was necessary to show intending clients the results of the treatment, and then it was uncovered. Though this penalty will be a blow to the "beauty" trade, which is well established on Bond Street, it is doubtful whether it will stop their business or the folly of the public, who are ready to swallow all the nonsense of the printed pamphlets. The essence of this case is that unqualified persons are permitted to advertise themselves as ready to undertake treatment involving acts of a surgical nature and attended by the risks inherent to the unskilful performance of the simplest operations. It is an extraordinary fact that, in spite of the danger to society and the injury to orthodox

practitioners, the medical corporations, the General Medical Council, and the state do not appear to trouble themselves about the bogus "specialists" who abound in every large town in the United Kingdom. For all that, the verdict in this case will remain on permanent record as a warning to unlawful trespassers on the domain of a serious, highly technical, and responsible profession.

Two fatal cases of plague have recently occurred in Liverpool. One was that of a man who worked on a coaling barge, who fell ill suddenly and expired while being conveyed to the hospital. An inquest was held, and, as the cause of death was doubtful, the health authorities had a bacteriological examination carried out, with the result that the presence of the plague bacillus was established. A few days afterward two persons who had worked together with the deceased were found to be ailing and were at once removed to the hospital, where the disease was found to be plague. One of the patients died, but the other recovered. So far, there have been no fresh cases, and there is good reason to believe that no further spread of the disease need be apprehended. The most unsatisfactory feature of the case, however, is that no explanation of the origin of the first case is forthcoming, as the barge on which the patient was living does not go beyond the limits of the Mersey, and has only been engaged in coaling coasting vessels.

A special meeting of the fellows of the Royal Society of Medicine was held last week for the purpose of discussing the influence of heredity in disease, especially with regard to cancer, tuberculosis, and diseases of the nervous system. The debate was opened by Sir William Church, M. D., president of the society, who pointed out the importance of certain particular aspects of the subject under discussion-for example, the possibilities of a race prone to certain diseases eventually acquiring a natural protection against them. It was suggested that perhaps the gradual diminution of consumption in this country partly depended on the fact that after many centuries we were at last becoming protected by Nature against the ravages of this disease and that this protective quality in us was being handed down from one generation to the next and gaining power in the course of descent. In the study of heredity we require carefully recorded tables of family histories. And this is a field in which the general practitioner is in most cases more able to elicit facts than the specialist, who is not so familiar with the families of his patients.

Sir Henry Pitman, M. D., F. R. C. P., whose one hundredth birthday was recently celebrated, is dead. The deceased had a long connection with St. George's Hospital. He became assistant physician to the hospital in 1846, and eleven years later was elected full physician. He retired from the active staff in 1866, and since that time his name has figured on the list of consulting physicians. Altogether, therefore, he was connected with St. George's for sixty-two years as a member of the staff. He was one of the hospital physicians who helped to fight the terrible cholera outbreak of 1854. As registrar of the Royal College of Physicians Sir Henry filled another important public office for thirty-one years.

Therapentical Notes.

Untoward Effects Following the Use of Maraglianio's Serum.-Dr. H. R. N. Landis reports (The Therapeutic Gazette, November, 1908) untoward effects following the injection of Maraglianio's serum in seven cases out of forty-one treated with it. In six of these cases the patient's face became suffused within a minute or two after the administration of the remedy. An expression of great anxiety appeared, accompanied with difficulty in breathing; a feeling of oppression, particularly over the præcordium; the finger tips became blue, and the skin covered with a clammy sweat. The pulse rose to 140 and to 160 and became almost imperceptible after this. Nausea, vomiting, and intense pain in the lumbar region developed in three cases, while nausea and vomiting were provoked in one case. In all there was a feeling of impending death. In one case the patient screamed as the needle was withdrawn, became very pale, and muscular tremors developed. In all cases these effects passed off rapidly. In seven cases there was severe inflammation at the point of injection.

Application for Freckles.—Robin is credited in Journal de médecine de Paris for October 3, 1908, with the following formula for an application for

the removal of freckles:

taking care not to go beyond the spot.

The amount of corrosive sublimate should be varied according to the tenderness of the skin.

Tincture of Thuja for the Removal of Warts.—The local use of the tincture of thuja (arbor vitæ) for the removal of warts has been revived by several French physicians, as is shown by a communication in Clinique infantile for November 1, 1908. The tincture is made from the dried leaves of the plant by macerating one part of the leaves in five parts of eighty per cent. alcohol. Several drops of the tincture are injected beneath the skin and under the wart until the swelling of the part indicates the penetration of the liquid. Before injecting the tincture the part should be bathed for some time in hot water in order to soften the growth. After this treatment the wart turns a brownish black color, withers, and drops off.

The Treatment of Leucorrhea of Pregnancy.
—Siredey (La clinique, November 13, 1908) thus formulates the treatment of leucorrhea of pregnancy: Administer a vaginal injection of sterilized or lukewarm boiled water, to be followed by an injection of two pints of lukewarm boiled water containing two tablespoonfuls of dry yeast. Afterward introduce a tampon, attached by a thread, which has been soaked in a mixture of equal parts of yeast and boiled water; renew once a day. In place of the foregoing there may be injected twice daily boiled water containing a tablespoonful of Labarraque's solution, or a decoction of marshmallow root and poppy heads to each quart of which have been added, sodium bicarbonate, five drachms, and sodium chloride, two drachms.

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NEW YORK, SATURDAY, DECEMBER 5, 1908.

THE IMMIGRATION SERVICE AT THE PORT OF NEW YORK.

We would invite particular attention to an article which we publish in this issue, entitled Cholera and Commerce, by Dr. William T. Jenkins. Dr. Jenkins's efficiency in protecting the city of New York from cholera some years ago, when he was the health officer of the port, will readily be recalled by many of our readers, and his experience with cholera entitles him to speak with a great measure of authority on that disease. But it is not altogether in the matter of cholera that Dr. Jenkins's article is of importance; incidentally he deals with certain other features of the quarantine service of the port and of the sanitary inspection of immigrants. The immense preponderance of New York over the other ports of the country, as vividly portrayed by Dr. Jenkins, renders the service at this port of exceedingly great importance.

Dr. Jenkins joins the great body of the medical profession in expressing appreciation of the excellence of the inspection of immigrants, but he recognizes, as we all do, that the resources at the command of the United States Public Health and Marine Hospital Service need to be considerably augmented to enable that service to do the best that its organization would enable it to do if those resources were adequately increased, especially in the matter of a sufficient number of officers. The simplest and most obvious solution of questions connected with the improvement of our national sanitary service certainly lies in strengthening the hands of the Public Health and Marine Hospital Service to the utmost, especially by enlarging the force of medical officers of the service and by increasing the

Detention hospitals are necessarily an important element in the administration of such an immigrant service as is required at the port of New York, so that persons arriving in a state calling for skilled observation and treatment have frequently to be sent to hospitals that are not under the immediate control of the national or State authorities. In those institutions, as Dr. Jenkins tells us, such persons are maintained at the expense of the steamship companies, and it therefore seems no more than fair, he thinks, that the companies' medical representatives should be accorded ample opportunities of observing the detained persons, if not some voice in their disposal pending their acceptance as immigrants or their deportation. It would also be only fair, we think, for the hospitals to make but a minimum charge to the companies.

PROFESSOR FALTA'S HARVEY LECTURE.

True to its principles, to give the medical practitioner not only the results of advanced scientific investigation, but also the practical application of this knowledge, the Harvey Society had for the subject of its lecture last week the treatment of diabetes, by the well known Viennese clinician, William Falta. In these days of scientific medicine it is well that an entire lecture should be devoted to the treatment of a disease. The modern tendency has been too much toward ætiological and pathological investigations, and while these are necessary foundations for a complete mastery of disease, they should on no account crowd out the careful study of treatment. After all, our patients care but little about their pathological condition; their interest lies solely in relief or cure of their symptoms.

In view of the complex nature of diabetes, a causal therapy is obviously out of the question. The symptomatic treatment concerns itself primarily with the chief symptom, the glycosuria. A little consideration will show that two possibilities of treatment present themselves, namely, either to increase the efficiency of carbohydrate metabolism or to diminish the requirement of this metabolism and give the diseased organs an opportunity to recover. The attempts made along the first of these lines included pancreatic transplantations and treatment with pancreatic extracts. These efforts, as is well known, were unsuccessful. In this connection it is well to remember that the sole cause of diabetes is not to be sought in the pancreas. It is possible that other organs elaborating an internal secretion are involved, and there is no doubt of the participation of the nervous system in some of the cases.

In combating the disturbance of carbohydrate metabolism, the main thing to attend to is the glycosuria. The question is sometimes asked, On what grounds de we seek to bring about the disappearance of the glycosuria? The answer to this is simple-in order to obtain for our patient the caloric value of the food he ingests. To take an extreme example, when a patient excretes daily 100 grammes of dextrose he loses 400 calories. Conditions may be such, however, that the mere substitution of fifty grammes of fat for the carbohydrate will make up this deficiency, and then our patient will be utilizing all his food supply. Furthermore, the glychæmia which goes with a true diabetes increases the disturbances of metabolism, thus establishing a vicious circle. It is important, therefore, not to be content with a reduction of the glycosuria to a few grammes of sugar per diem, but to insist on a complete suppression of the condition, including the hyperglychæmia. Each case must be studied by itself, and it is of the greatest importance to know exactly the character and extent of the disease. In Falta's clinic, each patient is placed for three days on a diet composed of 250 grammes of meat, 150 grammes of butter, four eggs, 300 grammes of vegetables, and 75 grammes of white bread, together with tea, bouillon, coffee, and light wine. This is divided into three equal meals for one day. The intake from such a food is calculated by Falta to be about six grammes of nitrogen and fifty grammes of carbohydrate. It furnishes about 2,400 calories.

The urine of these patients is carefully examined daily, and the total excretion of sugar noted. In this connection it is important to remember that the patients may also be excreting oxybutyric acid, and that therefore the polariscopic determinations may lead to erroneous conclusions regarding the amount of urinary sugar. Fehling's test, especially when the copper is added in excess and titrated back, is still the most reliable. However, a combination of both the polariscopic and Fehling determinations is often of decided value, for in that way one can obtain an indication of the amount of oxybutyric acid present. From a comparison of the intake and the excretion of sugar, one can learn what kind of a case one is dealing with. Instead of speaking of a negative carbohydrate balance, Falta prefers to take into account also the proteid metabolism, and cal-

The work of recent years has shown the impor-

tance of studying and treating the acidosis in diabetes. This is especially true during the period when the carbohydrates are being withdrawn. As a rule the condition can be controlled by the administration of alkalies, but there are cases in which the use of carbohydrates must be resumed. This was well brought out by the careful studies of Allard, working in Minkowski's clinic. When it is necessary to keep up the alkali treatment for some time, it is well to employ citrate of sodium. If the urine becomes and remains alkaline, one may be sure that the acidosis has been overcome.

The great danger from the acidosis, of course, is the production of diabetic coma. The onset of this condition is often marked by a feeling of drowsiness, lack of appetite, and a feeling of oppression in the chest. Frequently there is a decrease of the ketone bodies in the urine, and large quantities of casts are found. There is marked lipæmia, even during fasting. The one important thing to do is to administer alkalies as quickly as possible. carbonate of sodium, as much as 100 grammes daily, either in an alkaline mineral water or, better still, by means of intravenous infusions of a four per cent. saline solution. The diet should be easily digestible and contain some carbohydrate, preferably some lævulose. By this treatment it is possible to prevent an attack of coma, and even to overcome it after it has developed. It is to be noted, however, that there is no record of a second attack of diabetic coma from which the patient recovered.

Falta called attention to a small but interesting group of cases of diabetes in which there is marked disturbance of the pancreatic function. Some of these, for example, are associated with stone in the pancreatic duct. This condition leads to a marked interference with fat and proteid digestion, so that the stools of the patients are rich in fat and muscle fibres. In fact, occasionally the fat exudes from the anus and solidifies in a butterlike mass. All this time the patients are starving, are living on their own tissues. These patients can be saved by feeding them with pancreatic extracts and by keeping up the alkalinity of the intestines. In Vienna diabetic patients can obtain a highly porous gluten bread known as "Luftbrod." While this has not a great deal of nutritive value, it is an excellent vehicle for the administration of large quantities of butter and cheese. In this connection, we should like to direct the attention of our Pure Food Law officials to the deception practised by the manufacturers of a number of diabetic foods. While ostensibly made solely from gluten and other noncarbohydrate constituents, these flours, breads, etc., often contain considerable quantities of starch. Evidently

similar conditions exist abroad, for Professor Falta spoke of the misleading analyses often attached to these preparations. Perhaps our local Health Department can take hold of this matter.

THE FOOT AND MOUTH DISEASE.

The appearance of foot and mouth disease among the cattle of Pennsylvania has led to the publication in the sensational press of exaggerated statements as to the danger of infection of human beings. It is true that the disease may be contracted by man, but the number of cases which have occurred in the United States has never been large even where the disease has been widespread among cattle. In man it is generally restricted to children who drink large quantities of unboiled milk and to adults who handle animals infected with the disease. The disease prevails much more extensively among the cattle of Europe than among those of the United States, and it is believed by some veterinarians that where the disease is prevalent among animals it frequently occurs in human subjects without being recognized by the physician. The disease is rarely fatal, though it causes great losses from the diminution of the milk secretion and the consequent interference with the business of the dairy. Wherever the disease has appeared in America it has heretofore been quickly suppressed by a most rigid quarantine and the destruction of the infected herds.

The characteristic symptoms of foot and mouth disease (aphthous fever) are a combination of high fever, vesicular inflammation of the mouth, and a hot, painful, swollen condition of the feet, followed in from twenty-four to forty-eight hours by the appearance of numerous small vesicles varying in size from that of a pea to that of a hazel nut on the udder and feet and in the month. No other disease of cattle produces symptoms likely to be confounded with these. The disease makes its appearance in from three to six days after exposure to infection, the first symptom noted being a chill rapidly followed by a fever producing a temperature sometimes as high as 106° F. After a day or two small vesicles appear on the mucous membrane of the mouth, at the border and on the upper surface of the tongue, on the inner side of the cheeks, and on the inner surface of the lips. These vesicles contain a yellowish watery fluid and gradually grow until they reach a diameter of from half an inch to an inch and a half. The vesicles break after a day or so and a grayish white membrane is formed which disappears, leaving a reddened, sensitive spot or erosion in the mouth and on the coronet and between the claws of the feet. The fatal cases are those in which the internal organs are attacked before the disease appears on the external parts.

Where death occurs it seems to be due to paralysis of the heart caused by the toxines produced by the disease.

So far, no specific bacillus has been isolated, though the disease is generally believed to be of microbial origin. The Bnreau of Animal Industry of the United States Department of Agriculture has recently issued a circular on this disease from which the data given above are taken. The authors, Dr. D. E. Salmon and Dr. Theobald Smith, say that relief may be obtained by treating the symptoms. Local applications, disinfecting and astringent lotions, may be used to combat the local symptoms. In weakness of the heart digitalis, camphor, and alcohol may be administered, and excessive fever may be reduced by the use of phenacetin.

THE ARMY MEDICAL RESERVE CORPS.

The regular Army Medical Corps and the medical profession in general throughout the country undoubtedly feel that the new Medical Reserve Corps will relieve the medical service of the army of much embarrassment in case of the outbreak of another war. The reasons for this feeling have been fully stated in print more than once, and no dissent has been evoked from professional sources, so far as we have observed. But the New York Times is of a different opinion. It fears that the appointees on the new corps will prove incompetent, and calls them "a lot of civilian doctors." The truth is that the great majority of the newly commissioned officers are men of military experience, acquired in the civil war, in the war with Spain, in the Philippine operations, and in militia camps and marches. Surely such a body of men is to be preferred to those appointed in haste by the governors of States

NEWSPAPER PHYSIOLOGY.

A correspondent recently asked the New York Times the following question: "Which is the quicker, the hand or the eye? Can the difference be reduced to a question of time?" We do not see how it could be anything else than a question of time, but let that pass. The paper replies that the trained hand is much quicker than the eye, and it adds this remarkable statement in support of its decision: "The act of perceiving and identifying an object-a letter of the alphabet, for example-requires about two hundredths of a second, the experts tell us. The trained prestidigitator can accomplish a definite movement of the hands, like the juggling of a card, in about fifteen hundredths of a second." To those of us who are not "experts" the Times's reply seems to carry its own refutation.

Obituary.

ANDREW J. McCOSH, M. D., of New York.

In the fifty-first year of his age, at the height of his usefulness, Dr. McCosh has succumbed to an injury of the head caused by his being thrown from his carriage in a runaway accident. He was taken to the Presbyterian Hospital, of which he was one of the surgeons, and died on Wednesday, December 2d, without having regained consciousness. Dr. McCosh was a native of Belfast, Ireland, but virtually his entire life was spent in this community. He was a graduate of the College of Physicians and Surgeons, of the class of 1880. Soon after his graduation he achieved prominence as a surgeon, and for the last twenty years of his life he was a hospital surgeon and active in private practice. He was recognized by the profession in general as a surgeon of exceptional ability, and he was respected accordingly; moreover, his attractive personal qualities caused him to be loved by everybody who knew him.

Hews Items.

The Boston Society of the Medical Sciences recently elected the following officers: Professor W. B. Cannon, president; Dr. J. L. Bremer, secretary; Professor F. B. Mallorv, treasurer.

An English-Chinese Lexicon of Medical Terms, prepared by Dr. Philip B. Cousland, has just been published in Shanghai. Dr. Cousland has recently published a translation of Halliburton's edition of Kirkes's Physiology.

Changes of Address.—Dr. H. Austin Cossitt, from Morris Plains, N. J., to 146 West 70th Street, New York. Dr. M. Barbour to 1619 South Sixth Street, Philadelphia. Dr. Frederick Krauss, to the Roger Williams Building, 1701 Chestnut Street, Philadelphia.

The H. K. Cushing Laboratory of Experimental Medicine, at the Western Reserve University, Cleveland, Ohio, was dedicated on November 20th. Dr. William H. Welch, of the Johns Hopkins Medical School, made the principal address. Dr. George N. Stewart is director of the laboratory.

The Harvey Society Lectures.—The fifth lecture in the Harvey Society course will be delivered by Dr. M. J. Rosenau and Dr. John F. Anderson, of the United States Public Health and Marine Hospital Service, on Saturday, December 5th, at 8:30 p. m., at the New York Academy of Medicine. The subject will be Anaphylaxis.

Contagious Diseases in Chicago.—Seven hundred and eighty-eight cases of contagious diseases were reported to the Department of Health during the week ending November 21, 1008. Of these 214 were of diphtheria, 212 of scarlet fever, 58 of measles, 68 of chickenpox, 42 of typhoid fever, 25 of pneumonia, 17 of whooping cough, 127 of tuberculosis, and 24 of minor diseases.

The Rochester, N. Y., Academy of Medicine.—The regular monthly meeting of Section I, which includes general medicine, neurology, psychiatry, materia medica, and therapeutics, was held on Friday evening, December 4th. Dr. Henry L. Elsner, of Syracuse, N. Y., read the paper of the evening on the Comparative Values of the Tuberculin Tests, with Special Consideration of the Ophthalmic.

Amalgamation of Medical Societies.—A union of the Southeastern Medical Society and the Eastern Medical Society, of Philadelphia, has been effected. The new society will be called the Southwark Medical Society, and will meet the first and third Thursdays of each month. The following officers have been elected: Dr. M. Staller, president; Dr. A. Brav, vice-president; Dr. M. B. Cooperman, secretary; and Dr. J. J. Frankel, treasurer.

The American Society of Sanitary and Moral Prophyalaxis.—A regular meeting of this society will be held at the New York Academy of Medicine, on Thursday evening, December 10th. The subject for consideration will be The Lecture Work of this Society. Papers will be presented by Dr. Thomas M. Balliet, dean of the School of Pedagogy, Professor F. N. Seerley, Dr. Emma E. Walker, and others. A general discussion will follow.

The Obstetrical Society of Philadelphia.—At a stated meeting of this society, held on Thursday evening, December 3d, Dr. Henry D. Fry, professor of obstetrics in the Medical Department of Georgetown University, read a paper entitled The Best Methods of Terminating the First Stage of Labor, with Special Reference to Vaginal Cæsarean Section. Dr. Barton Cooke Hirst, Dr. E. P. Davis, Dr. Alice Weld Tallant, Dr. R. C. Norris, and Dr. G. M. Boyd took part in the discussion.

The Elmira, N. Y., Academy of Medicine.—The regular meeting of this academy was held on Wednesday evening, December 2d. The programme included papers as follows: The Extent, Diagnosis, and Prevention of Rabies, by Dr. Veranus A. Moore, of Cornell University, Ithaca, N. Y.; Some Observations upon Japanese Sanitation, by Dr. F. W. Ross, of Elmira, N. Y.; Syphilis of the Nervous System and its Treatment, by Dr. Floyd S. Crego, of Buffalo, N. Y.

Syracuse, N. Y., Academy of Medicine.—A meeting of this academy was held on Tuesday evening, November 24th. The programme included the following papers: Long Continued Infection in a Case of Appendicitis, by Dr. C. F. Wiley; The Diet in Typhoid Fever, by Dr. I. H. Levy; Report of a Case of Cæsarean Section for Contracted Pelvis, with Demonstration of Apparatus for Measurement of Pelvis by the X Ray, by Dr. A. S. Hotaling and Dr. C. E. Coon.

Epidemics in Pennsylvania Cities and Towns.—Reading, Pa., is experiencing a rather severe epidemic of typhoid fever. Allentown has scarlet fever and diphtheria in epidemic proportions. Lehigh County has an epidemic of foot and mouth disease among the cattle, which has extended to other counties and has made its presence known in Philadelphia. There is much anxiety on the part of some that the disease might affect the human population of the infected areas. The cases of human infection with foot and mouth disease are rare in the United States.

The Buffalo, N. Y., Academy of Medicine.—The regular meeting of the Section in Surgery of this academy was held on Tuesday evening, December 1st. The programme consisted of a "symposium" on Fractures. Papers were read as follows: The Use of the X Ray in Fractures, by Dr. W. W. Plummer; The Nonoperative Treatment of Fractures, by Dr. Frank J. Carr; The Operative Treatment of Fractures, by Dr. Marshall Clinton; Complications in the Treatment of Fractures, by Dr. Roswell Park. Among those who took part in the discussion were Dr. Eugene A. Smith and Dr. Edgar R. McGuire.

The Section in Medical History of the College of Physicians of Philadelphia held a stated meeting on Monday evening, November 30th. Dr. W. W. Keen read a paper entitled Remarks on the Incumabula and Other Books Purchased for the College during My Stay in Europe, and also on the Sepulchral Mural Tablets of Bologna. The paper was accompanied by an exhibition of incumabula and photographs of mural tablets. Dr. Charles W. Burr read a paper on the Life of Jerome Cardan. Dr. James J. Walsh, professor of the history of medicine at Fordham University, New York, read a paper on Old Time Medicine and Medical Education.

The Medical Association of the Greater City of New York.—A special meeting of this association, under the direction of the Chairman for the Borough of the Bronx, will be held on Monday, December 7th, at 8:30 p. m., at the residence of the chairman, Dr. N. B. Van Etten, Tremont Avenue, corner of Anthony Avenue, New York. Papers will be read as follows: Conclusions in regard to the Best Surgical Treatment in Tic Douloureux, by Dr. Robert Abbe; The Common Forms of Gastroenteric Neuroses: Their Ætiology and Treatment, by Dr. Anthony Bassler; Some Drugs for Gyngecological Patients, by Herman J. Boldt. Among those who will participate in the discussion are Dr. Jacob Kaufmann, Dr. Ludwig Kast, and Dr. William II. Porter.

Cholera in St. Petersburg.—It is reported that Asiatic cholera has broken out again in St. Petersburg. It was thought that the disease which was epidemic in the city about three months ago, had been practically eradicated, but new cases are being reported every day.

The Rockefeller Institute for Medical Research.-At a recent meeting of the board of directors of this institution, Dr. Rufus I. Cole, of the Johns Hopkins Medical School, Baltimore, was appointed director of the hospital, and Dr. Christian A. Herter was appointed one of the physicians. Work on the hospital buildings is in progress, and it is exceeded the tables. pected that they will be completed and ready for occupancy in November, 1909.

The Health of Pittsburgh.- During the week ending November 21, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickendiseases were reported to the bureau of realit. Chicken-pox, 21 cases, 0 deaths; typhoid fever, 16 cases, 1 death; scarlet fever, 43 cases, 2 deaths; diphtheria, 29 cases, 3 deaths; measles, 23 cases, 0 deaths; whooping cough, 4 cases, o deaths; pulmonary tuberculosis, 31 cases, 10 deaths. The total deaths for the week numbered 143, in an estimated population of 565,000, corresponding to an annual death rate of 13.16 in 1.000 population.

Charitable Bequests.—By the will of Franklin W. Russell, of Pittsfield, Mass., the House of Mercy, Pittsfield, receives \$25,000; the Pittsfield Hospital receives \$1,000 for the maintenance of a room, to be known as the S. N. Russell room; the Boys' Club of Pittsfield receives \$25,000; the Pittsfield Y. M. C. A. receives \$25,000; Baker Memorial Church receives \$7,000; and the Graduate Nurses' Association receives \$5,000.

By the will of William Ulmer, of Brooklyn, the German

Hospital, at St. Nicholas Avenue and Stanhope Street, re-

ceives \$10,000.

The Hospital Ship Relief.—The Navy Department received a cable despatch on November 25th from Surgeon Stokes, who is in command of the Hospital ship Relief, stating that the ship had arrived safely at Sorsogon, Philippine Islands. While on the voyage from Manila to Guam the ship was struck by a typhoon on November 18th and was badly damaged. At the same time fire broke out in the ship, which the crew succeeded in putting out. porary repairs to the ship's engines were made by the crew, so that she proceeded under her own steam to Manila by way of Southern Luzon.

Infectious Disease in New York:

We are indebted to the Bureau of Records of the De-zarment of Health for the volumes, statistics of new cases and deaths reported to be the needs ending No-

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| Measles | | 4 | 255 | 5 |
| Scarlet fever | | 5 | 191 | 10 |
| Smallpex | | | | |
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| Whooping cough | | 2 | 24 | 2 |
| Crebrospina menu gitis | 7) | 5 | 5 | 7 |
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Scientific Society Meetings in Philadelphia for the Week Ending December 12, 1908:

Monday, December 7th.—Philadelphia Academy of Surgery: Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society, Wills Hospital Ophthalmic Society.

TUESDAY, December 8th .- Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences

THURSDAY, December 10th .- Pathological Society; Section Meeting, Franklin Institute.

FRIDAY, December 11th .- Northern Medical Association; West Branch, Philadelphia County Medical Society.

Vital Statistics of New York .- During the week ending November 21, 1908, there were reported to the Department of Health of the City of New York 1,236 deaths from all causes, as compared with 1,207 for the preceding week,

and 1,322 for the corresponding period in 1907. The annual death rate in 1,000 of population was 14.58 for the week, 15.81 for the preceding week, and 16.09 for the corresponding period in 1907. The death rate for the week in responding period in 1907. The death rate for the week in Manhattan was 14.90; in the Bronx, 19.27; in Brooklyn, 13.38; in Queens, 13.01; and in Richmond, 12.93. Of the total number of deaths 323 were of children under five years of age, and of these 223 were less than one year of age. There were 14 deaths from suicide, 3 deaths from homicide, and 65 deaths from accidents. One hundred and forty still births were reported. There were 605 marriages and a 366 births during the week and 2,362 births during the week.

The Tuberculosis Camp on the Roof of the Vanderbilt Clinic, Sixtieth Street and Amsterdam Avenue, was formally opened on Saturday, November 28th. At present this is a day camp for tuberculosis patients, but as soon as the necessary arrangements can be made, it will be opened for patients at night. It has the appearance of a roof garden, is 160 feet above the street, and overlooks the river. It is open to the south, the other three sides being inclosed with pivoted windows. The camp is open from 9 a. m. to with pivoted windows. The camp is open from a first property of p. m., and doctors and nurses are in constant attendance. It is free to persons living north of Fiftieth Street, west of Eighth Avenue, and south of Spuyten Duyvil. The Red Cross Society has volunteered to support it for the first year, but an endowment of at least \$100,000 will be needed to make it a permanent establishment.

The Mortality of Chicago.-During the week ending November 21, 1908, there were reported to the Department of Health of the City of Chicago 596 deaths from all of Health of the City of Chicago 590 deaths from an 535 for the corresponding period in 1907. The annual death rate in 1,000 population was 14,34, as against a death rate of 13,24 for the corresponding period last year. Of the total number of deaths 111 were of children under one year of age, and 52 were of children between one and five years. The principal causes of death were: Apoplexy, deaths: Bright's disease, 50 deaths: bronchitis, 25 deaths; consumption, 77 deaths; cancer, 29 deaths; diphtheria, 23 deaths; heart disease, 50 deaths; influenza, I death; intesdeaths, heart diseases, 50 deaths; measles, 6 deaths; nervous diseases, 9 deaths; pneumonia, 63 deaths; scarlet fever. 13 deaths; suicide. 8 deaths; typhoid fever, 5 deaths; violence, other than suicide, 30 deaths; all other causes, 138 deaths.

New York Academy of Medicine .-- A meeting of the Section in Padiatrics will be held on Thursday evening, December 10th, at 8:15 o'clock. Dr. E. A. Riesenfeld will cember 10th, at 8:15 o'clock. Dr. E. A. Riesenfeld will present x ray pictures of a case of infantile scurvy. Dr. Herman Schwarz will report a case of hæmorrhage in the newborn, apparently due to delayed coagulability of the blood. Dr. William H. Stowell will read a paper entitled Infant Mortality; A Comparison of the Past and Present. Dr. William H. Guilfoy, Dr. John Spargo, Dr. Abram Brothers, and Dr. W. C. Phillips will take part in the dis-

The Section in Otology will meet on Friday evening, December 11th, at 8:15 o'clock. Dr. Seymour Oppenheimer will present a patient with mastoiditis, sinus thrombosis, extradural abscess, and meningitis. Dr. Frank T. Hopkins will exhibit a specimen of sequestrum of labyrinth. Dr. Emil Gruening will read a paper on Sinus Thrombosis and Streptococcæmia. There will be a general discussion

The Philadelphia Neurological Society.-At the regular meeting of this society, which was held on Friday evening, November 27th, the programme included the presentation of the following cases: Intermittent Claudication, by Dr. M. D. Bloomfield; Cerebellar Syndrome showing Dr. M. D. Bloomfield; Cerebellar Syndrome showing Progressive Improvement after a Decompressive Operation, Progressive Improvement after a Decompressive Operation, by Dr. Alfred Gordon; Facial Spasm treated by Alcoholic Injection, by Dr. William G. Spiller; Symptoms of Bilateral Motor Tract Disease with Dissociation Anaesthesia, by Dr. J. W. McConnell; The Symptom Complex of a Lesion of the Upper Part of the Anterior Spinal Arteries, by Dr. Charles K. Mills. Papers were read as follows: A New Symptom Complex, Flaccid Paralysis or Extreme Hypotonia of the Muscles which Poise and Support the Head, by Dr. Charles K. Mills; The Duration of Life after Extensive Hæmorrhage of the Brain, by Dr. William G. Spiller; The Uses of High Frequency Currents in Neurol-Spiller; The Uses of High Frequency Currents in Neurology, by Dr. William J. Dugan; Sacral Tabes, by Dr. S. Leopold; A case of Supernumerary First Rib, by Dr. T. A.

The Medical Society of the County of Otsego, N. Y .--The one hundred and second annual meeting of this society will be held in the County Court rooms, Oneonta, N. Y., on Tuesday, December 8th. At the first session, which will begin at 10:45 a. m., reports from officers, delegates, and committees will be received, officers for the ensuing year, new members, and delegates will be elected, and all other routine business will be transacted. The afternoon session will begin at 1:30 o'clock. An interesting programme has been prepared, which includes the following papers: Obituary of Dr. Charles E. Parrish, by Dr. Arthur W. Cutler; Rare Surgical Operations, by Dr. Henry W. Boorn; A Successful Treatment for Some Obstinate Forms of Skin Diseases, by Dr. Delos B. Manchester; Ether Gas Anæsthesia, by Dr. Charles R. Marsh. The discussion on these papers will be opened by Dr. Henry D. Sill, Dr. Joshua J. Sweet, and Dr. Willis S. Cook. Dr. Arthur H. Brownell, of Oneonta, is acting president of the society, Dr. Henry W. Boorn, of Schenevus, is secretary, and Dr. Frank L. Winson, of Laurens, is treasurer. been prepared, which includes the following papers: Obitsor, of Laurens, is treasurer.

Society Meetings for the Coming Week:

Monday, December 7th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library As-sociation; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn.,

TUESDAY, December 8th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City. N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

Wednesday, December oth.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y

THURSDAY, December 10th.-New York Academy of Medicine (Section in Paediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers,

FRIDAY, December 11th.-New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York (annual); Saratoga Springs, N. Y., Medical Society; New York Academy of Medicine (Section in Otology).

SATURDAY, December 12th.-Therapeutic Club, New York.

The International Tuberculosis Exhibit.—The tuberculosis exhibit, which was shown at Washington, D. C., in connection with the Sixth International Congress on Tuberculosis, is now on exhibition at the American Museum of Natural History, Seventy-ninth Street and Columbus Avenue, New York. The cost of bringing this great exhibit to New York was met by an appropriation of \$13,000 by the city and by an additional fund raised by the Committee on Tuberculosis of the New York Charity Organization Society. To make the exhibits readily understood, full descriptions and explanations are furnished by trained men and women. The exhibition is open daily from 10 a. m. to 11 p. m., and on Sundays from 1 to 5 p. m. No tickets are required. Arrangements have been made for a number of public meetings to be held in connection with the exhibit, and there will also be a number of special conferences for and there will also be a number of special conferences on the medical profession, the churches, the Y. M. C. A., labor unions, etc. At the first medical conference, which was held on Friday evening. December 4th, addresses were made by Dr. Lawrence F. Flick, Dr. Simon Flexner, Dr. Joseph D. Bryant, and Mr. Edward T. Devine. On Monday, December 8th, at 4:30 p. m., there will be a mass meeting of medical students, and among the speakers at this meeting will be Dr. G. F. Laidlaw, Dr. H. M. Biggs, Dr. W. B. James, Dr Woods Hutchinson, Dr. W. Gilman Thompson, Dr. John B. Huber, and Dr. S. Adolphus Knopf. On December 11th a special medical meeting will be held under the auspices of the Section in Public Health of the New York Academy of Medicine, at which Dr. John A. Wyeth will preside, and Dr. Walter F. Wilcox will deliver an address. 1 1 . 1. 1.1 under the auspices of the Homocopathic Medical Society of the County of New York. Dr. George F, Laidlaw will pre-

side, and among the speakers will be Dr. Thomas Darlington, the Hon. Robert Hebberd, the Hon. Eugene H. Porter. and Dr. H. D. Pease.

The Hayden Medal, awarded at irregular intervals by the Academy of Natural Sciences of Philadelphia, was awarded this year to Mr. John Mason Clarke, State Geologist of New York, for his work on geology, his best known works being The Early Devonic History of New York and Eastern North America. The medal, which was formerly of bronze, was awarded every year from the foundation of the fund until 1899. In that year it was decided to award the medal every three years and to offer a gold medal instead of the bronze one originally given. The following awards have been made since the establishment of the fund awards have been made since the establishment of the fund by Mrs. Emma W. Hayden in honor of her husband, Dr. Ferdinand V. Hayden: 1890, James Hull, State Geologist of New York; 1891, Edward D. Cope, of Philadelphia, distinguished paleontologist; 1892, Edward Suess, of Vienna, author of Das Antlitz der Erde; 1893, Thomas H. Huxley, of London, the distinguished biologist and paleontologist; 1894, Gabriel Auguste Daubree, of the Institute of France; 1895, Karl A. von Zittel, of Munich, author of the Monumental Handbuch der Paleontologie; 1896. Golovani Capellini of Bologna president of the Royal Geological Survey. mental Handbuch der Paleontologie; 1896. Giovanni Capelini, of Bologna, president of the Royal Geological Survey of Italy; 1897, A. Karpinski, of St. Petersburg. director of the Geological Survey, of Russia; 1898, Otto Maryin Torell, Chief of the Geological Survey, of Sweden; 1899, Gilles J. G. Duvalque, Secretary of the Geological Society of Belgium; 1902, Archibald Geikie, Director of the Geological Survey of Great Britain; 1905, Charles Doolittle Walcot, Director of the United States Geological Survey and now Secretary of the Smithsonian Institution.

Appointments in the Army Medical Reserve Corps .-Announcement is made of the following appointments as first lieutenants in the medical reserve corps of the United

States Army:
Baltimore: Dr. J. C. Bloodgood, Dr. Harvey Cushing,
Dr. Alexander C. Abbott. Dr. J. M. T. Finney, Dr. William
S. Thayer, Dr. W. T. Halsted.
Woodstock, Vt.: Dr. C. W. Sherwin.
Washington, D. C.: Dr. H. C. Yarrow, Dr. J. F. Mitchell.

Dr. C. W. Richardson.
San Francisco, Cal.: Dr. W. S. Thorne, Dr. T. W. Huntington, Dr. H. M. Sherman. Dr. H. C. Moffitt, Dr. W. I. Terry, Dr. J. W. Shiels, Dr. B. F. Alden, Dr. A. J. Houston, Dr. W. F. Cheney, Dr. C. G. Levison, Dr. Emil O. Jellinek.

New Orleans, La.: Dr. E. Souchon, Dr. L. F. Reynaud, Dr. J. J. Archinard, Dr. Isadore Dyer, Dr. Rudolf Matas. Detroit, Mich.: Dr. H. O. Walker, Dr. J. H. Carstens,

Dr. Angus McLean. New York: Dr. Carl Beck. Dr. W. G. Thompson, Dr. R. New York: Dr. Carl Beck. Dr. W. G. Hondison, Dr. R. T. Morris, Dr. A. J. McCosh, Dr. Thomas Darlington, Dr. S. T. Armstrong, Dr. Alexander Lambert, Dr. W. H. Haskin, Dr. L. A. Conner, Dr. David Stewart, Dr. Simon Flexner, Dr. Samuel Lloyd, Dr. Robert F. Weir, Dr. F. P. Foster, Dr. Joseph D. Bryant, Dr. John A. Wyeth, Dr. F. P. Kinnicutt, Dr. Alexander Smith, Dr. V. P. Gibuey, Dr. W. T. Bull, Dr. F. S. Dennis, Dr. A. H. Doty, Dr. Robert

Abbe.
Philadelphia: Dr. J. H. Musser, Dr. G. E. de Schweinitz, Dr. Edward Martin, Dr. B. C. Hirst, Dr. C. S. Penrose, Dr. H. A. Hare, Dr. J. C. Da Costa, Dr. R. G. Leçonte, Dr. James C. Wilson, Dr. J. William White, Dr. Richard H. Harte, Dr. J. G. Clark, Dr. A. Stengel, Dr. D. L. Edsall, Dr. C. H. Frazier, Dr. J. H. Gibbon, Dr. William Pepper, Dr. F. D. Patterson, Chicago: Dr. C. S. Bacon, Dr. J. B. Murphy, Dr. H. B. Favrill, Dr. A. D. Bevan, Dr. M. L. Harris, Dr. George H. Simmons, Dr. Frank Billings, Dr. W. E. Schneider, Dr. A. J. Ochsner, Dr. A. E. Halstead, Dr. C. L. Mix. St. Louis: Dr. H. G. Mudd. Boston: Dr. J. C. Munro, Dr. Theobald Smith, Dr. C. L. Scudder, Dr. J. C. Munford, Dr. F. G. Balch, Dr. J. B. Blake, Dr. R. H. Fitz, Dr. F. C. Shattnek, Dr. Myles Standish, Dr. W. T. Councilman, Dr. S. T. Miyter, Dr. William H. Conant, Dr. Farrar Cobb, Dr. R. C. Cabot, Dr. J. T. Bottomley, Dr. F. A. Washburn, Dr. W. C. Howe, Dr. D. Cheever.

Cleveland, Ohio: Dr. George W. Crile. Ann Arbor, Mich.: Dr. C. B. G. Denanerode, Dr. V. C.

Revelworth, Ill.: Dr. Sanger Brown. Buffalo, N. Y.: Dr. Roswell Park.

Bith of Current Titerature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

1. The Relation between Human and Animal Tuberculosis, with Special Reference to the Question of the Transformation of Human and Other Types of the Tubercle Bacillus,

By Theobald Smith.

On Certain Evil Tendencies in Medicine and Surgery,
To be continued). By MAURICE H. RICHARDSON.
The Comparative Value of Change of Climate and of
Treatment in Sanatoria near at hand in Cases of
Pulmonary Tuberculosis,
By CARROLL E. EDSON. Sporadic Trichinosis, with Report of a Case.

By WALTER R. STEINER.

Bursitis Subacromialis, or Periarthritis of the Shoulder Joint (Subdeltoid Bursitis). (To be continued),

By ERNEST AMORY CODMAN.

1. The Relation between Human and Animal Tuberculosis.—Smith reviews the opinions on the question whether it is possible that bovine tubercle bacilli may assume the human type in man, and that human bacilli may become bovine in cattle. He comes to the conclusion that the time has not yet come for us to state positively that one type can or cannot be transformed into the other. The very nature of the methods employed leaves a big gate for errors to sneak in, and the proof if it ultimately comes will be more in the nature of a majority vote than a demonstration. In the meantime we may safely take the ground that any regular or wholesale conversion of bovine into human bacilli in the human body is out of the question, as contradicted by most of the experimental evidence thus far presented and by certain observations made on the occurrence of the spontaneous disease. We know that human tuberculosis can exist without the aid of bovine tuberculosis, and an important aid in the final solution of this question will be the study of human tuberculosis in such regions where the bovine disease does not exist, and where the dairy products are not shipped in from countries in which the disease prevails. The difference between the human and bovine types pertains to morphological, cultural, and pathogenic characters. On serum the human type is longer and slenderer than the bovine type and slightly curved. It grows readily from the start, often profusely, and after the first generation multiplies freely on glycerin agar and glycerin bouillon, forming on the latter a thick, nodular, or puckered membrane. The colonies on serum are in the characteristic S shaped bundles first described by Koch. The bacilli in the bovine colonies are grouped irregularly without any distinct conglutination into bun-After the bovine bacillus has vegetated for several generations on egg or serum it will begin to grow feebly on glycerin agar and bouillon, where it forms a very delicate membrane, suggesting tissue paper, with occasional thickenings in it. After a fairly vigorous growth has established itself on glycerin bouillon, the bovine type presents the peculiarity of converting a bouillon, containing five per cent. glycerin and of a certain degree of acidity to phenolphthalein, into an alkaline medium. The human type does not do this. At the end of one to two months the bovine type is alkaline, the human type acid. The acidity of some types reaches four per cent. of a normal solution; that of other types but 1.5 per cent. to 2 per cent. The bovine bacillus is highly pathogenic for rabbits and cattle; the human type is not. Though the bovine bacillus slowly degenerates in virulence with prolonged cultivation, yet its virulence for these species is remarkably tenacious.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. November 28, 1908.

The Nature and Causes of Eczema. Chairman's Address, Section on Cutaneous Medicine and Surgery,
Annual Meeting of the American Medical Associa-By M. B. HARTZELL. tion, June 2 to 5, 1908, Relation of Pharmacy to Medicine,

By Joseph P. Remington.

Ophthalmology for General Practitioners, By LEARTUS CONNOR.

- The Ocular Reaction to Tuberculin,
 By Oscar H. Wilson.
 Abnormal Secretion from the Mammary Glands in
 Nonpregnant Women.
 By George Gellhorn.
 Ablatio Placentæ. Premature Detachment of the Normally Situated Placenta.

By RUDOLPH WIESER HOLMES. The Diuretic Action of Adrenalin and the Active Prin-

ciple of the Pituitary Body,
By E. M. HOUGHTON and C. H. MERRILL.
The Treatment of Tuberculosis by the Administration
of Mercury,
By Barron Lisle Wright.

3. Ophthalmology for General Practitioners. -Connor remarks that general practice ophthalmology is all of ophthalmology the student can master without violence to other courses, and a family physician can practise in harmony with his work. includes four factors: The ability to recognize and treat eye injuries (except foreign bodies within the eyeball); the recognition and treatment of all eve infections and diseases of the uveal tract; the recognition and management of simple presbyopia, simple myopia, and simple hyperopia. The best interests of the profession and laity demand a mastery of general practice ophthalmology by every physician. The medical college obstacles to this can be removed (1) by eliminating from every course all chaff; (2) by adjusting the proportion of courses to the actual needs of the family physician, and (3) by insisting that all the professors be trained in the art of pedagogy, as well as the art of medicine. The machinery of State medical societies and the American Medical Association should be used to awaken the interest of licensed physicians and induce registration boards and medical colleges to place among their requirements a "general practice ophthalmol-

5. Abnormal Secretion from the Mammary Glands in the Nonpregnant.—Gellhorn says that the physiological, that is, the most common, and at the same time the strongest, stimulus for the function of the mammary gland is pregnancy. As a rule, the formation of colostrum begins in the second month of gestation, the transformation into milk on the second or third day of the puerperium. The period of lactation lasts, on an average, one year, but ranges, in individual cases, within wide limits. It is, however, permissible to speak again of abnormal mammary secretion in nonpregnant women if the duration of lactation exceeds two years, when the organism of the child obviously has become independent of the milk supply from the mother. Yet it is an altogether common occurrence to see lactation intentionally prolonged for an indefinite period of time. The clinicians have been always inclined to assume an influence of the nervous system on lacteal secretion, and they have based their views mainly on the observation that the secretion of milk is some-

times greatly altered by such emotions as passion, grief, or mental depressions. The textbooks on physiology arrive at similar conclusions, principally from analogy between the mammæ and other glands, the secretion of which is subject to nerve stimuli. According to Halban the ætiology of mammary functions has nothing to do with the fœtus, but this function is due to the internal secretion of the ovary; in pregnancy the function of the ovary is temporarily assumed by the internal secretion of the placenta. This theory throws much light on a problem of science which hitherto has been very obscure, despite the enormous number of investigations which have preceded our author's. H. de Rothschild has collected up to 1899 not less than 8,375 publications on this subject. Lacteal secretion does not only occur in pregnancy and puerperium but it also may appear in the newborn, in the growing child, in the adult virgin, and in the old woman. It may be prolonged indefinitely after childbirth, and may be associated with certain pathological conditions within the genital sphere. Aside from the intense scientific interest in the ætiology of lacteal secretion, there is also considerable practical importance attached to abnormal activity of the mammary glands, and a thorough knowledge of a typical function of these organs is indispensable to the expert in medicolegal practice.

7. The Diuretic Action of Adrenalin and the Active Principle of the Pituitary Body.-Houghton and Merrill have made experiments on this subject. They find that the explanation of the increased urinary flow in anæsthetized animals depends chiefly on the increase in blood pressure produced by the intravenous injection of the adrenalin solution or the pituitary extract in solution rather than on a specific action on the secreting cells of the kidney. It is possible, however, that a specific action on the kidneys occurs, but if so it is less marked than in the case of the one per cent. saline solution. Microscopical observation of the perfused kidney indicated that there was considerable enlargement of the organ while the experiments were being carried out. This would assist in the more rapid secretion of urine, especially if accompanied by increased pressure, but, as just stated, there is not the same degree of relaxation or dilatation of the blood vessels in the kidney as follows the perfusion with the saline itself. This is as we would expect, since experiments on the web of the frog, on the inflamed conjunctiva of the rabbit, and other animals show positively that the pituitary extract does narrow the caliber of the arterioles. If the pituitary extract possesses, as Shafer believes, the specific secretory effect, it would seem that it should manifest itself by greatly increased flow of urine when brought in contact with the secretory cells of the kidney. If it does have this pecific action it has it to a much less degree than sodium chloride itself.

8. The Treatment of Tuberculosis by the Administration of Mercury.-Wright adds interestine data to his former paper (United States Naval Medica' Bulletin, April, and New York Medical Journal, August 29, 1908). He believes that mercurv acts in two ways: First, as a tonic, increasing the vitality of the cellular elements of the various organs and tissues, and, second, in rendering the blood bactericidal, producing an antitor inc therein.

which has a direct destructive action on the tubercle bacillus. This action of mercury is cumulative and lasting, and the immunity conferred by the early doses, plus the resistance to the disease developed by the increased cellular vitality, places the patient in such condition that as treatment is continued smaller doses of mercury are required to obtain the desired results. If we continue to give the improving patient the same dose of mercury on which he was first placed and began to improve we shall sooner or later notice, first, a rise in temperature, and, second, a loss of weight. Should these signs be passed unnoticed, it is probable that more or less serious damage would result; possibly an active general cellular degeneration, including the cellular elements of the blood, would occur, resulting in more or less permanent damage to the patient, if not a rapid decline and death. It is only by close observation of each individual patient that the original and succeeding dosage can be determined. The drug should never be pushed to the point of salivation. His experience with this method of treatment has shown him that the maximum dosage for the original series of injections cannot be carried much beyond thirty injections without producing the conditions mentioned, and that after a period of rest, on resuming the injections, the dose carried through the second series of injections must be reduced. His routine, therefore, has been developed by experience as follows: One injection of hydrargyrum succinimidum, grain 1/5, is given every other day until thirty injections have been given. Then injections are discontinued and potassium iodide, grain iii to grain x, is given, well diluted with water, one half hour after meals for two weeks. Then potassium iodide is discontinued and no medication is given for one week. Injections are then resumed as follows: One injection every other day until thirty injections have been given, on alternating injection days giving hydrargyrum succinimidum, grain 1/5 and grain 1/10, respectively. After the thirtieth injection the same course of potassium iodide is given as followed the first series of injections; then a week free from medication. jections are then resumed, again the succinimide, grain 1/10, being given every other day until thirty injections have been given. By the end of this third series experience will direct any necessary further treatment. These recommendations for dosage are not to be considered absolute, but only a guide. Close observation of each individual patient must fix the dose of the first series of injections. At times the initial injection will produce a slight febrile reaction, after which the temperature should fall to what it was prior to the injection.

MEDICAL RECORD

The Distinction of Outbreaks of Typhoid Fever Due to Infection by Water, Milk, Flies, and Contacts, By John Anderson.

Rocky Violetian Spotted Fever, with Report of a Case,

Impressions Derived from a Visit to the Warm Springs of Virginia.

Cholecystris, with Suggestions for the Prevention of Gallstones,

A Case of Syringomyelia, Suggesting a Possible Relationship with an Acute Cerebrospinal Meningitis Fighteen Years Ago.

By I. S Manson.

I. The Distinction of Outbreaks of Typhoid Fever Due to Infection by Water, Milk, Flies, and Contacts.-Anderson says that the striking characteristics of outbreaks of typhoid fever due to water are: 1. General distribution of cases throughout the area supplied by a particular water. The incidence of cases is independent of social conditions, occupation, and age, except that very young children as a rule are not affected in equal proportion to other ages, due to the difference, perhaps, in susceptibility and to taking less water. 2. Explosive onset of the outbreak. 3. Seasonal prevalence; spring or late winter. Outbreaks of typhoid due to infection of a water supply previously good usually occur in the late winter or spring. This is due to the fact that infected discharges are thrown on the frozen ground, and when thaws or floods come the infection is suddenly washed into the stream. 4. Comparative freedom from the disease of persons not using the suspected water. When there is more than one water supply or where persons use pure bottled waters or boil the water, the comparative freedom of such persons from the disease is striking. 7. Bacteriological and chemical examination reveals evidences of pollution. While it is practically hopeless to expect to find the typhoid bacillus in water, still the finding of Bacillus coli in small amounts of water, and chemical evidences of pollution are additional evidence against the water. 8. Exclusion of all other probable causes. This means the exclusion of milk, food, contact, fly transmission, and other possible sources of infection. The following points would indicate very strongly that the infection was being introduced through the milk: 1. Sudden outbreak of an unusual number of cases, followed by a rapid decline. The outbreak is frequently sudden in its onset, a large number of cases occurring on a certain milk route within a few days. If the infection is introduced only once, as by flies, there is a sudden rise followed by a sudden decline in the number of cases. If there is a continuance of the infection, as from a bacillus carrier, the onset may be more gradual and the decline will be delayed. 2. The appearance of an unusual number of cases among the customers of a certain dairy. The appearance of an unusual number of cases without a general increase elsewhere on the route of a dairy should at once direct especial attention to that milk. 3. Unusual incidence of cases among users of milk. It will be found that there is an unusual prevalence of typhoid fever among the users of milk; the nonconsumers escape or secondary cases develop. As women and children generally use more milk than men an unusual prevalence of the disease among them is a common feature of milk borne outbreaks. Those families on the suspected route who make a practice of pasteurizing their milk escape, except from infection as secondary cases. 4. More cases among the well to do than among the poor. In a milk outbreak there are usually more cases among the well off, due to the fact that they are more able to buy milk and use it in larger quantities than the poor, while in fly borne outbreaks the poor and those living under insanitary conditions are more often attacked. 5. The finding of the typhoid bacillus in the suspected milk. The great part

played by flies in the transmission of typhoid fever was first emphasized in the masterly Report on the Origin and Spread of Typhoid Fever in United States Military Camps during the Spanish War, by Reed, Vaughan, and Shakespeare. They concluded that "flies were undoubtedly the most active agents in the spread of typhoid fever. Flies alternately visited and fed on the infected fæcal matter and the food in the mess tents. More than once it happened when lime had been scattered over the fæcal matter in the pits, flies with their feet covered with lime were seen walking over the food. Typhoid fever was much less frequent among members of messes who had their mess tents screened than it was among those who took no such precautions. Typhoid fever gradually died out in the fall of 1898 in the camps at Knoxville and Meade with the disappearance of the fly, and this occurred at a time of year when in civil practice typhoid fever is generally on the increase."

4. Cholecystitis .- Bettmann says that during the attack of cholecystitis the patient should rest in bed and should have warm Priessnitz compresses over the upper half of the abdomen. Opiates should be given to relieve pain if necessary. The diet should be exceedingly limited during the first few days, and all cathartic drugs are contraindicated. After the swelling of the gallbladder has subsided and the local soreness has disappeared, the patient may be out of bed most of the day. The diet should consist largely of cereals, meat, simple vegetables. bread, and butter. Alcoholic drinks, acid foods, and fruits should be prohibited. The use of salines should be begun early. Sodium sulphate, sodium phosphate, sodium bicarbonate, and sodium salicylate may be given in various mixtures. They are best administered dissolved in plenty of hot water, one half to one hour before each meal. He does not believe there is any special virtue in sodium salicylate, not possessed by the other drugs mentioned; nor does he think it advisable for the patient to eat more than the three regular meals a day. It is possible that urotropin or other drugs may prove to have unusual value. Under this simple treatment, continued for months, or if need be for years, patients are given an excellent chance to escape recurrence of inflammation, and, in fact, all symptoms referable to the gallbladder.

BRITISH MEDICAL JOURNAL.

November 14, 1908.

Observations on Arteries, Normal and Pathological,
By J. A. MACWILLIAM and A. H. MACKIE.
The Normal Venous Pulse,
By T. LEWIS.
A Case of Adams-Stokes Syndrome Observed for more
than Eight Years,
By W. J. TURRELL and A. G. GIBSON.
Plumbic Ocular Neuritis in Queensland Children,
By J. L. GIBSON.
A Note on the Influence of the Neurous Syntagenous.

A Note on the Influence of the Nervous System upon Infective Processes, By G. L. CHEATLE. Mental Cripples, By G. H. SAVAGE.

Mental Cripples,
Tuberculosis in Line Workers,
By W. J. B. Selkirk.

1. Arteries.-MacWilliam and Mackie have studied human arteries obtained at post mortem examinations, amputations, etc., with special reference

to the behavior of the vessels when cut across and measured. In the majority of cases in which dissolution has been a gradual process of an exhausting nature, preceded by high temperature, the arteries have shown no sign of contractility when coming from the autopsy twelve to twenty-four hours after death. They present all the characteristics of dead relaxed arteries. But in many instances, especially in cases of relatively sudden death, the vitality of the arteries may not be so readily lost, and contractility may persist for very considerable periods. The same is true in arteries obtained from amputated limbs.

LANCET.

November 14, 1908.

The Clinical Examination of the Urine, with Especial Reference to the Estimation of Urea,

The Treatment of Acute Inflammatory Conditions by Bier's Hyperæmia, By G. B. BUCHANAN. Novel Methods of Operation in the Removal of Ma-lignant Tumors.

By H. Manders.

lignant Tumors, Recent Investigations into the Pathology and Treatment of General Paralysis and Tabes Dorsalis,

By W. F. Robertson.

A Note on La Typho-Bacillose,

By L. LANDOUZY.

A Note on La Typho-Bacillose, By L. LANDOUZY.
Two Interesting Cases of Intussusception,
By R. F. Jowers.

Motoring Notes: The Olympia Motoring Exhibition, Ву С. Т. W. Hirsch.

r. Urine Examination .- Foxwell holds that the important quantitative determinations in the examination of urine are specific gravity, amount passed in twenty-four hours, percentage of urea, and amount of urea by weight. Testing the acidity is not of much assistance in estimating functional capacity. The specific gravity is more important; the persistence below 1.012 is good evidence of marked permanent renal inadequacy. The total quantity of urine passed is even more important than weight. Persistent increase to sixty ounces or more in the twenty-four hours is indicative of renal fibrosis, just as a persistent specific gravity of below Urea is the important substance to determine when investigating the condition of the nitrogenous metabolism of the body, which is the metabolism most frequently defective, and the failure of which causes the vast majority of the ailments and degenerations to which life is liable. The percentage of urea varies widely in health, but an average of anything below 1.4 per cent. during ten to twenty days nearly always indicates renal damage. The average daily output of urea of healthy kid-· neys should be about 480 grains for men, 380 grains for women. A daily output of 250 grains for a man and 200 grains for a woman are the lowest amounts on which they can respectively permanently exist without losing ground. Stable existence, at however low a level, requires this much excretion of nitrogeneous waste; people so living would have fragile lives and be unable to stand any severe strain. Summing up, the writer puts 1.012 (specific gravity), 50 ounces (amount in twenty-four hours), 1.4 per cent. (urea), and 310 grains (urea in twenty-four hours) as the lowest average analysis which would enable a man to go about doing a moderate amount of work in the world. 1.011, 45, 1.2, 238 would be the lowest which would enable him to get up and do some light work which did not necessitate regular attendance, for he would often be in-

valided. An analysis as low as 1.010, 40, 1.0, 175 would necessarily confine him to bed; or, if he got up, his manufacture of waste material would be greater than his removal of it, so that often severe breakdowns would occur during which his nitrogenous intake would have to be of the smallest to enable equilibrium to be once more established. The above figures are for men; women would have a smaller excretion, but the decrease is shown not in the strength of the solution, but rather in its amount. The female kidney does work of equal quality, but smaller quantity. There is nothing more striking than this maintenance of quality by the healthy organ. If there is less urea to be excreted, then the quantity of urine is lessened, not the strength of the solution. Hence the urea percentage and the specific gravity are the two important factors which indicate the degree of kidney damage. But a patient with damaged kidneys promptly calls upon the heart for aid, and his strength depends upon the functioning power of both these organs and not upon the kidneys alone. The increased cardiac action, by increasing the flow of blood through the kidneys, will enable these to secrete a greater quantity in any given time and so make up for the lessened quality.

"Fulguration" for Malignant Tumors .--Manders states that the combined surgical and electrical treatment for cancer, recently called "fulguration" (or treatment by lightning) has created lately a considerable and increasing interest on the Continent of Europe. The novelty in "fulguration" consists in the application of oscillatory electricity in combination with actual surgery; there is neither novelty in the technique nor in the apparatus used. The operation is divided into four stages: I. The surgeon divides the tissues and lays bare the neoplastic masses without separating them. 2. The tumor is fulgurated by the strongest, thickest, hottest sparks, so as to produce the greatest possible effect in the shortest time. The duration of this stage is from a few minutes up to ten. 3. The surgeon excises the growth. 4. Fulguration is again repeated. This is the most interesting and important stage, and lasts about forty-five minutes. The tissues become ischæmic and the cut capillaries cease to bleed. No actual scab is formed, but a fine layer of clot, which eventually becomes detached, as happens in burns. The wound is then closed, provided with thorough drainage, and covered with gauze plentifully sprinkled with sodium biborate, over which is placed a large pad of cotton wool. dressing, which is changed after twenty-four hours, is often very painful. Cicatrization is rapid after the slough separates, but complete healing is slower than after an ordinary surgical operation. If fulguration has in any way reduced to a minimum the recurrence of cancer after operation the combined operation is fully justifiable and must be regarded as a distinct gain in treatment. The demerits of the new operation are: (1) That the length of time the patient must be kept under anæsthesia is much prolonged; (2) that the anæsthetic must be chloroform, as the much more volatile ether is apt to catch alight from the sparks; (3) that anæsthesia, besides being prolonged, must be deep, because the fulguration, especially in the second stage of operation,

when the biphase method is used, is very painful; (4) the disadvantage during the operation of having to change from one instrumentation to another; (5) the difficulty of managing and controlling a rush of violent sparks; and to these must be added (6) the uncertainty of being able to reach every part of the incised area with a series of sparks which are not continuous, but intermittent. All of the disadvantages enumerated above may be obviated and greater security attained by an entirely novel method of operating, to which the writer, as its originator, has given the name "electroscision." The essence of the technique is the utilization of the continuous and undamped oscillations of electricity instead of the intermittent and rapidly damped trains of oscillations employed in the production of fulguration. The principal difference between the two is that in fulguration the spark really resembles forked lightning in its discharge, for a violent stream of sparks springs from the electrode to the most salient points opposed to it, so that it is quite possible for a germ lying in a sulcus, or even well in the open, to escape its destructive influence.

General Paralysis and Locomotor Ataxia. -Robertson and his fellow workers have found that bacilli of the diphtheroid group, possessing prominent metachromatic granules, can be shown to be invading the tissues in all cases of advancing general paralysis and tabes dorsalis. The chief seats of invasion or of infective foci are the nasopharyngeal and oral mucosæ in cases of general paralysis and the genitourinary tract in cases of locomotor ataxia. Evidence of such invasion has been obtained by the direct examination of scrapings from the surface of these mucous membranes. Confirmatory results have been yielded by bacteriological examination. Examination of the centrifuge deposit from the cerebrospinal fluid removed by lumbar puncture has demonstrated the bacilli in several instances, and in two cases the deposit has yielded a pure culture of a similar bacillus. Growths of diphtheroid bacilli have been obtained from the brain post mortem in numerous cases of general paralysis, and the organisms have also been demonstrated in microscopical sections of the brain. Two species of the diphtheroid bacilli isolated from cases of general paralysis or of locomotor ataxia are often virulent to rats and mice, whilst being innocuous to guinea pigs. Some of the rats that have succumbed have shown the cerebral changes characteristic of general paralysis, while others have suffered from acute nervous symptoms and have shown marked changes in the cortical and spinal nerve cells. Treatment of cases of general paralysis and locomotor ataxia with an antibacterial serum, prepared in the sheep by immunization with these special diphtheroid bacilli, has been attended in many cases by distinct arrest of the symptoms, indicative of active progression of the disease. Secondary bacterial infections are extremely prone to occur in the specific infective foci primarily localized in the nasopharyngeal, oral, and genitourinary mucosæ. The microorganisms especially concerned are streptococci, staphylococci, and certain diplococci. Evidence of mixed infection (pyorrhœa alveolaris) may be seen in the condition of the gums in most cases of general paralysis. In such cases not only has the primary diphtheroid

infection to be treated, but also the secondary infection. Syphilis plays an important part in the pathogenesis of general paraylsis, acting mainly by damaging the nasal mucosa in such a way as to weaken its power of resistance to certain forms of bacterial attack. As regards locomotor ataxia there is good reason to believe that as a predisposing factor gonorrheea is of greater importance than syphilis. Locomotor ataxia, if not complicated by serious secondary infections, can be combated by serious and vaccine methods. Under such treatment the lightning pains may disappear, the progress of the disease be arrested, and the general health of the patients undergo remarkable improvement.

5. "Typho Bacillose"; a Form of Tuberculosis.—Landouzy, under the title "typho bacillose, describes a type of acute tuberculosis which he holds to be anatomically and clinically distinct from the other forms of bacillary septicæmia due to the tubercle bacillus. In addition to caseous bronchopneumonia (phthisis florida) and acute miliary tuberculosis, the bacillary infection may appear as a new and distinct type of septicæmia. It is characterized exclusively by a typhoid condition, with continued fever and enlarged spleen, but no signs of visceral lesions. It strikingly resembles typhoid fever, but has the following differences. The temperature curve is very irregular, with considerable oscillations and with irregularities from day to day, and from week to week. There is also a want of correspondence between pulse and temperature, the pulse being usually much faster than in typhoid fever. And finally there is absence of symptoms of visceral lesions, of pharyngeal and bronchitic catarrh, of intestinal catarrh or constipation, and, most important, absence of all rash. When on rare occasions this form of tuberculosis ends fatally after two, three, or four weeks, the autopsy shows only the congestive and degenerative lesions common to all general septicæmias, with here and there pin head granulations, quite insufficient in size or number to set up local troubles. As distinguishing the condition from acute miliary tuberculosis there is no tuberculous ulceration in the organs, and local symptoms—pulmonary, cerebrospinal, or abdominal—are absent. While miliary tuberculosis is always rapidly fatal, typho bacillose often ends in recovery or, at any rate, in the abatement of the acute general infection. In the great majority of cases, after three or four weeks of continued fever, accompanied by more or less marked prostration leading up to the typhoid state, convalescence sets in. But, generally speaking, recovery is not complete, the patient does not get back his "go," he does not display the good appetite of so many convalescents from typhoid fever, and emaciation persists. At the end of some weeks or months, it may be, gradually or suddenly signs of local tuberculosis appear, generally in the lung or pleura, but in children fairly often in the meninges. Sometimes the convalescence appears to be entirely complete and yet, suddenly or gradually there appear later proofs of a local tuberculous condition. Cases of definite and complete recovery are very rare. The subjects of typho bacillose after they have recovered from this condition nearly always live in a condition of latent tuberculosis, and weeks, months, or even years after the

initial acute septicæmia that disease becomes manifest in them. Typhoid and paratyphoid fevers can be distinguished by means of the agglutination reaction and blood cultures, while on the other hand the inoculation of guinea pigs with blood collected from a vein, the serum reaction of Arloing, the ophthalmic reaction of Calmette, and Jousset's inoscopy afford certain evidence of a septicæmia due to the tubercle bacillus. Experiment has been able to reproduce the condition in animals with its different anatomical manifestations, its symptomatology, and clinical course. In view of all these proofs from the laboratory and from clinical experience, the writer holds that there can no longer be any doubt as to the existence of the morbid entity which he has described.

LA PRESSE MEDICALE

Octuber 10, 1908.

Treatment of Congenital Luxation of the Hip,

By DUCROQUET. Circumscribed Spinal Meningitis and False Tumors of By R. ROMME. the Spinal Cord.

Congenital Luxation of the Hip .- Ducroquet discusses the anatomical conditions present in congenital luxation of the hip, the manipulation by which reduction is to be accomplished, and the means of maintaining the maximum stability. The prognosis he considers to be largely dependent on the form of luxation; in anterior luxation the reduction is easy, in posterior luxation reduction is difficult and sometimes impossible.

October 14, 1908.

Evolution and Treatment of Tuberculosis in Syphilitics, By E. SERGENT.

Tuberculosis in Syphilitics.—Sergent discusses the ætiological and pathogenic conditions that surround the origin of the association of these two diseases, the ways in which they are associated, the general prognosis, and the treatment. He declares finally that untreated or badly treated syphilis aggravates the tuberculosis, while it is not rare to see syphilis properly treated favor the cure of the tuber-The tuberculous syphilitic, if he resists the initial shock of the morbid association, tends toward a fibrous tuberculosis, and his chances of cure are increased by an active, regular, and prolonged mercurial treatment.

LA SEMAINE MEDICALE.

October 14, 1908.

The Formation of the Placenta in Women,

By Professor R. DE Bovis,

Formation of the Placenta.—De Bovis has collated the opinions of a number of writers on this

BERLINER KLINISCHE WOCHENSCHRIFT

Laber 14, 1 08

Lower Monkeys after Inoculation in the Testicle,

An Attempt to Influence Serotherapeutically Chronic Inflammation of the Kidney,
By L. Casper and C. S. Engel.

Ætiology and Therapeutic Attempts in Pernicious An-By REIGHER

Pulmonary Tuberculosis, By Luigi Panicht.
Contribution to the Study of Diabetic Lipoidamia,
By F Factors, and G. Myre Herri.

6. Kurloff's Bodies in the Mononucleated Leucocytes of the Blood of Guinea Pigs and their Protozoic Na-By VINCENZO PATELLA.

A New Invisible Virus, By R. DÖRR.
The Question of Specialists, By Hans Kohn.
Transplantation of Tendons, By August Hildebrandt. By R. Dörr. By Hans Kohn.

1. Syphilide of the Skin in the Lower Monkeys. -Hoffmann and Löhe in their experiments seek to demonstrate the clinical and histological conformity of the symptoms produced by the inoculation of syphilis in these animals with the recognized symptoms of secondary syphilis in man, the presence of the Spirochata pallida, and the inoculability of certain animals. The animals used were two medium sized Cercocabus fuliginosus, the inoculations were made in the left testicle of each, a cutaneous exanthem appeared in each, the living Spirochæta pallida, stained according to Giemsa's method, was found in each, and material taken from one and inoculated into the upper eyelid of a Macacus rhesus induced the appearance of syphilitic symptoms in the latter.

2. Serum Treatment of Chronic Nephritis.-Casper and Engel report the results of serum treatment in eleven cases of chronic nephritis. Injury appeared to have been done in no case, in one the excretion of albumin and casts was permanently stopped, in some it was diminished either permanently or transiently, and in others no change took place. Almost without exception the general condition was improved, and cedema present visibly retro-

graded.

4. Fraenkel's Pneumococcus in the Blood of Persons with Pulmonary Tuberculosis .- Panichi concludes from the study of the blood of four patients that the pneumococcus can circulate in a latent condition in the blood of persons suffering from pulmonary tuberculosis, and that this micro-organism can be found thus circulating in the blood for a long time, even months, before the death of the patient.

6. Kurloff's Bodies.-Patella contends that Kurloff's bodies are true protozoa, belonging to the

7. A New Invisible Virus.—Dörr says that in many warm countries there are peculiar forms of disease which become epidemic during the hot and dry months, disappear during the cold months, and are known by different names in different localities. Whether all these diseases are identical or not he cannot say, but he has been studying the epidemic summer fever of Austria and believes it due to a contagion in the blood, an invisible virus. From the results of his experiments he believes that on the first day of the disease the virus is circulating not only in the blood, but also in the serum; that it soon disappears from the circulation, so that at the end of the second day the blood is avirulent, and that outside the body the virus shows a marked power of resistance, so that it preserves its infectiousness for at least three and a half days.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT

October 13, 1008.

Clinical Casnistics from Practice, Alternating Heart and Its Relations to Continuous Bigeminal Heart, By VON TABORA.

Pneumococcus Meningitis as the Indirect Late Result of an Injury to the Skull.

By Rums.

Holirect Fracture of the Roof of the Orbit and the Shotlike Effects of a Splinter of Bone in the Brain.

By FISCHER.

Operative Treatment of Deformities of the Nasal By KRETSCHMANN. Tenotomy of the Ileopsoas Muscle at the Trochanter
Minor.

By WALZBERG.

By TRAUTMANN. Endemic Malaria in Leipsic, A Case of Exophthalmic Goître Following a Nonpuru-By APELT. lent Thyreoiditis. By BURK.

9. A Case of Acute Recurring Thyreoiditis, By
10. Two Cases of Acute Nonpurulent Thyreoiditis, By SCHWERIN.

II. A Case of Resection of the Hip Joint with Interposition of a Muscular Flap, By AHRENS.

12. A Contribution to Laryngitis Stridula, By RAHNER.

13. A Method for the Representation of Pigments and of their Colorless Stages, with Especial Reference to the Pigments of the Eye and of the Skin, By BIZZOZERO.

14. The Action of Roemer's Pneumococcus Serum in Croupous Pneumonia, with Special Reference to the By MAY. Leucocytes (Concluded), By SUDHOFF. 15. Obituary of Albrecht Haller, 16. The History of Appendicular Inflammation, By Doll.

Clinical Casuistics from Practice.—Erb writes with regard to syringomyelia and dystrophy, and relates an extremely interesting case. The pa-'tient was an unmarried woman, forty-six years of age, who had suffered from childhood with a peculiar trouble in walking and had been attacked slowly, when thirty-six years old, with a disturbance in the lower limbs, consisting of an increasing uncertainty and weakness with emaciation of the legs. The sphincters were unaffected, and the sensibility apparently was affected slightly if at all. The rest of the body with all its functions remained normal. The objective condition presented different groups of symptoms in unique combination: 1, Paresis of the legs, the left more than the right, with increased tendon reflexes and distinct Babinski's symptom, but without muscular tension, a symptom complex to be referred to an organic disease of the pyramidal tracts of the lowest part of the dorsal cord. 2, Atrophy of the muscles of the legs to different degrees with clearly demonstrable partial degeneration reaction, but of slight development. This indicated an affection of the gray anterior columns in the lower portion of the lumhar portion of the cord. 3, Dissociated losses of sensation, lowered sensation for pain and temperature with preserved sensation of touch. showed an affection of the central gray substance, certainly of the gray posterior columns and perhaps of the white posterior cords high in the dorsal portion of the cord. 4, Moderate vasomotor disturbances and lowering of the perspiratory secretion. Affection of the gray substance without marked disturbances of the skin, joints, and bones. There were marked fluctuations in the intensity of all symptoms, and after prolonged treatment a slight improvement occurred. What is the diagnosis? The author excludes osteomalacia, dystrophia muscularis progressiva, spastic spinal paralysis, myelitis transversa dorsalis, multiple sclerosis, extramedullary or intramedullary tumors, spinal amyotrophy, amyotrophic lateral sclerosis, chronic anterior poliomyelitis, neurotic muscular atrophy, and other diseases until he leaves only the possibility of a syringomyelia, localized in the lower part of the body. If the combination of symptoms was located in the upper part of the body there would be little question that this was the diagnosis. Therefore he thinks that such cases should be classed as syringomyelia in-

ferior, and the much more frequently met with iorms of cervical and bulbar syringomyelia as syringomyelia superior.

3. Pneumococcus Meningitis as the Indirect Late Result of an Injury to the Skull.-Rubin reports a case in which a young man received an injury to the head and died five years later of a pneumococcic meningitis. From the clinical course of the case he tries to demonstrate an ætiological connection between the traumatism and the menin-

THE PRACTITIONER

October, 1908.

On the Preoperative Treatment of Nonmalignant Gason the Preoperative Treatment of Normangiant Gastric Disease,

Fracture and Refracture of the Patella with some
Points in the Treatment,

By E. M. Corner. Points in the Treatment, Fracture of the Metacarpal Bones,

A Note on the Necessity of End to End Apposition in Fractures of Long Bones, By H. T. Grav. Color Vision and Its Relation to the Other Senses, Review on Venereal Diseases, By G. A. STEPHENS.

By J. A. MACKENZIE.

BY J.

Review on Venereal Diseases,

A Review of Recent Neurological Literature, By W. HARRIS.

Ap Account of the Theory and Employment of Bier's Method of Treatment by Passive Congestion in Cases of Rheumatoid Arthritis, Tubercle, Sepsis, and Various Other Conditions,

9. The General Practitioner and Deaf Mutism, By D. M. MACKAY.

1. On the Preoperative Treatment of Nonmalignant Gastric Disease.—Barker thinks that, up to a certain point, the preoperative treatment of the disease in question is within the domain of the family physician. When an operation is decided upon the surgeon should be responsible for the preparatory measures. It is admitted that many operations on the stomach are done on insufficient grounds, and that the results desired do not always follow even carefully designed and executed procedures. In not a few cases the patient is at fault in insisting upon an operation when suitable measures carried out by his physician would result in a cure without operation. Patients with persistent gastric trouble should be kept in bed, their mouth and throat should be sterilized, and their food should be well cooked and of simple quality. Great stress is laid upon lavage of the stomach, and as to drugs, laxatives, bismuth and betanaphtol are mentioned. If such measures do not help the patient the way is clear for operative measures.

2. Fracture and Refracture of the Patella .-Corner adduces the following factors which will assist in the recovery of perfect joint movement after fracture, and obviate the danger of refracture. I. Early operation, within twelve hours from the receipt of the injury. 2. Blood clot must be thoroughly removed from the joint, but it is not so great a necessity from between the fragments. 3. The bone fragments should be sutured with wire or silk, the torn lateral expansions on either side of the patella being also sutured. The former may be done subcutaneously, the latter through lateral incisions. 4. Dressings of gauze and collodion should be used, without splint or flexion of the limb. Gentle massage should be begun a day or two after operation, and slowly increased. The patella should be moved laterally on the femur. 6. All wounds should heal by first intention. 7. The weight should not be placed upon the foot until full movement has returned in the knee joint. A scar over the front of the patella must be avoided if possible.

3. Fracture of the Metacarpal Bones.-Mackenzie states that the x ray has demonstrated the comparative frequency of this injury. This is especially noteworthy in boys under eighteen, in whom there is frequently a separation of the epiphysis due to direct violence. Cases of fracture from indirect violence are, however, not unusual. The diagnosis may be difficult without the x ray, especially when there is much swelling and much tenderness. The points to be observed in diagnosis are crepitus, unnatural mobility, displacement, ecchymosis, and swelling. The prognosis depends very largely upon the intelligence with which the treatment is carried out. Beck's treatment is recommended, which consists in the use of a coaptation splint of short pieces of drainage tube of suitable size, applied on either side of the fractured bone on the dorsum of the hand, and held in place by a strip of adhesive plaster

4. The Necessity for End to End Apposition in Fractures of Long Bones.-Gray believes that such apposition is desirable in all cases to obtain a useful limb, and is absolutely necessary if a perfect limb is required. Primary union is as desirable in bones as it is in soft parts; healing by callus is analogous to healing by granulation. Primary union is also the quicker process, and the resulting scar is firmer. Diseases of scars are almost exclusively the result of union by second intention. Painful scar is practically nonexistent after primary union. Applying the principles of healing in the soft parts to the repair of bones, union by direct apposition is quicker and firmer than in healing by callus. Excessive and exuberant callus, chondroma, sarcoma, etc., at the site of fractures are comparable with keloid, sarcoma, epithelioma, etc., arising in scars of soft parts. Callus formation in excess also may mean very troublesome involvement of nerves.

8. Bier's Method of Passive Congestion .-Wakefield states that Bier recommends both active hyperæmia and passive congestion, according to the condition to be treated. He first used passive congestion for tubercle in 1890, being influenced by the frequency of phthisis in those whose lungs were anæmic from stenosis of the pulmonary cardiac orifice, or other cause. Hyperæmia and inflammation are beneficial, to a certain extent, being Nature's reaction to and method of counteracting injurious influences. Conditions brought about by congestion are relief of pain, abatement of fever, prevention of stiffness, destruction of bacteria, promotion of the absorption of fluids, resolution of thickenings in joints and tendons, and a certain degree of trophic action. In some cases it will produce a decidedly beneficial autoinoculation. It may be brought about by means of a bandage proximal to the area to be congested or by a suction apparatus. Before treatment by congestion is commenced it is most important to determine the nature of the discase and to vary the technique accordingly. A proper method of congestion in one case might be very improper in another.

o. The General Practitioner and Deaf Mutism. Lade that, this problem is suitable for the

general practitioner rather than the aural surgeon. Deaf mutism is incurable, but it is often preventable. There may be total deaf mutism in which there is no response to any auditory sensation, and partial deaf mutism, in which the patient can distinguish noises and even words. Destructive changes are present in the structure of the middle ear, and these may extend to the internal ear. They may be so extensive as to obliterate the cavities of the labyrinth. Fifty per cent. of the cases are due to congenital causes and an equal number are acquired. Two facts in the congenital variety are noteworthy, heredity and consanguinity of parents. This would indicate that marriage among the deaf is to be discouraged. In acquired deaf mutism brain diseases form the most important causative element, especially meningitis. Next in importance are the acute infectious diseases, especially scarlet fever, measles, and diphtheria. Constitutional diseases, especially syphilis, are occasionally responsible.

AMERICAN JOURNAL OF OBSTETRICS. November, 1908.

Solving the Problem of Obstetrics, By E. G. ZINKE. By C. M. REES. By A. M. VANCE.

Arteriosclerosis of the Uterus,
Hysteria as the Surgeon Sees it,
Comparative Merits of Abdominal Cæliotomy and
Colpotomy in the Treatment of Intrapelvic Abscess,
By W. S. SMITH.

By W. S. SMITH.

The Mobility of the Patient after Laparatomy,
By W. B. CHASE.

Ectopic Gestation with Viable Child; with Report of
Three Cases,
Some Experiences with Extrauterine Pregnancy and
Report of Cases,
Ectopic Gestation,
Acute Pancreatitis,
Abscess of Gaertner's Canal,
Abscess of Gaertner's Canal,
By M. S. SMITH.
By W. S. SMITH.
By C. BASE.
By C. L. BONIFIELD.
By L. FRANK.
By M. S. TATE.
Section, with Report

9. Acute Pancreatitis,
10. Abscess of Gaertner's Canal,
11. The Present Status of Cæsarean Section, with Report
of Five Cases,
12. The Development of the Human Ovum during the
First Eight Weeks of Pregnancy,
By J. F. Erdmann,
By

13. Intrangamentous Finitions, 14. Uterine Fibroids Complicating Pregnancy, Cases, Specimens, 15. Myoma of the Cervix Uteri, By F. RIDER. 16. Subdiaphragmatic Abscess, with Report of Cases,

17. Fevers of Intestinal Origin in Children,
18. Public School Education,
19. An Unusual Type of Acute Nephritis in Children,
19. By J. L. Morse. By J. W. KEEFE.

20. Recent Diagnostic Methods in Children,

21. A Plan of Dealing with Atrophic Infants, By H. D. CHAPIN. By L. E. HOLT.

22. Fresh Air in the Treatment of Disease,
By W. P. Northrup.

1. Solving the Problem of Obstetrics,—Zinke thinks the time has come when expectant spontaneous labor, hebosteotomy, and Cæsarean section will take the place of craniotomy, induction of premature labor, prophylactic version, and the high forceps in cases of narrow or contracted pelvis. Hebosteotomy is suitable for fifteen per cent. of such cases and Cæsarean section for five per cent. Hebosteotomy and Dührssen's operation, in the interest of the child, are also of life saving character for the mother. These operations are preferable to the compromise operations, including balloon and metal dilatation. Vaginal hysterotomy should take the place of accouchement force, the repeated application of the tampon and metal dilatation. compromise procedures should be limited entirely

to cases in which infection has occurred, the presence of sepsis excluding hebosteotomy and Cæsarean section. Women who are threatened with long and difficult labor from any cause should be taken to a suitable hospital for their confinement.

2. Arteriosclerosis of the Uterus.—Rees desires to emphasize the following facts: I. A diagnosis of arteriosclerosis of the uterus is difficult to make and can only be made in cases in which it is possible to exclude all other causes of hæmorrhage from the uterus, and by microscopical examination of scrapings of the uterus in which sclerosed capillaries are found, or finally from sections of such an uterus after its removal. 2. This condition as a cause of uterine hæmorrhage in women between the ages of forty and fifty, and among those who have borne children, is more important than has generally been determined. 3. In a fair proportion of cases the hæmorrhages from the uterus are in themselves sufficient to endanger the life of a woman, and are an indication for hysterectomy. 4. Hysterectomy is justified, in view of the uncertainty of diagnosis, even after examinations of a section of the uterus, and scrapings from the same, though there may be no evidence of malignancy, in women between the ages of forty and fifty who have borne children, and who suffer with frequently recurring hæmorrhages.

5. The Mobility of the Patient after Laparotomy.-Chase states that the subject includes both The unavoidable passive and voluntary exercise. annoyance and pain which must always come after operation, to a greater or lesser degree emphasize the obligation of the surgeon to minimize such disturbance. Prolonged experience has demonstrated the needlessness and injury of the immobility, active and passive, which was formerly considered essential after operations. Such movements of the body as will tend to vary the monotony of rest in one position are no longer considered harmful, but the extreme of reaction is reached when a patient is allowed to sit up the day after an operation, to get out of bed on the day following, and to go home within a week. Perfect coaptation of wound edges, rest, and freedom from infections are the essentials for prompt recovery. Whatever disturbs these conditions is harmful. Firm healing of an abdominal wound requires at least two weeks, and whatever tends to disturb the process within that time endangers the result. The author doubts whether rest in the supine position for such a period could favor thrombosis, embolism, or phlebitis, as has been asserted.

Proceedings of Societies.

SINTH INTERNATIONAL CONGRESS ON TUBER-CULOSIS.

Held in Washington, D. C., September 28, 20, and 30, and October 1, 2, and 3, 1908.

(Continued from page 1008.)

The Pathology of Tuberculous Peritonitis.— Dr. WALTER ALTSCHUL, of Prague, said that he had found two hundred and ninety-nine cases of tuberculous peritonitis among 10,322 autopsy reports from the Deutsche Pathologische Institut of

Prag. It was formerly believed that all cases of tuberculous peritonitis originated in the female genitalia or in the intestine. Infection might be simultaneous and independent in the female genitalia and in the peritonaum, or the genital infection might be secondary to the peritoneal infection, as indicated by cases of tuberculosis of the abdominal end of the tube, and cases of recent uterine tuberculosis in which it could be proved that the infection had reached the uterus from an old tubal focus. Although the percentage of cases was greater among females than among males, the difference was not sufficient to indicate a greater frequency among women. Among the cases forming the basis of his communication, the author found that one hundred and fifty-six, or fifty-two per cent., were in women, and that only fifty-two of them showed signs of tuberculosis of the genital organs. intestine could not be regarded as the sole point of origin of tuberculous peritonitis, as there were many cases without intestinal involvement. peribronchial lymph nodes naturally suggested themselves as sources of infection, which might spread by the blood or by the lymph channels. the bacilli were carried by the way of the blood paths they would be arrested in the pulmonary capillaries and set up a pulmonary tuberculosis; but there were many cases of tuberculous peritonitis without pulmonary involvement. The fact that the peritonæum usually escaped in miliary tuberculosis was also against the blood path as the route of infection in this form of tuberculous disease. By exclusion, therefore, he arrived at the lymph channels as the route of infection. The communication between the pleural cavities and the peritoneal cavity had recently been demonstrated by Sappey and Küttner, and the latter author found that the lymph passed both ways through these vessels. The path of infection, then, would be from the peribronchial lymph nodes through the perforating lymphatics of the diaphragm, into the peritoneal cavity, chiefly to the retroperitoneal lymph nodes, which were almost always involved in tuberculous peritonitis. Cases in which the only tuberculous lesions to be found were those in the peribronchial lymph nodes. and the retroperitoneal lymph nodes proved that the infection did actually travel by that path. The tubercle bacilli might also pass through the diaphragm and produce a localized tuberculosis of the lower surface of that membrane, as sometimes occurred in early cases.

Tendeloo was of the opinion that the lymph stream could only travel from the thoracic cavity toward the peritoneal cavity when the intrathoracic pressure was greater, and he gave as one of the reasons the presence of adhesions binding the lung to the chest wall, and particularly to the diaphragm. In the material which the author examined, and which amounted to more than 10,000 autopsies, two hundred and ninety-nine cases of tuberculous peritonitis showed pleural adhesions in one hundred and twenty-nine instances (adhesion of only one pleura in twenty-six cases); in fifty-four cases the adhesion was limited to the apex; in thirty-three of the remaining forty-five cases the lungs were free, and in thirteen adhesions were not men-

tioned, so that it might be admitted that the lungs were free in these cases also. It followed, therefore, that adhesions of any extent were present in only two thirds of the cases; hence Tendeloo's theory did not apply to all cases. The author found that in those cases of so called pure tuberculous peritonitis, when the bronchial glands only were involved outside of the peritonæum, the lungs were usually not adherent. He studied 1,023 autopsy reports of tuberculous subjects with this point in view, and found that of the two hundred and eighty-one cases which showed tuberculosis of the abdominal organs, one hundred and ninety, or 67.5 per cent., had pleural adhesions; fifty-five, or 19.5 per cent., had apical adhesions; and thirty-six, or 13 per cent., were free. In the seven hundred and forty-two cases without involvement of the abdominal organs, four hundred and forty-one, or 59.5 per cent., had adhesions; two hundred and nine, or 28 per cent., apical adhesions: and in ninety-two, or 12.5 per cent., the lungs were free. Hence the percentage of cases without pleural adhesions was slightly higher when the abdominal organs were involved than in cases without abdominal tuberculosis. The author suggested the following explanation: In tuberculosis of the peribronchial glands the healing process might begin in the proximal or in the distal portion. If the infection spread (which was of course not always the case), the manner in which the healing took place was of some importance. If recovery began in the distal portion the bacilli could escape only into the thoracic duct, i. e., into the circulation. The bacilli entered the capillaries of the lung, where they were arrested and produced a pulmonary tuberculosis. If healing began in the proximal portion, access to the circula-tion was blocked, and the bacilli were carried in a retrograde direction through the perforating lymphatics of the diaphragm to the peritonæum. If several bronchial glands were affected, it was, of course, possible that healing might begin in the proximal end of some and in the distal portion of others, which would explain those cases in which a severe pulmonary tuberculosis was associated with tuberculous peritonitis, and in which both processes were secondary to disease of the peribronchial lymph glands, although one localization might appear later than the other.

SECTION II.—CLINICAL STUDY AND THERAPY OF BURGULOSIS. SANAJORIA, HOSPITALS, AND DISPENSARIES,

Continued one page 910.1

The Establishment of Dispensaries in Cities and Towns.—Dr. R. W. PHILIP, of Edinburgh. said that a dispensary should be a central institution devoted to the guidance, supervision, and assistance of the tuberculous poor. It should also be an information bureau for advice as to all the different phases of the fight against the disease; a clearing house; and a centre for the supervision of home treatment. The dispensary should be in intimate touch with the public health authorities, the registrar of vital statistics, the persons who had undertaken house investigations, the sanatorium, the hospital for advanced cases, and other institutions in which tuberculosis was treated. There was, in the opinion of the speaker, the greatest necessity for

coordinated effort on the part of all the different bodies that were endeavoring to lessen the incidence of and the mortality from the disease. He described the system which he had inaugurated in Edinburgh, and which was succeeding in bringing all the active bodies into close cooperation.

The Part Played by the Preventorium, or Supporting Dispensary, in the Social Antituberculous Fight.—Dr. A. CALMETTE, of Lille, said that the antituberculous supporting dispensary was essentially an instrument of social preservation against tuberculosis. Its function was not to treat patients; that was the part of sanatoria, hospitals, and medical dispensaries attached to benevolent organizations. Its mission was to seek out, attract, and keep under supervision, by means of an active propaganda, those among the very poor who were peculiarly exposed to tuberculous infection and those who were already infected. It selected curable patients who were suitable for sanatorium treatment; took charge of children who were menaced by or who were already attacked by the bacillus; took care of them or endeavored to cure them by placing them in the country or in seaside establishments; sent patients who were dangerous to their surroundings to isolation hospitals; sterilized dwellings; disinfected and cleaned contaminated linen; and distributed spit cups and antiseptics. In short, it brought about the hygienic education of families through the collaboration of "monitors of hygiene," chosen from among the most capable and authoritative men of the people. The sanatorium was exclusively for patients who were already attacked by the disease, but who were considered to be curable; but the preventorium extended its benefits to the families and the environment of these patients. It was a recruiting agency for academic colonies, for sanatoria, and for hospitals, and was, furthermore, a school of practical hygiene.

The Dispensary Examinations of Tuberculous Families, their Results and their Significance in the Systematic Combat against Tuberculosis.-Dr. A. KAYSERLING, of Berlin, said that the mortality from tuberculosis had been decreased nearly one half in Germany since the discovery of the Bacillus tuberculosis by Koch. The principle upon which this result had been obtained was that of destroying the cause of the disease. This was accomplished by isolating the individual who suffered from the infection and by the use of antiseptics. Dispensaries had also been established for controlling the cases and for destroying the discharges. An individual with advanced tuberculosis was the center of infection, so that he ought to be controlled early in the course of the disease, in order to prevent his case from becoming advanced. He recommended a systematic organization for the fight against tuberculosis by the establishment of stations similar to the dispensaries which had been described so often by so many writers. The dispensary, in his opinion, should be the official point of notification for cases of the disease, and from the dispensary physicians should be sent for the purpose of making an examination of the family of the patient.

The Work of the Chicago Tuberculosis Institute. ALEXANDER M. WILSON, Esq., of Chicago, said that the Chicago Tuberculosis Institute was or-

ganized in 1907. It had established seven tuberculosis clinics, which were maintained in conjunction with the large general dispensaries of the city. The institute supplied a nurse to each clinic, and through its central office coordinated the work of the clinics and prevented duplication. In less than seven months 1,400 examinations had been made. The tuberculosis clinic was fundamental to any intelligent effort to grapple with the tuberculosis problem in a large By the agency of such an institution home treatment could be put into effect in a large proportion of cases; preventive work could be carried on intensively in the places in which it was most needed; and children and other members of families could be reached early, often before the disease had gained a foothold on the individual.

The Day Camp for the Consumptive,—Dr. DA-VID TOWNSEND, of Boston, said that until recent years very little or no provision had been made in this country for the type of case which, for one reason or another, was unsuitable for the hospital for incipient cases or for the sanatorium, and which was not sufficiently far advanced to be treated in an advanced hospital or home. The first day camp had been established for such persons in Jungfernhaide, near Berlin, by the Red Cross Society, in 1900. Since that many similar camps had been started in Germany. In 1905 the Boston Association for the Relief and Control of Tuberculosis opened and operated the first day camp in the United States. It was established near Boston, and was in operation only during the summer months. In 1907 the camp remained open until February of the following year. The equipment consisted of a kitchen shack, an administration shack, a dining tent, and several smaller tents. Paper bags and crêpe paper napkins were used for the collection of the sputum, and these were collected and burned at night. The patients had two lunches and a dinner each day. They arrived at the camp at half past nine in the morning, and returned to their homes between five and six in the evening. The patients spent the day in reclining chairs at rest, or else in moderate amusement, under the direction of a physician and nurses. The chief aim of the camp was educational, and much emphasis was laid upon this phase of the work. Addresses were made by authorities upon various topics connected with personal hygiene and the hygiene of disease each season. Out of 252 persons admitted to the camp in the season of 1907, 209 roomed and slept alone, thirty-nine roomed and slept with some one else, and there was no record in five cases. Two hundred and forty-three of these patients lived in tenements or lodged, and only nine lived in their own houses. There was a noticeable improvement in eating and sleeping, with a diminution in night sweats from the start. A complete record of the home conditions was made by nurses who visted the homes of the patients. The system cost 63.7 cents a patient during the first year, with an average daily attendance of thirty-one. During the second year, with an average daily attendance of forty-six patients, the per capita cost was 63.8 cents. During the third year, with a daily average attendance of sixty-three and a half patients, the cost a patient was 51 cents. The experience had taught the Boston association that the day camp was of value, when properly conducted, as an educational centre for the patient with tuberculosis, as a means for the removal for a time of the source of infection from the community and from the home. As a centre for the proper care of the patient who was unable to go to a sanatorium, and as a place for the completion of the cure that had been started in a sanatorium. Further, the system had shown that a patient with tuberculosis was not hopeless until he was dead. It was quite likely that many patients had died from the lack of proper care. Two other camps had been started near Boston as the result of the establishment of the one represented by the speaker.

Night Camps.—Dr. Whelem Charles White, of Pittsburgh, said that the night camp, to which patients who were admited after their work for the day had been done, was of value to patients with open tuberculosis, with closed active tuberculosis, and with healed tuberculosis. Many of these patients could work from four to eight hours a day, and, of these, some needed supervision only, and others could not obtain proper care at the place in which they boarded and lodged. The night camphad a distinct educational and sociological value.

The Treatment of Tuberculosis in the Patient's Home or in Other Places than Sanatoria.—Dr. CHARLES L. MINOR, of Asheville, N. C., said that the home treatment meant to him the treatment of tuberculosis outside of a closed sanatorium. The hygienic and dietetic treatment was now recognized to be the most important part of the rational treatment of any case of pulmonary tuberculosis. These agencies were applied most successfully in sanatoria, and it was commonly believed that they could only be conducted properly in such an institution. But the speaker maintained that the hygienic treatment could be conducted just as well outside of such institutions, and often in the home of the patient. The features of the hygienic treatment included the careful personal supervision of the patient by a competent physician, the thorough instruction of the patient in the things required of him, the systematic hygienic arrangement of the patient's life, the effect of the example of other patients and of esprit de corps, nursing, proper housing, location, proper feeding of the patient, and suitable climatic conditions. All these, in the opinion of the speaker, could be obtained outside of an institution, unless the patient was treated in his own home, when the example of other patients could not be obtained, or unless the patient was so poor that suitable climatic conditions could not be had. The difficulties of handling the very poor were sociological problems rather than medical questions, as were also the handling of the ignorant and the criminal. The treatment of a chronic condition such as pulmonary tuberculosis required a different line of procedure from that applicable to the ordinary cases of acute disease. There was a necessity for much more detailed work and closer personal relations between the physician and his patient. In many cases the physician regarded the chronic case as uninteresting, tedious, and unfruitful of results. This was not the case. The patient required, however, will power and self control, determination and earnestness, patience and cheerfulness, intelligence and enthusiasm, and interest. The physician required will power and a strong personality, the ability to teach, enthusiasm, and a knack for directing details.

The Treatment of Tuberculous Patients in their Homes and Places Other than Sanatoria.-Dr. THOMAS D. COLEMAN, of Augusta, Ga., said that the details of the home treatment of tuberculous patients were of the greatest importance, because the majority of patients must be treated at home. The individual, the family, and society at large were interested in the question. Personal choice of the patient, his individual necessity, and the small number of sanatoria made that the fact. Home treatment was not to be confounded with climatic treatment or treatment in an entirely different climate from that to which the patient was accustomed, whether in the new climate the treatment was conducted in a sanatorium, a suitable home, or a boarding house. The speaker thought that as rigid discipline and as intelligent medical oversight might be had in the home as in the sana-

(To be continued.)

Tetters to the Editor.

APOMORPHINE, AN IDIOSYNCRASY?

TITUSVILLE, N. J., November 8, 1908.

To the Editor:

An article by Hernack, in the Münchener medizinische Wochenschrift, on the bad effects of apomorphine, in which he reports the action of a subcutaneous dose upon himself, dwelling upon the intense muscular relaxation and questioning whether this muscular paralysis is due to the vomiting, induces me to send you the following statement:

Recently and for some time I had under my professional care a man, sixty years of age, afflicted with a nervous trouble of the heart and a very indifferent stomach digestion. An accumulation of undigested food induced palpitation and angina to a painful degree. A hypodermic injection of one tenth of a grain of apomorphine relieved the stomach by a single emesis, distressing symptoms would subside, and in two hours the patient would resume the ordinary routine of his daily life.

Some little while back my usual good health was broken by an attack of frontal headache, which, as I had eaten heartily, I thought would be materially mitigated by a thorough emptying of the gastric contents. Unfortunately, my stomach is very tenacious of all it may receive, and has strong objections to returning goods it has not passed upon. This was in evidence at one time when I attempted emesis by ipecac, tartar emetic, and various and sundry other drugs, so a hypodermic dose of apomorphine was a natural sequence, especially with the knowledge of my recent experience with the drug in mind.

I injected a tenth of a grain under the loose skin of the arm above the elbow, and, informing a member of the family of the act and saying that in tenor twenty minutes I might be heard from, went as far to the rear of the yard as I could, that guests at the house might not hear the commotion, and there awaited results. A half hour passed without complaint from the stomach, but a peculiar "all

gone" feeling began to steal over me. My arms were heavy and my body drooped forward. My mind was clear, so much so that I wondered if the apomorphine had become changed or an error in administration could have occurred. I recalled that the tablets were recently purchased and from a most reliable firm, and I had no doubt of the accuracy in administration. I struggled to my feet and got part way to the house when vomiting ensued, followed by catharsis. I sank down under partial motor paralysis. The muscles of my arms and legs refused to respond with any degree of alacrity, the neck muscles refused to fully support the head, the jaw dropped, and saliva dribbled from the mouth. My prolonged absence caused a search to be made, and I was carried into the house. During most of this half hour my mind was clear, extremely active, then would come a space of a few seconds or minutes in which the functions of sensation or volition were suspended-a mental hebetude-followed by clear mind. To me the arterial pressure seemed normal, no evidence of failing pulse or cardiac depression; respiration normal, no dyspnœa.

At the end of an hour vomiting and catharsis had ceased, but muscular relaxation continued, and I went into a sound sleep, lasting until the next morning (this occurred about nine in the evening). This relaxed state of the muscles was discernible to a marked degree for twenty-four hours.

I will add that I am credited with an idiosyncrasy in the action of morphine, and that two years preceding this incident I received a spinal injury, some slight evidence of which remains.

MAXWELL S. SIMPSON.

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Surgical Memoirs and Other Essays. By James G. Mumford, M. D., Instructor in Surgery, Harvard Medical School; Visiting Surgeon to the Massachusetts General Hospital, etc. Illustrated. New York: Moffat, Yard, & Co., 1908. Pp. 358.

Many of the papers in this very interesting collection have been delivered by the author as addresses, and most of them have a biographical basis, though they also serve as sketches, from the professional point of view, of the times in which the subjects of the biographies lived. The men whose lives are set forth are Hippocrates, Galen, Vesalius, Ambroise Paré, Albrecht von Haller, John Hunter, Lord Lister, Sir Astley Cooper, Sir Benjamin Brodie, John Collins Warren, and Jacob Bigelow. They are those whose names are employed in the headings, but several other famous surgeons are dealt with, including Philip Syng Physick, Ephraim McDowell, Samuel D. Gross, Bernhard R. K. von Langenbeck, and Theodor Billroth. There are portraits of Lister, Vesalius, Paré, von Haller, Hunter, Physick, McDowell, Gross, von Langenbeck, Billroth, Cooper, and Warren.

Dr. Mumford shows great skill in the brief analysis of character and in depicting men's influence on the surgery of their times. It is not entertainment

alone that is to be derived from such a book; it is a notable aid in appreciating the history of the world's surgery, and it deserves to be widely read.

Pulmonary Tuberculosis and Its Complications, with Special Reference to Diagnosis and Treatment. For General Practitioners and Students. By Sherman G. Bonney, A. M., M. D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver; Visiting Physician to St. Luke's Hospital, etc. With 189 Original Illustrations, Including Twenty in Colors and Sixty X Ray Photographs. Philadelphia and London: W. B. Saunders Company, 1908. Pp. vir78.

The title of this book does not describe its text adequately, as the author discusses tuberculous disease not only of the lungs, but of all other organs and tissues. The chapters are included under parts on the actiology and pathological anatomy, the symptomatology, course, varieties, and termination, the physical signs, the diagnosis and prognosis, the complications, the prophylaxis, and general and specific treatment. It is stated that the book has not been prepared for the skilled specialist, but for the general practitioner, and that it embodies largely the re-

sults of personal experience. The author thinks that the practical dangers of infection from the bacillus of cattle are sufficiently real to justify no abatement of legislative, municipal, and individual measures to suppress the disease among domestic animals, and afford protection to the human race. He believes that infection by the alimentary tract occurs much more frequently than has generally been supposed. He thinks that the essential element in the propagation of the disease among children is not the inheritance of a tuberculous taint or predisposition from infected parents, but rather an undue vulnerability of tissues peculiar to infants, and an excessive exposure to sources of acquired infection. The tuberculin test is believed to be possessed of a high degree of diagnostic value in some doubtful cases; the more recent experience with the von Pirquet and the Calmette tests is not included, though both tests are mentioned.

Prophylactic efforts of society with reference to tuberculous disease must include compulsory notification and registration, supervision of the consumptive and his environment, the tender of material aid in accordance with the needs, dissemination to the public of information about the disease, and the administrative control of all important factors entering into the problems of ætiology and prophylacia.

The final chapter of the book is devoted to treatment by "vaccines," and the author concludes that the bacillus emulsion is of undoubted efficacy in some cases of long standing apyretic pulmonary tuberculous disease, and that in such cases the possibilities of benefit are far beyond the limits of former therapeutic effort. The book is well printed and has many valuable and interesting illustrations. It is likely to have, as it deserves, great popularity.

Venems, Venemous Animals, and Anticenomous Serum Therapeutics. By A. Calmette, M. D., Corresponding Member of the French Institute and of the Academy of Medicine; Director of the Pasteur Institute, Lille. Translated by Ernest E. Austen, F. Z. S. New York; William Wood & Co. Pp. xvi-403. (Price, \$5.)

It is a matter for congratulation that this splendid monograph by Calmette is now available to the English reading medical public. The author is well

known as one of the pioneers in this branch of medicine, and through his own researches and those of his pupils he has contributed a great deal to our knowledge of the subject discussed. About half of the volume is devoted to poisonous snakes, their venoms, and the treatment by antivenoms. Some idea of the importance of this subject for certain countries may be obtained when we are told by a recent writer that in India over 20,000 persons die annually from the bite of the hooded cobra. Among the poisonous snakes common to North America one finds the water viper or cotton mouth, the copperhead, and the various species of rattlesnakes. Fourteen of the last named are described. There is an interesting account of the capture and keeping of snakes. The chapters devoted to the collection of the venom, its nature, and the preparation of the antiserum are extremely instructive, and include the results of the latest scientific researches. The complexity of the poisonous action of the venoms is well brought out, and there is an interesting discussion of the natural immunity of certain animals with respect to snake venoms.

accomplished by Sewall, in 1887, but had no practical results. Calmette, working with cobra venom, and Phisalix and Bertrand, with viper venom, almost at the same time succeeded in immunizing guinea pigs and rabbits, and produced a serum which could be used to immunize other animals passively. In order to produce serum for therapeutic purposes, Calmette began to immunize horses and other large animals. To do this effectively is no easy matter, and requires on an average sixteen months. The technique of the immunization as at present carried out is fully described. Since there are two chief constituents in snake venoms, and since some venoms are very rich in one while poor in the other, and vice versa, it is necessary either to immunize the animals against both poisons (polyvalent serum) or to employ for therapeutic purposes the poison most common in that particular country.

The latter has proved the more feasible. The serum

used extensively in India is an "antineurotoxic"

serum. The toxicity of rattlesnake venom is due

chiefly to the hæmorrhagin, and therefore in this

country the antiserum must be directed chiefly

against this principle. After discussing the venoms

The production of an artificial immunity was first

of spiders, scorpions, bees, molluses, fish, lizards, and other animals, the author reproduces a series of documents relating to the clinical use of the antivenomous serum. The illustrations, of which there are 125, are wonderfully well drawn and add greatly to the value of the book. The translation is excellent, and the book is a credit to its publishers.

High Frequency Currents. By Prederick Fixch Strong, M. D., Instructor in Electrotherapeutics at Tufts College Medical School. One Hundred and Eighty-three Illustrations. New York: Rebman Company Pp. 289

(Price, \$3.)
The rapid progress being made in our knowledge of medical electricity allows of and even necessitates frequent additions to the literature of the subject, and such accessions are especially appreciated when they come from one who is known to be so well versed in electrotherapeutics. This book, although containing but 280 pages, is well illustrated and is filled with useful knowledge. It opens with a short historical sketch of the development of the currents

of high frequency, both in America, where it originated, and in Europe, and it is gratifying to see American physicians receive their share of credit for

original work in this line.

Following this there are three chapters devoted to electrophysics or its essentials, in which a very interesting and easily understood explanation of the electron and vibratory theory is given. One hundred and ten consecutive pages are then devoted to a careful consideration of the generation of the high frequency currents, the apparatus used both here and abroad, a comparison of the currents derived from different types of apparatus, the measurement of the current, phenomena, physical properties, methods of application, etc. This difficult task has been well handled by the author, whose statements are concise, clear, and forceful. chapters on therapeutic technique, the physiological and therapeutic action of the various currents are, for the most part, ably done. The absence of exhaustive experiments, case reports, and other forms of padding allows of a clear and connected description which can be easily digested by the reader. Although the author clearly shows a preference for the Tesla currents, he gives an analysis of all the currents of high frequency, with their limitations and possibilities. Finally, there are three short chapters on the production of the x ray and the generation of ultraviolet rays and ozone by the high frequency currents. Although the author has given in considerable detail the technique of application of the various high frequency currents, he has preferred to leave out the so called essentials of the entire subject of electrotherapeutics, and he has compiled a small pocket edition containing these essentials, and advises a careful perusal of its pages as a preliminary to the present volume. .

To be, perhaps, hypercritical, we fail to see the necessity of showing the same cuts a second time, and in one or two instances we believe a better description of apparatus might be given. There are, as is usual, a few unimportant typographical errors, although one, in this instance, causes some confusion between a cut of a Piffard spiral and the text. Otherwise the book is well printed on good paper, substantially bound, and small and light enough to be comfortably held in the hands while reading. The work is instructive, up to date, and exceedingly

American National Red Cross Textbook on First Aid and National Red Cross Textbook on First Aid and National Columns Amount of Instruction How to Prevent Accidents and What to Do for Injuries and Emergencies. By Major Charles Lynch, Medical Corps, United States Army, Prepared for and Endorsed by the American National Red Cross. With Seventy-tour Illustration—Philadelphia: P. Blakiston's Son & Co. 1008. Pp. philipage. Co., 1908. Pp. viii-247.

The Red Cross is a society recognized by most governments and organized in nearly every country for three purposes: I. In time of war to render medical aid to the belligerent armies. 2 and 3. During peace to give assistance to the civil authorities in preventing accidents and to help and support these same authorities in great calamities. On account of the two last purposes, the American National Red Cross has issued this little textbook for use in schools and colleges, in families, in homes, in factories, and in workshops. It may thus be used as a manual for teaching and as a reference book in an emergency,

Edited by a surgeon of the United States army who is acquainted with accidents in war as well as in peace, having served during the Russo-Japanese war as United States medical attaché to the Japanese army, and having been engaged in organizing first aid and relief columns and lecturing before the public on such subjects, it is of great value.

The book gives a short lecture in anatomy and physiology, teaches about germs and microorganisms, takes up first aid material, and then speaks about the accidents and injuries. The index will assist the inquirer in looking up particular forms of

The Practitioner's Visiting List, 1909. Thirty Patients per-Week. Philadelphia and New York: Lea & Febiger. Pp. 192. (Price, \$1.25.)

This diary appears for the twenty-fifth year. It is issued in four styles: "Weekly," dated, for thirty patients; "monthly," undated, for 120 patients; "perpetual," undated, for thirty patients weekly a year; and "sixty patients," undated, for sixty patients weekly a year. It contains also the usual addenda, such as a scheme of dentition, instructions for examining the urine, poisons and antidotes, directions for artificial respiration, a table of doses, an alphabetical list of diseases and their remedies, etc.

BOOKS PAMPHLETS, ETC., RECEIVED

Therapeutics of the Circulation. Eight Lectures Deliv-Therapeutics of the Circulation. Eight Lectures Delivered in the Spring of 1905 in the Physiological Laboratory of the University of London. By Lauder Brunton, Kt., M. D., D. Sc., LL. D. (Edin.), LL. D. (Aberdeen), F. R. C., C. P., F. R. S., Consulting Physician to St. Bartholomew's Hospital. Published under the auspices of the University of London. With Two Hundred and Forty Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xi-280.

Practical Points in Anæsthesia. By Frederick Emil Neef, B. S., B. L., M. L., M. D., New York. New York: Surgery Publishing Company, 1908. Pp. 46. (Price, 60 cents.)

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M. D., Associate in Clinical Medicine, Jefferson Medical College, etc. With Two Hundred and Twelve Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 548. (Price, \$3.50.)

Miscellann.

An Ingenious Apparatus for Viewing Surgical Operations.—By the courtesy of the American Journal of Surgery we are enabled to reproduce from its September number the following article by Dr. Charles H. Duncan, surgeon to St. Gregory's Volunteer Hospital, New York:

In the best planned surgical theatres the provisions for demonstrating an operation are wofully inadequate. The visitor can see very little (and that little imperfectly), except the backs of the surgeons and nurses, unless he be one of a favored few who may be allowed to crowd about the table, where he is an inconvenience to those who are working and a danger to their asepsis.

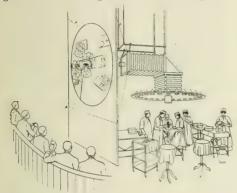
A view of all the details of an operation can be obtained only from the position occupied by the surgeon and his immediate assistants, i. e., from just above the field of operation itself. To provide that view to a large number of observers is the purpose of the apparatus here illustrated.

If a camera is vertically suspended, lens downward, directly over the field of operation, a picture of the latter can be focused on its ground glass

screen, where it may be viewed by an audience in a room above, through an opening in the operating room ceiling. By means of a prism, however, the rays of light may be made to be reflected from the operating field into a camera horizontally suspended, and focused on a vertical ground glass screen.

To accomplish this the author employs a large lens and a surface mirror, which are to be fastened in a fixture about four and a half feet above the patient. Around the mirror is a glass shield five feet in diameter, the periphery of which is supplied with lights arranged to provide a uniform, brilliant illumination without any shadows. The part of the body to be operated upon is brought under the mirror.

The illustration in general shows the aim of the invention, but it is not correct in optical and mechanical detail. The apparatus, as shown would give an inverted image on the screen in regard to



Sketch showing the author's apparatus for exhibiting an operation at close range to a number of visitors, for photographing lesions in vivo, and for separating visitors from the operating reconstitute of the street of the second seco

right and left, which, of course, is not desirable. With the assistance of an optical firm the author has been able to secure the lens and mirrors for experimental purposes, and with the aid of three combinations of lens and mirrors a positive reproduction of the field of operation is obtained upon the screen, and thereby good, sharp photographs may be secured. All lenses absorb color more or less, and were we to stop here the reproduction on the screen, while sharp and well defined in regard to linear aspect, would have more or less absence of color. We have, by means of well known methods, interposed several solutions, held between thin plates of glass, which intensify the red, orange, and green rays.

As will be seen by a study of the illustration, the vertical light rays from the operating field are transmitted, without refraction, into an enlarging camera, where they may be focused on the vertical ground glass. If the camera screen is set in a partition separating the operating theatre from a darkened room, a large number of visitors seated in the latter can secure a view of practically every step of an operation as it progresses. A megaphone set in the partition, and projecting into the operating room, will provide means by which the operator can talk to the visitors. A man stationed at the partition can make

such occasional manipulations as may be necessary to keep the image in focus, or he may photograph any stage, or, by operating a moving picture film, all the stages, of an operation.

The apparatus will in no way interfere with the operating room personnel. Its intended uses and

advantages may be thus summed up

To provide to a body of visitors the same view of an operation as though each of them had his eyes directly over the field. (Obviously operations in certain cavities of the body, e.g., the nose and the rectum, do not lend themselves to this method.)

To completely separate the visitors from the surgeon and his staff. This eliminates the danger of contaminating the operating room by dust from street clothes and shoes. It eliminates distraction of the operators by the going and coming of visitors, and distraction of the visitors' attention from everything but the operation itself. It saves the audience from the fumes of narcotics and the steam of sterilizing apparatus. It affords a means by which visitors may have plenty of cool, fresh air, without chilling the patient.

To conveniently photograph any step of an oper-

ation on a large plate.

A noving picture of an operation for preservation may be secured by attaching a moving picture machine to the apparatus. By this means the operation can be reproduced again and again for teaching purposes in medical colleges. Arranged on the plan of the "mutoscope," such a moving picture can be studied at leisure in the doctor's office, where by means of it he can have a particular surgeon perform a particular operation for him over and over until he is thoroughly familiar with its details. Thus the technique of our master surgeons can be studied and compared at every clinic, and preserved for future generations.

233 LEXINGTON AVENUE.

Official Rews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending November 27, 1908:

| Smallpox United States | |
|--|---------|
| Places. Cases, I | Deaths. |
| California Los AngelesOct. 31-Nov. ; 1 | |
| California San Francisco Oct. 31-Nov. 7 2 | |
| Indiana Elkhart Oet. 31-Nov. 7 3 | |
| Indiana - Fort Wayne Oct. 31-Nov. 7 | |
| Indiana La Favette Nov. 2-16 3 | |
| Kansas Topeka Oct. 31-Nov. 7 2 | |
| Kansas—Wichita Oct. 31-Nov. 7 1 | |
| Kentucky—Covington Nov. 7-14 4 | |
| Kentucky-Lexington Nov. 7-14 1 | |
| OhioCincinnati Nov. 5-12 5 | |
| Washington—SpekaneOct 31-Nov 7 1 | |
| Wisconsin-La Crosse Oct. 31-Nov. 16 5 | |
| Smaller Foreign. | |
| Brazil-Rio de Janeiro Sept. 27-Ort 18. 1.420 | 0.50 |
| Brazil—Santos Sept 13 Oct. 14 30 | 1.5 |
| Canada—Halifax Oct 31-Nov 7 | |
| Canada—Victoria Oct. 31-Nov. 7 1 | |
| Egypt—Cano, Oct. 7 21 | - |
| India—Bombay Oct. 13 20 | O |
| India Rangoon | 1 |
| Indo-China - Cholen Sept. 25-Oct 3 | 1 |
| Italy—GeneralOct. 25-Nov. 1 39 | |
| Italy-Naples S | 1 |
| Mexico-Mexico City Sept 19 Oct : | () |
| Norway Christiania Oct 10 24 6 | I |
| Russia-St. Petersburg Oct 10-17 1 | 1 |
| Russia Warsaw Sept. 25 Oct. 10 | 0 |
| Spain-BarcelonaOct. 25-31 | 4 |
| Spain -ValenciaOct. 24-31 | |
| Turkey-Constantinople Oct. 18-Nov. 3 | 7 |

| Cholera-Foreign. | |
|---|------|
| China—Hongkong Sept. 19-26 1 | 1 |
| India-Madras Oct. 3-16 | 19 |
| India—Rangoon | 1 |
| Indo-China—CholenSept. 27-Oct. 3 2 | 2 |
| Indo-China-Saigon Sept. 27-Oct. 3 1 | 1 |
| Russia-Odessa | 4 |
| Russia-St. PetersburgNov. 4-9258 | - 9 |
| Straits Settlements Singapore Sept. 19-Oct. 3 | 3 |
| Planue-Foreign. | |
| Brazil-Rio de Janeiro | 7 |
| Chile—Iquique 4 | |
| China—Hongkong Sept. 19-26 1 | 1 |
| Egypt—GeneralOct. 14-Nov. 3 20 | 10 |
| Egypt—Alexandria Oct. 14-Nov. 3 6 | 4 |
| India-General Sept. 26- Oct. 104.977 | 3,69 |
| India—Bombay Oct. 13-20 | 16 |
| India—Rangoon Oct. 3-10 | 3 |
| Indo-China-Cholen Sept. 26-Oct. 3 9 | g g |
| Indo-China-Saigon Sept. 26-Oct. 3 8 | 7 |
| Peru—GeneralOct. 8-14 | 13 |
| Peru-Callao Oct. 8-14 | 2 |
| Peru-Lima Out 814 | 1 |
| | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commis sioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending

November 18, 1908:

Barnes, W., Acting Assistant Surgeon. Granted twentyone days' leave of absence, from December 10, 1908.

BILLINGS, W. C., Passed Assistant Surgeon. Detailed as a member of a Revenue Cutter Service Retiring Board at Baltimore, Md., November 18, 1908.

BLANCHARD, J. F., Acting Assistant Surgeon. Granted two days' leave of absence, from November 11, 1908.

days' leave of absence, from November II, 1908.

Browne, R. W., Acting Assistant Surgeon. Granted twenty-nine days' leave of absence, from November 20, 1908.

Burkhalter, J. T., Passed Assistant Surgeon. Detailed as a member of a Revenue Cutter Service Retiring Board at Baltimore, Md., November 18, 1908.

Carter, P. I., Acting Assistant Surgeon. Granted five days'

leave of absence, from November 2, 1908.

CUMMING, H. S., Passed Assistant Surgeon. Granted one month's leave of absence, from October 29, 1908.

CURLEY, C. P., Acting Assistant Surgeon. Granted three days' ieave of absence, from November 18, 1908, under paragraph 210, Service Regulations.

Dynan, N. J., Acting Assistant Surgeon. Granted one day's extension of leave of absence on account of sick-

ness, November 4, 1908. Francis, Edward, Passed Assistant Surgeon. Granted ten

days leave of absence, from December 1, 1908.

KERR, J. W., Assistant Surgeon General. Detailed to represent the Service at the Convention of Mayors of North Carolina at Charlotte, N. C., November 17 to 18, 1008

Lyall, Robert, Acting Assistant Surgeon. Granted four days' leave of absence, from November 6, 1908, without

MARCOE, W. W., Acting Assistant Surgeon. Granted thirty days leave of absence, from December 2, 1908.

PORTER, JOSEPH Y., Sanitary Inspector. Title changed to read "Quarantine Inspector," from December 1, 1908.
Stearns, H. H., Acting Assistant Surgeon. Granted twenty-eight days' leave of absence, from December 4, 1908.
Thompson, W. R. P., Acting Assistant Surgeon. Granted thirty days' leave of absence, from November 23, 1908, which was the product of the production of th

nine days with pay and twenty-one days without pay.
WHITE, J. H., Surgeon. Granted eight days' leave of absence en route to join station.

Board Convened.

Board of medical officers convened to meet at the Bureau, November 23, 1908, for the purpose of making final revision of the regulations for the medical examination of arriving aliens. Assistant Surgeon General H. D. Geddings, chairman; Surgeon George W. Stoner, Passed Assistant Surgeon J. W. Schereschewsky; Acting Assistant Surgeon M. V. Safford, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers for the medical Corps of the United States Army for the core ending November 38, 1908;

BARNEY, F. M., First Lieutenant, Medical Reserve Corps. Ordered from temporary duty at Fort McHenry, Md., to Fort Howard, Md., for temporary duty. Griffis, F. C., First Lieutenant, Medical Reserve Corps.

Ordered to accompany troops from Fort Sheridan Ill., to Fort D. A. Russell, Wyo., and return to station.

Kennedy, J. M., Major, Medical Corps. Directed to report for assignment as commanding officer, Army General Hospital, San Francisco, Cal., on December 1, 1908. LEHARDY, J. C., First Lieutenant, Medical Reserve Corps

Order for sailing for Philippine service amended; will sail on January 5, 1909, instead of December 5, 1908.
PIERSON, R. H., Captain, Medical Corps. Granted leave of

absence for ten days.

Torney, George H., Colonel, Medical Corps. Relieved from present duties in San Francisco, Cal., December 1, 1908, and directed to repair to Washington, D. C., for duty in the office of the surgeon general.

WREN, R. J., First Lieutenant, Medical Reserve Corps. Sick leave of absence extended one month.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 28, 1908:

Dessez, P. T., Passed Assistant Surgeon. Ordered to temporary duty at the Naval Hospital, Mare Island, Cal. HALE, G. D., Assistant Surgeon. Detached from the New

HALE, G. D., Assistant Surgeon. Detached from the New Hampshire and ordered to the Idaho.
 HOUGH, F. P. W., Assistant Surgeon. Detached from the naval proving ground, Indian Head, Md., and ordered to the New Hampshire.
 MUNGER, C. B., Assistant Surgeon. Detached from duty at the Naval Hospital, Portsmouth, N. H., and ordered to the naval proving ground, Indian Head, Md.
 NORTON, O. D. Surgeon. Detached from the naval recruits.

NORTON, O. D., Surgeon. Detached from the naval recruiting station, New York, N. Y., and ordered to continue duty in attendance upon officers and enlisted men of the Navy and Marine Corps in New York, N. Y., not otherwise provided with medicl attendance.

Births, Marriages, and Deaths.

Born.

FREUNDLICH.-In New York, on Sunday, November 22d, to Dr. David B. Freundlich, and Mrs. Freundlich, a son. Married

BARNES—TROUP.—In New York, on Wednesday, November 25th, Dr. Thomas P. Barnes and Miss Kate R. Troup.

Cory-Hunterson.-In Philadelphia, on Tuesday, November 17th, Dr. Edwin Francis Cory, of New Haven, and Miss Anna Salter Hunterson

Davidson—Hudson.—In Dallas, Texas, on Monday, November 23d, Dr. Wilson T. Davidson, Medical Department

vember 23d, Dr. Wilson I. Davidson, Medical Department of the United States Army, and Miss Mary Hudson. Greenberg—Cohen.—In New York, on Sunday, November 29th, Dr. Geza Greenberg and Miss Lena Cohen. Gross—Davenporte.—In Denver, Colorado, on Thursday, November 19th, Dr. J. W. S. Gross and Miss Ethelwyn A. Davenporte.

OLPP—SEIPLE.—In Philadelphia, on Wednesday, November 25th, Dr. Archibold E. Olpp and Miss Beatrice Seiple.

PECK—DUNCAN.—In New York, on Saturday, November 28th, Dr. Edward Everett Peck and Mrs. Elizabeth Anderson Duncan.

PEAHLER-SIMPSON.-In Philadelphia, on Saturday, November 21st, Dr. George E. Pfahler and Miss Frances Simpson.

Angle.—In Brockton, Massachusetts, on Friday, November 20th, Dr. Henry Frederick Angle, aged sixty-eight

BABBITT.—In East Orange New Jersey, on Monday, November 23d, Dr. George E. Babbitt, aged forty-nine years. KILLOUGH.—In Hummelstown, Pennsylvania, on Tuesday, Novembor 17th, Dr. Samuel M. Killough, aged sixty-seven

Norris.—In Baltimore, on Friday, November 20th, Dr. George W. Norris, aged sixty-three years. Reeves.—In Yonkers, New York, on Wednesday, November 25th, Dr. Gabriel Pellet Reeves, aged eighty-eight

SHREVE.—In Burlington, New Jersey, on Thursday, November 19th, Dr. Joseph Shreve, aged eighty-six years. Warner.—In Oshkosh, Wisconsin, on Wednesday, November 11th, Dr. Lucy H. Warner, aged twenty-seven years. Wilson.—In Chicago, on Thursday, November 19th, Dr. Thomas H. Wilson, aged thirty circli years.

New York Medical Journal

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Philadelphia Medical Journal and Medical News

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WHOLE NO. 1567.

Original Communications.

THE APPLICATION OF REST AND EXERCISE IN THE TREATMENT OF TUBERCULOSIS.*

By F. M. Pottenger, A. M., M. D., Monrovia, Cal.,

Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat.

The construction of the human organism is such that its most important functions are carried on best when the body is subjected to an evenly balanced application of rest and exercise. This fact should be borne in mind in all discussions relative to the application of these principles to pathological conditions. While it might be advisable at times to enforce greater exercise than that generally employed, and while at times it might seem best to enforce almost complete rest, yet we must not lose sight of the fact that a combination of the two is always desirable, if it can be had without jeopardizing the best interests of the patient.

In applying rest and exercise to those who come under our care for the treatment of tuberculosis, we must first suit these to them as individuals, remembering that one can stand a great deal more than another. Then we must suit them to the disease and the stage of the disease in which the patient presents himself.

As a basis for determining the amount of rest and exercise to be prescribed in the treatment of tuberculous patients I would call attention to the following effects which tuberculosis produces upon the organism. Early in the disease the toxines which are elaborated by the tubercle bacilli are poured out into the blood stream and find their way throughout the body, especially affecting the nervous system and through it every important function of the body. The respiratory, circulatory, and digestive systems are all disturbed; the muscular system is deprived of its tone, and the heat regulating mechanism is rendered unstable. In advanced tuberculosis not only do we have to contend with these effects produced by the toxines, but also the effects produced upon one organ by the disturbances of function and the pathological changes wrought in

The conditions which must especially be taken into consideration in prescribing rest and exercise for a patient are, aside from the natural strength or powers of endurance of the individual, the condition of the heart and the ability of the patient to

exercise without causing fatigue, increase of cough, shortness of breath, or a rise of temperature. Of course, this does not take into consideration any of the usual complications, such as hæmorrhage, which always call for rest.

Thus, it will be seen, the problem of treating early and advanced tuberculosis is very different, likewise the treating of febrile and nonfebrile cases. In early tuberculosis the problem is comparatively simple. Most nonfebrile patients in the early stage are able to take that amount of exercise which is necessary to keep their musculature and general boddily functions in tone without doing themselves harm, while in the later stages this is not true.

The heat centre seems to be especially unstable in tuberculosis. This manifests itself very early in the disease and continues to its end. It shows itself by a rise in temperature following upon an exertion that would not affect a well person at all. In the early stage a short walk will often cause a rise of a fraction of a degree (which can be utilized in making a diagnosis), and in the later stages it will cause much more; while a severe exertion may cause a rise of several degrees. Such rises should be avoided unless the temperature is found to decline soon after the cessation of the exercise. While in early tuberculosis the harm produced by such a rise is not apparent, in late tuberculosis it is very evident.

Sometimes exercise causes such an increased amount of toxines to be thrown out into the blood stream as to produce a reaction such as that which follows the administration of vaccines made from the tubercle bacillus. A temperature due to this cause would probably not show itself at once, if we may judge from the experience gained by the therapeutic use of vaccines, for such a reaction usually comes on from four to twenty-four hours after they have been administered. On the other hand, it would not subside as quickly as many of the transient temperatures which follow immediately on exertion and disappear in an hour or two. When exertion is followed by a rise in temperature, as a rule, it is a sign that the exercise has been too severe, and the next time exercise is taken it should be reduced in amount below the point causing such

The production of fatigue should also be avoided. When a patient can take exercise without fatigue, other contraindications being climinated, such exercise is beneficial, for it strengthens the muscles, quickens the flow of blood and lymph, and indirectly influences in a favorable manner the various important functions of the body; but if carried to the point of fatigue, instead of strengthening and build-

Read before to International Congress on Tuberculosis, Washington D. C., Scheeler, et October 12, 1968.

ing up the body, the vital forces are depressed, and the patient's resisting power is, for the time, lowered. Energy that should be utilized in combating the infection is required to restore the overworked

body cells.

It has been suggested that, if exertion causes the bacillary toxines to be thrown out into the blood stream, producing an autoinoculation with bacillary vaccines, this procedure should be utilized in the treatment of tuberculosis. To this the well founded objection has been offered that such a procedure is unscientific and irrational because there is no way of controlling the dosage. I would offer as another objection that, when an autoinoculation is produced by exertion, in all except the early nonfebrile cases, it is produced at a most inopportune time, for, as a result of sufficient exercise to cause an appreciable autoinoculation, there is produced more or less fatigue. Thus the inoculation is given to the patient at a time when the body cells which must react and produce antibodies in order to bring about the establishment of immunity are in a state of depressed activity, owing to the fatigue which has been caused, consequently they cannot respond to their full capacity in the elaboration of protective substances. This theory finds support in the experiments which have been made, which show that the agglutinating power of the blood is lowered by fatigue.

Exercise may cause dyspnœa either of pulmonary or cardiac origin. If the dyspnœa is of cardiac origin and the patient's heart is not seriously diseased, providing other contraindications are not present, graduated exercise, adapted carefully to the powers of the heart, may improve its tone and strengthen its force, thus removing the dyspnœa. If, on the other hand, the dyspnœa is of pulmonary origin (due to a diminished amount of lung tissue), exercise must be carefully restricted, for exertion calls for more oxygen, and the only way the lungs can respond is by an increase in the number of respira-

tory efforts.

The heart requires very careful consideration in all discussions relative to the application of rest and exercise in the treatment of tuberculosis. It is the organ which is most affected by exercise, and likewise the one which must bear the brunt of the disease in tuberculosis. It is the most important organ that we have to consider from a prognostic stand-

point.

One of the early signs of tuberculosis is an instability on the part of the heart. While at rest the pulse may not be any quicker than normal; upon exertion it is markedly accelerated; and this condition holds throughout the disease. In health the pulmonary and systemic circulation balance each other, and the heart works without strain. In pulmonary tuberculosis, on the other hand, an inflammatory process is present, and, according to the extent and the nature of the pathological condition present, the pulmonary circulation is impeded or cut off, and to this extent the right heart is subjected to a greater or lesser strain. At the same time the heart is incapacitated for withstanding this extra strain by the degeneration which occurs in the heart muscle consequent upon the toxamia and general min an the a nell such interiorence in the ing down of the vagus in adhesions and in masses of enlarged glands.

The heart, then, must always be carefully considered in tuberculosis. It must be spared and strengthened for the great strain to which it is subjected. Early in the disease this care should be instituted, so that the patient may recover, if recovery is possible, with a sound heart. Late in the disease such care is imperative, that the patient may recover at all.

The point to this discussion is that rest and exercise must be prescribed for the individual. Neither rest nor exercise should be prescribed to the exclusion of the other. Both must be employed, and with the same care and judgment as the remedies of the pharmacopæia if the best results are to be obtained.

This discussion is pertinent to-day, when the attempt is being made to offer the advantages of scientific treatment to as many sufferers from tuberculosis as possible. If patients could work during the time when they are being treated, the cost of treatment would be reduced. The plan of manning institutions by patients has been tried with some degree of success. There are many institutions where the patients are allowed, and some where they are compelled, to do a certain amount of work. In others, practically all the service of the institution is rendered by patients. Such experiments are at least interesting, and in treating charity cases enough may be saved in maintenance to make such a plan practical; but the work should be carefully prescribed, so that the physical exertion in no wise reduces the patient's chances of recovery and in no wise retards the progress toward that end. It is impractical to make every patient work, or to make any patient work at all times, for there are times when rest is imperative.

In treating the well to do, my experience is that they do the best when they are free from cares and labor, when the exercise is prescribed for them, according to their powers and requirements. Of course, it must be borne in mind that the charity patient has much the advantage of the well to do while being treated in institutions for the cure of tuberculosis. For him, the change from his former surroundings to that of an institution is so great that he might improve even if he continued working; while for the latter the change is not so great for he is accustomed to having good food, comfortable but not always hygienic homes, and a certain

amount of good care.

My experience in treating patients taken from all social conditions impresses me with the fact that they all do best when they are free from any necessary labor, either of a physical or mental nature, but that those for whom institutional life is a great change, as mentioned before, can, if there are no contraindications to exercise, make favorable progress toward recovery and still perform tasks suited to their working capacity. But even in these cases it must be remembered that there are times when the patients should not work.

No tuberculous patient should ever enter into a game that he cannot stop at any time before he gets tired. The same is true of work. No patient should ever have a task assigned him that he cannot leave at any moment, should it begin to task his strength

If charity tuberculous patients are to work while they are being treated, the work should be carefully measured and suited to the patient and his condition. It cannot be done as a routine matter, but only after most careful individualization.

THE DANGER IN USING COW'S MILK CONTAIN-ING TUBERCLE BACILLI.*

By J. T. GORTON, M. D., Yonkers, N. Y.

The question of providing an adequate, permanent, and uncontaminated supply of potable and wholesome water is one which to-day is engrossing the attention of every municipal government in our country. But as yet only sporadically do we see communities taking up the question of pure and safe food for that army of infants on whose healthy brains and bodies will some day depend the future of our country. The rich man may easily provide proper milk for his children, but he should not steel himself against the cry of the laborer's child for milk just as pure and as nourishing; for it is on the working man's children that the work and the burdens of the country must eventually fall.

Our modern mode of living-civilization, if you like-renders more than three quarters of our mothers unfit to feed their babes as nature intended they should be fed during the early months of life. And as cows' milk, properly modified to suit the needs of each individual infant, has been found to be the most satisfactory substitute for human milk, we must look to the cow to provide for our nursling a food which is pure, nourishing, and disease free.

The time is coming when the character of a city's milk supply will be the subject of just as careful investigation by the intelligent prospective home seeker as is the status of that city's water supply to-day. We bathe in the water; use it for cleaning, for power, and for drinking. But we can make it safe by boiling or distillation before we drink it; and proper sand filtration removes most of the bacteria, thus rendering it practically safe for drinking.

We can filter milk also, but in this manner only the gross particles of dirt, which may be innocuous, are removed. After passing through a mechanical separator, which removes gross dirt and mucus (De la Val), the bacterial count of milk and cream after it is remixed is actually higher than it was a few seconds before. This sudden increase in the number of bacteria is more apparent than real, however, as the agglutinins of milk tend to cause bacterial clumping, which is disturbed by the action of the separator. Milk may be rendered germ free by boiling, sterilizing, or pasteurizing, but it is a mooted question whether so treating it does not

I believe that it is the duty of every city, town, and village in the country to constantly insure to its citizens pure, clean, wholesome milk, unaltered by preservatives or heat.

Our commercial milk, from the standpoints of

*Read at the meeting of the Alumni Association of Because Hospital, on October 7, 1908.

the bacteriologist, the pædiatrist, the sanitarian, and the veterinarian, seems to be open to an almost endless amount of study. And working with the scientist, the intelligent farmer and dealer have done much in the last few years to add to our knowledge of milk and to improve our methods of procuring it from the cow in the most desirable condition; and of safeguarding it until it reaches the consumer.

The danger to be feared in the consumption of milk is that it may contain pathogenic bacteria in number sufficient to cause disease, or may be overloaded with other forms of bacteria which tend to alter its character.

It is now widely known and generally conceded that milk is a natural culture medium, and the great milk problem to-day really resolves itself into a worldwide effort to obtain our milk free from bacteria, and to keep it so until it reaches the con-

Milk obtained from carefully groomed, healthy animals under good hygienic conditions, and with the exercising of great care on the part of the milker, always has a low bacterial count just after it is drawn from the udder. This led many investigators to the very natural assumption that the observance of strict asepsis in milking would give a germ free milk. Repeated trials failed to substantiate this belief. By counting the bacteria in the fore milk-that which is first drawn-it was discovered that such specimens gave a much higher count than either the remainder of that milking or than the whole quantity mixed. This led to the discovery that the open teat is a nidus for bacteria, which light on it from the air and multiply inside the canal. Lastly, Boekhart, De Vries, and others have drawn milk from healthy udders with sterile cannulæ, and have always obtained growths from such specimens. And von Freudenreich in 1903 examined the milk in the udders in thirteen cows immediately after slaughtering and always found organisms. These tests prove conclusively that while milking machines undoubtedly prevent air contamination of milk while it is being drawn, it is quite as impossible to procure sterile milk by their use as it is by hand milking.

It is apparent that our milch cows do not give sterile milk. However, all the tests made with the milk of healthy cows showed that with proper care it is possible to limit the bacteria in freshly drawn milk to 500 to 1,000 in 1 c.c., and the organisms in carefully collected milk have been found to be non-

From these facts it is obvious that properly obtained milk is clean, wholesome, and nonpathogenic just after it is drawn. Dr. William H. Park, as early as 1901, showed that if it was rapidly cooled to 50° F. or under, and maintained at this temperature, there was practically no bacterial increase for at least twelve hours, and the multiplication after that time was almost negligible for days. Goler, Law, and others have kept milk sweet and fresh for at least ten days.

The conclusions to be drawn from these studies give us all the knowledge necessary for the delivery to the consumer of pure milk, low in bacterial life, namely, the observance of absolute cleanliness in

render it harmful and even dangerous to the health and life of a young and delicate infant.

milking; the maintenance of the milk at a sufficiently low temperature; reasonably rapid delivery; and the use of only such milch cows as are known to

be in good health.

I have not deemed it necessary to go into the details of a proper water supply for the cattle, proper water for washing utensils, udders, hands, and suits of workers at the farm and in the cooling and bottling room, the health of the workers, the condition of the stables, milking stalls, and milk house, the grooming of the cattle, and the many other matters which must engage the attention of those who are

to produce an ideal market milk.

The market milk of Washington in 1906 showed an average bacterial count of about 22,000,000, and in 1907 of 11,000,000 in 1 c.c. The milk in 1907 was maintained and delivered at a temperature 4° F. lower than in 1906, and to this fact is attributed the lower bacterial count in 1907, a number still high enough to be appalling to those of us who consider any milk containing more than 1,000,000 bacteria absolutely unfit for human consumption. One Washington milk reached the appalling limit of 307,800,000 bacteria in I c.c., a pretty dense population for fifteen small drops of fluid. And when one stops to compare these figures with those showing the number of bacteria in I c.c. in the sewage of Boston, Mass., in which the average count from 1894 to 1901 was 2,800,000, and with the records for London, England, which show from 2,000,000 to 11,000,000 in 1 c.c. for the same period of years, the high bacterial count of the milk of many of our cities raises the question of its desirability for food even for the most hardy.

Milk is the staple article of diet of most human beings under five years of age, of the sick at all ages, and of the aged. It is the mainstay of the nursery and of the sick room; and it seems little short of wicked to feed those who are dependent upon the workers, whether through the incompetence of either extreme of age or through the ravages of disease, a food more heavily laden with bacteria than the sewage of our great cities. In July, 1900, the bacterial content of the average milk of Boston was 2,300,000. In 1900 the London milk contained between 3,000,000 and 4,000,000 bacteria

in I c.c.

Nathan Straus in a recent lecture before a class in political economy at Heidelberg University stated that he believed more attention was bestowed on the care and handling of beer than milk. He declared that as many as 160,600,000 bacteria had been detected in 1 c.c. of milk and pointed out that such figures were never equaled by sewage bacterial counts. But he could not have known about the condition of Washington's milk, for the government report shows four samples taken by inspectors from wagons with counts of over 200,000,000, one reaching the high figures quoted a few months ago. The milk of l'hiladelphia, Chicago, and Baltimore ranges in bacterial count in 1 c.c. from a little over 2,000,000 to 5,000,000. In New York city Dr. Park is quoted as having put the average in 1901 at about 5,000,000.

Rosenau truly points out that it is not the number of bacteria within reasonable limits that is of im-

portance from the standpoint of health, but the kind of bacteria in any milk and the nature of their products. It is generally known that most specific pathogenic bacteria which get into milk grow best at body temperature, and while not killed at a temperature of 50° F., are absolutely prevented from multiplying in milk kept thoroughly chilled. Very few people have any idea of the temperature of the air in the ordinary house icebox. It is a fact that many ice boxes never chill the air below 60° F., and milk and other foods, unless placed in the ice chamber in actual contact with the ice, rarely are chilled below 62° F., and much of the time are kept at a temperature close to 70° F. While this is not an ideal temperature for bacterial growth, there are many forms that increase rapidly under such conditions. It has been pointed out in a recent article that certain forms of bacteria multiply in milk kept at a freezing temperature, but they are not believed to be pathogenic. And right here, in all fairness to those producing and vending our milk, it might be said that much good milk is spoiled daily by being left for one, two, or three hours on the doorstep, sometimes in the sun, before it is taken in by the maid or housewife and deposited in the icebox. Many times more bacteria may develop in milk so ill treated than have been picked up on the rest of the journey from the bovine udder to the human stomach. And a warm icebox does much to carry on the pernicious growth which has received such impetus from its stay in the warm air.

Milk containing excessive numbers of bacteria is not fit for infant feeding. Many attempts have been made to isolate the forms of bacteria that give rise to the summer gastroenteritis of infants which causes such an enormous mortality. Much valuable and interesting work has been done, but the danger from this source has not yet been definitely traced

to any one group of organisms.

Epidemics of diphtheria, scarlet fever, and typhoid have undoubtedly been caused by the sale of milk contaminated by the contagia of these maladies. And many of us believe the presence of the bovine tubercle bacillus in our milk a menace to the health and life of all who ingest the live organism.

We know that the typhoid and Klebs-Loeffler bacilli increase in milk with great rapidity. Whether the contagium of scarlet fever increases in quantity in milk after it is once sown there is still an open guestion. The tubercle bacillus does not seem to grow readily, if at all, in any soil but living animal tissue. But it has wonderful tenacity of life and may remain virulent for weeks and even months in a proper resting place. Tubercle bacilli probably do not multiply in milk, nor do they need to in order to become a menace to the health of every user of this The tender intestinal mucous membrane of infants is very susceptible to bacteria and their actions, and is apparently easily inflamed or penetrated by the tubercle bacilli. The mucous membrane of the alimentary tract of the human being becomes less and less sensitive as maturity approaches, and the digestive juices increase in power. It is not so easy for the tubercle bacilli to penetrate the intestinal mucosa in adults and thus gain entrance to other parts, or cause an inflammatory process within the gut itself. But with the delicate mucous membrane of the infant's alimentary canal it is an en-

tirely different matter.

It must be hard for the average medical mind to reason out the object of one of our great city dailies in taking arms against the freeing of our dairies from tuberculous cattle. This paper, with its wide circulation and its vast influence over its numerous readers, has for months prostituted its power for good by conducting a campaign against the antituberculosis movement, in which it almost daily prints the valueless and biased opinions of the most ignorant and illiterate of our farmers. If a human mother is tuberculous she is not allowed to nurse her offspring. The milk from a diseased and possibly fever racked animal cannot be as wholesome as that from a healthy one. If milk coming from a herd infected with tuberculosis can be procured unquestionably tubercle free, the best that can be said for it is that some of it came from sick animals, and that its food value is therefore lowered.

Brush, on pasteurization, has said that if we lower the nutritive value of an infant's food we lower the babe's resistance and increase its chances of tuberculous invasion; that he considers robust health a sure guard against tuberculous infection by any route; that any illness lowers the nutritive value of a cow's milk; that pasteurization of milk of a lowered nutritive value increases the objections to its use by rendering it more difficult of digestion.

Sterilized milk is almost universally used for infant feeding in Paris, and, while it has resulted in a marked diminution in the death rate from intestinal diseases, yet in young children the tuberculosis mortality has increased.

We have all had the opportunity of observing the effect of a sharp maternal febrile movement on the nursling. It would seem only reasonable to expect, that milk from a cow having a rise of temperature would be likely to upset the digestion of a bottle baby.

There are many diseases from which milch cows suffer that make the milk unsafe for food, but more animals suffer from tuberculosis than from all the other diseases. Then, too, tuberculosis is chronic and progressive in its nature, and some animals have the disease for years before they succumb to it.

It is estimated that the dairies of the United States harbor about 29,000,000 cows, one third of which have tuberculosis; and experimental tests have shown the milk from a majority of our dairies to contain tubercle bacilli. From an economic standpoint it would pay the farmer to rid his dairy of this scourge, and there is now available sufficient knowledge of cattle breeding to accomplish this most desirable result.

The enforcement by the State of the tuberculin test raises a storm of protest. The statement is ignorantly made that the test is very uncertain, because autopsy fails to expose large areas of disease in all reacting animals slaughtered. The best authorities believe it to be exceedingly accurate, and assert that even one broken down gland will cause a reaction. Nontuberculous cows are not injured by a proper dose. Its great value lies in the very fact that this test exposes incipient cases, and thus

permits the dairyman to take the precautions neces-

sary to protect his healthy stock.

Schroeder has ably demonstrated that a cow with no physical signs of disease may have millions of virile tubercle bacilli in every ounce of the thirty pounds of dung that passes her bowels daily. He also discovered that every cow with bovine tubercu-losis expelling bacilli in any way showed them in the fæces. It is easy to see how this material, scattered over almost every part of the average cow barn, is ground into dust and falls into the drawn milk from healthy and diseased animals alike; is licked by the stock from walls and stanchions, and is inhaled by the cows and their attendants. Several investigators have recently proved that the real source of most of the tubercle bacilli in milk is cow dung. It was formerly universally believed that no tubercle bacilli entered milk except from diseased udders or lungs. As there is no way of determining when an animal so slightly infected as to show no physical signs of the disease, but reacting to tuberculin, may begin to pass virulent tubercle bacilli by the rectum, the value of this test, and of special observations of reacting animals, is apparent.

Almost any unfiltered specimen of milk procured under the conditions ordinarily obtaining on the average dairy farm contains visible particles of cow dung which may have dropped off from an unclean belly or udder, or have been switched into the milk by a dirty tail. Microscopic particles of manure may fall into the old fashioned milking pail from the air or be deposited by the feet of flies.

All the sources of manure contamination of milk may be removed except the dust in the air, and in clean milking stalls that can be almost eliminated. But under the most ideal conditions some cow dung may be dried and ground into dust, which may fall into the milk with any tubercle bacilli contained in it. And if this is true airborne bacilli from the dung of a diseased cow may enter the lungs or drop into the drawn milk of a healthy animal in a remote stanchion.

It therefore seems logical to conclude that the greatest danger from the tuberculous cow lies in the infectious character of her manure.

The United States Public Health and Marine Hospital Service showed that seventy per cent, of the milk of Washington contained cow dung; that approximately one fourth of all the cattle supplying their milk were tuberculous; and that between seven and eight per cent. of that city's milk contained virulent tubercle bacilli. That this condition of affairs is not confined to Washington, or even to the United States, is shown by the findings of pathologists at home and abroad. The New York City Board of Health have found tubercle bacilli in ten per cent. of the milk entering the city in cans. The milk of Manchester, England, has been shown by Brittlebank to contain from three per cent. to twelve per cent. of tubercle bacilli at different times. Bröers, of Utrecht, gives tubercle bacillus infection for ten per cent. of the milk of Holland.

The contention is frequently made that if bovine tuberculosis is transmissible to children it must be through the milk, and if all milk containing tubercle bacilli was capable of producing tuberculosis very few of us would escape. Very few of us do escape—entirely. And just how many of those who eventually die from tuberculosis have their first, and perhaps only, invasion of tubercle bacilli from milk during infancy and childhood will probably never be known.

Let us suppose that a few tubercle bacilli enter the stomach at a time of digestive derangement and escape destruction by the digestive juices, penetrate the intestinal mucosa, and are deposited in a mesenteric gland, or may be carried to a bronchial gland, or to any remote part of the body. These few bacilli may not be able to cause enough local disturbance to produce symptoms. They may not even, at the time of deposit in their new resting place, be capable of multiplication. They may be overcome by phagocytes and destroyed, or hold their own and lie dormant, in which case, at some subsequent and possibly remote date, when the invaded individual's bodily resistance has been lowered from any cause, these bacilli may become active, multiply, and cause inflammation with all of the accompanying phenomena. We see a tuberculous gland, a joint, or an abscess as the result. And if the milk used during the few weeks or months just preceding the development of symptoms can be shown to be tubercle free the bovine bacillus is exonerated from blame. Very few men now dispute the existence of two types of tubercle bacillus, but it yet remains to be proved that bovine bacilli that have lived in the human tissues for months or years may not have become changed in type, and have acquired the characteris-

tics of the human type of organism.

There seems to be no question to an open minded student of this problem that infection takes place both through the air breathed and the food ingested. And it is only the question of just how large a percentage is chargeable to the bovine type found in dairy products, that is under discussion. Large numbers of the type of case that seems to me to be chargeable against the account of the milch cow are cases that recover, and in which we have no way of determining the type of bacillus causing the inflammation. I refer to that large group of joint and bone tuberculous lesions that come under the care of the orthopædic surgeon, and that are cured by immobilizing the affected parts and by appropriate constitutional and hygienic treatment. . Almost ninety per cent. of the tuberculous joints manifest themselves before the age of seven, or during the period of life when milk constitutes a substantial part of the diet. More than fifty per cent. of the cases of tuberculous cervical adenitis manifest themselves during the same period of life. About seventy-five per cent. of the cases of Pott's disease are well established before the age of twenty-one. I speak of this particular group of cases because of the age at which they are found—the age of greatest milk consumption-and because it seems much more probable that bacilli deposited in the ends of the long bones and in the vertebræ especially, gained entrance to the blood stream through the intestinal mucosa and the thoracic duct, rather than from an infected pulmonary tract.

There is no doubt that from a primary pulmonary tuberculous focus a general miliary tuberculosis may develop; or in cases with small lung involvement oc-

casional cases of infection of some part of the genitourinary tract may occur. And these cases, together with Hodgkin's disease and tuberculous peritonitis, are found more often in adults than in children. I believe the infection of all remote organs, even with a primary lung involvement clearly established, often takes place through the intestinal route and by means of the thoracic duct, and comes from the swallowing of bacilli laden sputum. I believe tuberculous meningitis is acquired through the same route.

It has always been exceedingly difficult to discover the source of infection in a majority of cases of tuberculosis. It seems to be exceptionally so in proving the bovine origin of any given case.

Before the British Congress for Tuberculosis Koch, in 1901, stated authoritatively that tuberculous cattle were not a source of infection to human beings. He also stated that the human type of tubercle bacillus would not infect cattle. Both of these statements have been absolutely disproved many times and by many observers since Koch made his assertions.

Shaw has stated that in the American literature for the past seventeen years he could find records of only twenty-nine positive cases of bovine tuberculosis in human beings transmitted through the

milk of diseased cows.

Since Koch started the controversy the bovine type of bacillus has been demonstrated at autopsy and postoperative in the laboratory by various competent observers as the cause of disease and death in a certain percentage of the cases studied. Notably the British Royal Commission in a study of sixty cases found the bovine type in fourteen, or almost twenty-five per cent. of the cases. It is interesting to note in this connection that in Great Britain primary intestinal tuberculosis is much more common than in other countries. The records show from eighteen per cent. to thirty per cent. at autopsy. Taking this fact and these figures into consideration, together with the percentage of cases with the bovine type of bacillus reported by the Royal Commission, milk containing tubercle bacilli looks to be a likely source of the infection in a large percentage of the cases in children. Tuberculous infection of the milk of the British isles is about as great as in any other country.

I quote the following two sentences from a recent paper on this subject with a view of refuting the argument. "Statistics from all sources show that tuberculosis is relatively rare in the first six months of life, and that the greatest number of cases occur between the second and sixth year. tuberculosis milk was such a great source of danger, the greater number of cases would appear before the second year." I have already attempted to show that it seems probable that many cases do not develop any symptoms until months or years after they become infected. I have also pointed out the high percentage of the cases that are primary in other parts than the lungs that develop before the age of seven, most of them never having any recognizable pulmonary signs. The intestinal route seems the more likely one followed by the invading bacil-

lus in these cases.

As great an authority as von Behring, who as-

serts that all tuberculosis is of bovine origin, believes that in all cases the bacilli enter the system during childhood, and in most cases remain latent for years. Calmette concurs with him in these beliefs. There are so many cases of pulmonary tuberculosis in which the source of infection seems unquestionable, that it is not easy to understand how any one can insist that the healthy husband, who apparently contracts the disease from an infected wife, really owes his illness to old latent foci of the disease which gained entrance to his tissue from the milk he drank as a child. On the other hand, we do not know that such foci may not have existed in many cases of pulmonary infection traceable to direct contact, and we cannot be sure that such an early insidious infection may not have rendered the whole organism less resistant to a frank pulmonary invasion.

Most men are agreed that there are two types of tubercle bacilli, bovine and human, that differ in virulence, cultural characteristics, and morphology. And no fair minded observer now contends that bacilli of the human type may not cause disease action of the conversely. Koch's assertions of 1901 were based on his failure to transmit human tuberculosis into cattle. Since that date it has been ac-

complished experimentally many times.

There is no doubt that adult cattle are much more easily infected with the bovine type of bacillus than with the human. But we have not yet proved that, under similar conditions, the bovine type of bacillus is less infective to human beings than is the human type. I believe the young animal, whether baby or calf, is much more susceptible to either type than the adult of either species. It is an accepted fact that certain germs lose their virulence for some species of animals after passing through certain others, but yet prove still more virulent to a third species. It is not true that the tubercle bacillus loses its virulence for cattle by passing through man, although its virulence is much lessened.

Experiments showing the comparative susceptibility of animals to the human and bovine types of bacilli have been conducted by de Schweinitz, Dorset, and Schroeder, on calves, pigs, monkeys, guinea pigs, and kittens, in which every animal used was tuberculin tested and found tubercle free. All animals were kept under the conditions necessary to make such work scientifically reliable, and the infection was introduced through the alimentary canal in

milk.

Tubercle bacilli of human and bovine origin possess equal pathogenic power for hogs. The human type of bacillus causes tuberculosis in thirty-three per cent. of calves; the bovine type in one hundred per cent., showing that the human type is only one third as infective to the young of cattle as is the bovine type.

Both types of cultures are highly infective to monkeys. Young cats are susceptible to either type of organism. Guinea pigs are susceptible to both

types of bacilli.

Debroklonski says tuberculosis may certainly infect animals through the digestive tract. He found that the tubercle bacillus will pass through the nor-

mal intestinal mucosa, and may do so without leaving any trace of its passage.

Another observer fed sixteen young pigs on milk from tuberculous cows. In all the disease developed, and autopsy showed only one primary intestinal lesion, but diseased mesenteric and cervical glands in all. Tjaden believes the majority of our cases of tuberculous cervical adenitis in children may be caused by infected milk, and that infection through the intestines is not often accompanied by intestinal lesions.

These observations make it clear that the tubercle bacillus finds easy access to the animal economy through the intestinal mucosa; that the bovine and human type of bacilli are equally infective to most animals, cattle, however, being three times as susceptible to the bovine type as to the human, and that young animals are readily susceptible to food infection.

There is no longer any doubt that the bovine type of tubercle bacillus can and does infect man. The only point at issue is the percentage of cases infected that can be laid at the door of the cow. I believe that few, if any, adults acquire tuberculosis by the ingestion of infected milk, butter, or cheese. Is teems reasonably clear that the great danger in the use of contaminated dairy products is for children, especially young children, and that the special source of danger lies in infected milk. Butter and cheese form a negligible part of the diet of children under six years, and, while they have recently been found to be infected with tübercle bacilli to an alarming degree, I believe they do not constitute a very grave danger for children.

If we are agreed that infected milk is undoubtedly capable of causing human tuberculosis, the question of just what percentage of human disease is due to this source is second in importance to the problem of ridding our milk of this menace to our

childrens' health and lives.

There are two possible methods of accomplishing this result—to free our dairies of tuberculosis, or to so treat all infected milk that the contained tubercle bacilli are destroyed. Obviously the proper procedure for many reasons is to clean up the dairies. It would be the ideal thing to do. But between the accomplishment of this tremendous task and the present status of dairy conditions, we have an economic problem so vast that it has a marked deterring influence over every move in the right direction. The expense entailed by the destruction of dangerously tuberculous milch cows; by the sequestration of those reacting to the tuberculin test; by the special examinations necessary to determine when an animal with latent disease becomes a menace to the consumers of her products; by the improving of the animals' quarters, the milk house, and the apparatus for cooling and handling the milk. cannot be borne by the individual farmer or by the dealer. At the present market price safe milk would have to be produced and sold at a loss in most instances.

And yet the State would hardly be permitted at this time to shoulder the burden of the expense of destroying all dangerous cattle and of making the changes necessary at most of our thousands of farms. An adequate inspection alone, together with the maintenance of a proper laboratory staff and equipment, would cost the State a tremendous sum annually. In the long run I believe it would pay; and I am optimistic enough to believe that within the next decade a movement to have the State shoulder the responsibility of vouching for our milk will be well under way. It will mean an appreciable advance in the price of milk. Nearly all other necessities have advanced steadily in the past twenty years, and we ought to be willing to pay a fair price for milk. It may be necessary for philanthropy to come to the assistance of some part of the masses in providing a higher priced milk for their children, but that would be a far pleasanter charity to assist than the building and maintaining of sanatoria, hospitals, orphan homes, departments of charity, and the potter's field. Society as a whole is the loser through the loss of the work, the health, and the lives of its workers. And society is benefited by every movement which helps to improve the conditions and health of the poor and the working class. Good, pure, clean milk for the whole country, for rich and poor alike, would be a benefit to society at large, and society, the State, must pay the price.

The advantages of so treating contaminated milk that the tubercle bacillus is surely destroyed are more than counterbalanced by objections to this method of insuring its safety. Heat seems to be the only agent that we are at present free to use to destroy bacteria in milk. Boiling, sterilizing, and pasteurizing at 167° F. for twenty minutes will render milk sterile. The greater the degree of heat used theoretically the more difficult infant digestion of the milk becomes. And, while the bacteria themselves are destroyed by a sufficient degree of temperature, their products are still in the milk and may

Pasteurization seems to be a lax term indicating the heating of milk at some temperature below 180 F. for varying lengths of time. In the work of the St. John's Milk Dispensary we have found that a temperature of 167° F. maintained for twenty min-utes renders most of the milk we receive sterile. The bacterial content of the milk delivered to us in cans varies from 50,000 to 280,000 in 1 c.c. work of Freeman and others, who have found that a temperature of 140° F. maintained for forty minutes kills the tubercle bacillus and all other pathogenic bacteria, induced us to try the effect of this technique in our dispensary. The results were determined by bacterial counts, in which we found from 1,000 to 6,000 bacteria in 1 c.c. As we are nearly always able to get a sterile product at 167° F. for twenty minutes, and as bacterial growth is very rapid in milk that has been heated, we decided to stick to our old method. It has been proved that a temperature of 140° F. will not destroy the enzymes of milk and will kill all pathogenic bacteria contained. But, considering the fact that heat destroys the bactericidal action of milk, and the fact that the testimony is conflicting as to its comparative digestibility raw, pasteurized, sterilized, and boiled, the value of the enzymes in aiding its digestion is really not satsfactorily proved.

There is some evidence pointing to pasteurization as the cause of rickets and scurvy, but except in the

case of very young and feeble infants this danger seems to be negligible. In France, where sterilized milk is widely used, infantile scurvy is unknown.

Advocates of pasteurization assert that this process renders milk more digestible than the raw fluid, and point out that most other foods are cooked. The scope of this paper will not permit of a careful consideration of all the many mooted points relative to pasteurization.

To state the matter briefly, infants naturally depend on raw human milk for sustenance. Where this is not available, or proves unsuitable in a given case, cow's milk is the best substitute, and raw cow's milk, properly modified, is certainly a more natural food for a nursling than milk which has been heated.

For older children and adults heated milk may have no serious objections to its use. For infants in hot weather pasteurized milk is a safer food than questionable milk of uncertain bacterial content.

And this brings us back to the main point at issue, namely, the prevention of the presence of live tubercle bacilli in market milk. And general pasteurization of milk is certainly the easiest way of accomplishing this end. It is also the most slovenly and unbusinesslike method of accomplishing a desired purpose. It is curative when our efforts should be preventive.

The knowledge that all milk is to be rendered sterile by heat leaves no inducement for the enterprising, clean, and up to date farmer to produce a high grade of milk for which he could obtain a fair price. It puts no ban on dirty utensils, diseased cattle, filthy methods, and improper transportation facilities. Old, dirty, germ laden milk may command just as good a price as the best product of the most modern dairies if it bears the stamp "pasteurized." General pasteurization of milk, whether performed by dealers or municipal bureaus, robs the producer of all incentive to produce clean milk low in bacteria, and puts a premium on filth and disease in our milk.

In conclusion, I may say that the presence of living tubercle bacilli in milk constitutes a grave menace to the public health. The danger is greatest for bottle fed infants, next in gravity for children under five years, and least of all for older children and adults. The only sure and satisfactory method of removing this menace to health is to free our dairies of tuberculosis, and that once accomplished, to keep them tubercle free.

Pasteurization of milk used for infant feeding during hot weather is often desirable, but the greatest purpose served by so treating it is the prevention of gastrointestinal disorders, not tuberculosis. Summer pasteurization of milk alone should be countenanced, and this does not protect the infant from the tubercle bacillus except for a small part of the year. General and constant pasteurization of market milk should not be permitted to displace strenuous and proper efforts to rid our dairies of tuberculosis, as such a course under the best management will merely give us a product free from living organisms, but possibly rich in dead bacteria and their products; and will leave no incentive for the production of clean, wholesome milk.

IST PARIS ALSET.

TUBERCULOSIS.

A Clinical Problem in the Tenements.*

By R. A. Taylor, M D., New York.

The subject of tuberculosis is just now engaging the medical mind of the whole world, and laymen are so well acquainted with its various phases that I must apologize for intruding on your time on this occasion. But I am compelled to help lay the matter bare before you, because it seems hard to remember that tuberculosis retards our progress, that tuberculosis kills.

In this necessarily brief paper, I shall assume that this well informed audience is sufficiently acquainted with the subject to help me to discuss it as a prob-

lem of the tenements.

As you well remember, tuberculosis is an infectious disease caused by the *Bacillus tuberculosis*, whose invasion of any part may be followed by local or by general pathological changes. Since it is more or less manifest in certain anatomical structures, it is found convenient to designate it after these parts; but the process is not in consequence localized; for a general tuberculosis may result from very slight local manifestations. We find it as an acute infection or as a chronic process. We find it invading bone tissue, lymphatic glands, internal organs, and even the brain; but the form in which it appears most frequently is the pulmonary; and with chronic pulmonary tuberculosis we have mainly to deal.

We may realize, perhaps, the enormity of the subject when we consider that in this State alone 95,000 persons are constantly sick and 14,000 die annually of pulmonary tuberculosis. Coming still closer home, we can say that, although the death rate in New York city is reduced by one half in five years, yet statistics show that not less than 30,000 persons are constantly crippled, impoverished, and menaced by death through pulmonary tuberculosis alone.

That I may the better enlist your sympathy and cooperation for measures likely to be proposed, I must tell you, though only briefly, that a vast amount of work has already been done to aid suffering humanity against this scourge; and that there has fallen in this battle such an army of physicians that it would appal you if I but mention the number; for consumption has been investigated and combated since the dawn of medicine. But when the nineteenth century brought advanced ideas and finer instruments of precision, medical investigation received a remarkable impetus; and foremost of the achievements of this age of experimentation was the immortalizing discovery that tuberculosis, or consumption, was caused by the bacillus of Koch.

Around this discovery have been heaped the findings of workers in every nation; and upon this have been built many systems for the elimination of the plague. Most of these are only too well known to need rehearsing; and every one present has much knowledge of the efforts made to keep milk and meat free from tuberculosis taint. Still, tuberculosis makes headway; until now, almost in desperation, medicine has come to claim the sun, air, and fields. that, through skill acquired, it might press them into

the service of healing.

For it must truthfully be said that the sanatorium, wherever properly conducted, has proved an unqualified success. Yet, on this very account, since it has taught us the value of sanitation and hygienic living, it has also defined the limitations of the results of treatment, and marked them as consequent upon the stages of the disease, and upon the extent of tissue involvement. The sanatorium has opened our eyes to the difficulties of early diagnosis; to the unsuspected extent of the disease itself; and, therefore, more than ever, we see the subject as a problem of the home.

We may almost, without concern, pass by the higher types of homes; for, unfortunately, tuberculosis is a disease mainly of the poor, and the tenements typify it. After much deliberation and expensive experimentation, leaders of medical thought seem at last to conclude that, if great gain must be made in this combat with the disease, we of the tene-

ments must do the bulk of the work.

But, to successfully combat the disease in its stronghold, we need to mark the conditions which aid the specific germ. Indeed, some workers believe that, except for the aid of outside influences, the *Bacillus tuberculosis* is not actively harmful. We need, however, not challenge this statement, because these aids are ever present among the poor. For the tenements are close, dark, damp, and almost always overcrowded. The average dweller lacks food, heat, and clothing in winter; he lacks fresh air and sound food in summer, and through all the seasons he lacks the knowledge necessary for self preservation.

The average tenement in this city, until lately, lacked facilities for cleanliness; and the foul influence it generated and disseminated did not conduce to the promotion of diligence in matters of health; so that the average dweller became as one with his quarters. And here, also, one finds the extreme of sociability; you can share with the average poor man his bowl and pipe, his meals and bed; he asks no

questions, but welcomes you as you are.

It would be superfluous to go into details as to how these matters aid the development and spread of the disease. I had better quote from a recent writer. He says: "At 18 Clinton street, back in the rear tenement, a young Bohemian Jew lay dying of consumption. I had come in with a Jewish doctor. With every breath I felt the heavy, foul odor from poverty, ignorance, filth, disease. In this room, ten feet square, six people lay on the floor, packed close, rubbing the heavy sleep from tired eyes, and staring at us dumbly. Two small windows gave them air from a noisome court-a pit twenty feet across and five floors deep. The other room was only a closet six feet by seven, with a grated window high up opening on an air shaft, eighteen inches wide. And in that closet four more were sleeping, three in a bed, one in a cradle. The man's disease was infectious, and yet for two long weeks he had lain there dying. From his soiled bed he could touch the one table where the two families ate; the cooking stove was but six feet from him; the cupboard over his pillow." After more details of description, he adds: "There are 361,000 such closets in the city.

Since we now possess larger light on the subject, we can the better face the great question, "How shall we handle tuberculosis in the tenements?" And

^{&#}x27;Read before a meeting of the National Medical Association, held at St. Mark's Church, New York, August 25, 1908.

here let me impress upon you the idea that this question deeply concerns high and low alike; for there is none but must come in contact with these tenements. We must help the Chinaman, for he tends our laundry; the Jew, since he makes our clothing; the Italian, for he provides our fruit; and so on through all the ramifications of our complex social life.

And we must, also at the outset, put aside any preconceived notions concerning heredity, and think of tuberculosis as an infectious disease. For until we get this idea deeply rooted into our minds, we cannot comprehend the measures looking towards the eradication of the disease. We must repeat it again and again in church and lodge room, at home and abroad, that consumption, which carries off our most promising and our best loved ones, is an infectious disease communicated by the ordinary means of social intercourse; and is not the sin of the fathers visited upon the third and fourth generations. cannot imagine it necessary to adduce proof before this convention: for even if the time permitted, the balance is so largely in my favor it would embarrass me to lay argument before you. I therefore cite you one instance only in support of my contention: In a small town in North Carolina, a consumptive white man died in his house. The rest of the family, for one reason or another, left for distant parts. house was closed for ten years until a colored family rented it. They used the rooms except the one in which the man had died. For some reason they kept this one closed most of the time. But they began to sicken, and in a very short while consumption had wiped out the entire family. So well known and so robust had they been that the board of health took pains to investigate the matter, and they obtained pure cultures of virulent bacilli from the bed posts and from the walls of the room which the colored people had not occupied. I may mention that the then president of the board of health, who gave me the facts, had been for almost two generations the physician of that colored family; and he asserted that no case of consumption had ever before been known in that family

By what channels the infection enters the system, whether by the alimentary or by the respiratory, admits of too much controversy; for competent authorities assert the one, and equally able men swear by the other; but suffice it to say, that all possible channels of infection should be guarded. For what does it matter that tuberculous cows be destroyed while we preserve the consumptive chickens and pigs? What does it matter that you avoid direct contact with the consumptive man when you both fondle the same domestic cat?

But since we must come in contact with this disease, we ought, therefore, to take sane measures to insure our safety. Of those means now at our command, sanitary instruction to the afflicted and similar instruction followed by the healthy, show the best results. Suitable occupation, rest, diet, fresh air, sunlight, and cleanliness are powerful factors in establishing protection, though they may not insure manually. And we ought, also to think about vital capacity in our children, beginning with the prospective parents; and in infancy and childhood develop them by careful diet, physical culture, and

other hygienic measures, so that we may promote in them a blood of high bactericidal power.

Upon measures to cause recuperative blood reactions, the medicine of the future is now based. A vast amount is being done to obtain a serum or some other material whose introduction into the body will cause blood changes sufficient to arrest or to cure tuberculosis in any stage. We are almost on the eve of the developments that will insure immunity to tuberculosis, whether or not these discoveries bring to light a cure. It is yet too early, however, to speak of the opsonins or to lay too much stress upon any laboratory product; but we are approaching relative immunity, and attention to hygienic measures will shorten the distance.

Now, the effective carrying out of the ordinary hygiene of the tenements depends, in great measure, upon the simplicity of the procedures. But to get even simple matters attended to, however, the people must be taught to regard them as necessary.

Physicians and organizations such as this must find ways and means to convince them that tuber-culosis is infectious and communicable. We must disseminate the knowledge that it can be prevented if the living conditions are suitable; that sunlight, fresh air, rest, food, and cleanliness strengthen the individual and weaken the germ; and that it is possible to secure these valuable aids.

For instance, should the layman ask, "How can these things be done in tenements as they are to-day?" we make answer that the penetration of sunlight can the better be accomplished by having as little drapery as possible; and that the light will be augmented and diffused if the walls be white and the furniture not too abundant. Ventilation can be secured without draught by the many simple window devices happily found everywhere; and the skillful physician may, in winter, press the lace curtains into his service, though fashion meant to rule against him. House cleaning becomes easier when the rooms are not so crowded with furniture, bric-à-brac, rugs, easels, and stands, which at times make walking perilous.

But if they become victims of the disease, what then? In the light of present knowledge one is never too early to seek skilled medical service if benefit or cure is to be obtained, for the cure of consumption is almost limited to early cases.

Before such a gathering it would be unnecessary to define an early case; but it might not be out of place to remind you, since most of us are limited to the practice of the tenements and their like, that the diagnosis of tuberculosis in its incipiency is, for the most part, very difficult. And yet it is here that all our energies must be concentrated if the spread of consumption is to be arrested; for to the large army of tenement physicians will fall the burden of the necessary painstaking investigations. Here the busy man must accustom himself to the evidences of the disease in dim light and cramped quarters, where answers are evasive because of peculiar insurance clauses, fear of isolation, and other social reasons.

And here must eye, ear, and touch acquire especial acuteness; for, although in this and other cities the public service provides everything for expert diagnosis, the people do not avail themselves of

these privileges until cough or hæmoptysis develops. The very necessities of the case, then, compel us to rely for the diagnosis of early tuberculosis on the older methods of inspection, and so forth. And I would impress upon those of my fellow workers situated far away from laboratory facilities that they need be not one whit backward if they train the special senses.

These family physicians can and must watch for the family; and should see that they do not expose themselves to infection; or when exposed must search diligently for evidences of the disease. For rarely does it happen that an experienced practitioner accustomed to life among the lowly need be so perplexed that laboratory diagnosis becomes a

necessity.

December .c. o S.

When such is the case, however, one can turn for more light to several laboratory methods more or less helpful. Without special skill, for instance, a modified Calmette's solution of tuberculin may bring about the so called ophthalmoreaction. I should mention the x ray, because it has become a familiar office appliance; but, to say nothing of the difficulties of technique in skiagraphy, I fear few of us would be satisfied with our findings. The microscope is too common to need mention, especially as its findings are relatively late.

The opsonic index, which just now is on every lip, has not been sufficiently tried to warrant sound conclusions; but I would recommend it to this body as worthy its serious attention. There are modifications in the technique which may enable even the less skilled worker to investigate on his own be-

half.

Still, these finer methods are only secondary and are resorted to only if we have been alert enough to suspect tuberculosis. The tenement physician will, therefore, watch his family and will consult his laboratory upon occasion. And the tenement worker will need to watch also that unknown quantity represented by boarders and other migratory persons. Here the chances for continued observations are not so good; and yet, in a general way, considering the peculiarities of the case, much can be done if organizations such as this hold meetings and distribute literature to popularize the subject, so that the physician may find people more anxious to inquire of him.

In this way we may see many an early case, sent by neighbors and friends of these itinerants, cases which ordinarily would have consulted the patent medicine vendors until too late for skilled treatment. Here, then, is one way of caring for a patient, and so protecting many unsuspecting intimates and asso-

ciates.

But to approach the matter more squarely, what are we going to do when these people come to us? The State and the private sanatoria prove to us the great benefits of rest and abundance of light in the open air; but it is plain that for these people, whom we represent, there will be no rest in the open air except we could follow the example of the charities organization of this city in making up for loss of wages, paying rent, and so forth. This is an exceedingly large project, and the money necessary to carry it out puts it beyond the range of effectiveness at

Neither does the question of change of occupation apply to them, and moving to more suitable quarters is little more than a popular saying; so that, if we tend these people with hope of cure, we must treat them where we find them.

Foremost, then, among all measures to be taken will be the lessons in sanitation, which we, as physicians, must find ways and means to instill into them. It is surprising how much can be done in this way, even in the most squalid quarters. Under one pretext or another one can, in twenty-four hours, transform many a dingy corner into a habitat of cheer. For instance, it is well known that workers in

lime arrest and even escape consumption. Taking advantage of this knowledge, one may have the family whitewash the walls, ceilings, and cellars. the family may get a breath of outside air, while a sulphur candle "kills the germs." The baby, even in an improvised carriage in the back yard or on the sidewalk, will cause the mother to frequently open the window and breathe fresh air. The scrub brush may be made a toy; a new style of bed making will cause many a hidden thing to disappear: and many ways will suggest themselves to a tactful physician for beneficial yet inoffensive changes. But I would caution you that this is a physician's privilege, not to be shared by any other person; and I can assure you that if you properly approach these people you can turn most of these tenements into miniature sanatoria.

To build up resistance by other than hygienic means we may have to resort to drugs; and, if so, the selection and direction must be left to the physician. We cannot go far astray with drugs, if, first of all, we know their value and their limitations. The blood must be built up by measures directly applied, if such there be, or by measures to prevent hæmolysis. The therapeutist will know what is best for his patient.

Surely, there can be no one in this association who has not seen great good from arsenic, nux vomica, opium, bone marrow, codliver oil, diet, alcohol; and the use of these must now, when subjected to the skilled therapeutist, prove as potent as in the past.

Nor can any one doubt the value of attending to pressing or to annoying symptoms. The intelligent physician will use drugs whose value he has tested, and will employ the route of administration most effective in each given case. But I venture, because of the inconveniences of tenement practice, to suggest hypodermic medication as presenting special

advantages.

As yet there is no reliable specific, nor any routine treatment, that has proven effective or convenient for tenement work; but remarkable results can be had if we utilize all the knowledge we now possess of hygiene and blood building. And I am impressed with the belief that, given intelligent cooperation by the laity, we can, with these means now at our disposal, cure most incipient cases, and raise the blood index so high in the tenements as practically to exterminate tuberculosis.

But the problem assumes its greatest gravity when the consumptive finally takes to bed; for anxious visitors who bend over him to sing and to pravinhale particles of sputum. The ordinary individual. even when advised, will not try to protect others; and when the days of fast failing strength overtake him, those around will find it well nigh impossible

to escape droplet infection.

And when we remember the large number of beneficial orders, the solicitous neighbors, the friends and relatives, who, through humane feelings, are ever exposed to such a dread possibility, one cannot wonder at the spread of tuberculosis. So long as it must be done, these hopeless cases also must be treated in the tenements; but the hardships of incompetent nursing, the difficulty attending the handling of the sputum, the wear and tear on the overworked bread winner, all call loudly on this convention for help.

I would, therefore, recommend that this National Medical Association take steps in all congested communities to provide suitable places for such persons, as must through necessity need them, to pass their remaining days; near enough that they seem not neglected by relatives and friends, yet sufficiently distant and isolated to avoid wholesale infection.

And the layman will do his duty and render his share of service by creating in his community such a feeling of common brotherhood that would cause it to spare no pains in making this place at once attractive in appearance, inviting and comfortable within.

267 West Fortieth Street.

CONTRIBUTION TO OUR KNOWLEDGE OF THE .ETIOLOGY OF DEMENTIA $PR\Breve{\mathcal{R}}$ COX.*

(Preliminary communication.)

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(Concluded from page 1068.)

Sociological Conditions and Occupations .-"Other causes, such as the herding together of the proletariat in great cities, in bad rooms or tenements with insufficient food and unhealthy employment undoubtedly weaken the nervous system, etc.' (Forel). Most, if not all, of my patients came from the congested districts of greater New York; they lived in tenement houses; they were deprived of light, proper sanitation, fresh air, and good food; they worked in sweatshops for means of getting their livelihood; they were in constant struggle and strife for the maintenance of their existence. Some of the married women were compelled to work in shops, in addition to their housework, in order to support the family. Seventy-two patients did housework; thirty-three were employed in shops; three had positions in stores; eight were dressmakers; two were bookkeepers; three stenographers; one a governess; one an attendant in a hospital for the insane; two clerks; one a student; four had no occupation.

Sex.—Dementia præcox affects both sexes. Deny and Roy believe that this disease is equally distributed in both sexes. According to Kraepelin sixty four per cent. of hebephrenics were men, fifty-eight to fifty-nine per cent. of the catatonic and paranoid forms occurred in women. Women were the majority of Croq's cases. All my patients were females.

Previous Diseases.—Some authors state that meningitis and trauma in childhood or early adolescence should be considered as predisposing factors in the ætiology of dementia præcox. However, Kraepelin gives no recognition to such views.

In my patients a history of the following affections, in addition to the usual diseases of childhood, was obtained:

| Name of the disease | Number of ca |
|----------------------------------|--------------|
| Head injuries | 7 |
| Convulsions during childhood | 3 |
| Tardy coordination and dentition | |
| Meningitis | 2 |
| Deafness | |
| Indigestion | I |
| Constipation | 2 |
| Psoriasis | |
| Dy-menorrhœa | 10 |
| Headache at the menstrual epochs | |
| Excessive flow | |
| Interrupted menstruation | 9 |
| Irregular menstruation | 2 |
| Eczema | I |
| Urticaria | |
| Neuralgia | I |

Masturbation.—The question whether or not masturbation is an important cause of insanity is still sub judice. "Venturi, a well known Italian alienist, regards masturbation as strictly physiological in youth; it is a normal and natural passage toward the generous and healthy passion of early manhood; it only becomes abnormal and vicious, he holds, when continued into adult life." (Havelock Ellis).

Stanley Hall asserts: "In discussing the results of onanism, we must first of all recognize that the immediate and sensational effects often seriously believed in, and often purposely exaggerated for pedagogic effects, are not so immediate or disastrous as represented in both the popular and the earlier literature. The brain is not literally drained away, dementia, idiocy, palsy, and sudden death are not imminent, nor is there any peculiar infallible expression, attitude, or any other manifestation instantly recognizable by experts. Current impression to this effect has much to do in causing terror, shamefacedness, and some of the bashfulness, and solitude seen."

According to Freud the erotegenic zone in men is extensive and its reactions are manifold. For instance, he asserts, that the suckling of a baby, apprehensive states, unnatural love of a child for parent, constipation, etc., are types of morbid sexual gratifications. If such a conception of masturbation is accepted, then a skeleton could be found in the closet of every individual, irrespective of nervous or mental affection.

Aschaffenberg thinks that neither onanism nor abstinence causes a mental disease, but the imaginations which are associated with this abnormal act. Masturbation can only then exert a pernicious influence when it is carried on in a senseless manner, or the patient shows a marked predisposition to neuroses or psychoses. Denv and Roy believe that exaggerated masturbation may act as a debilitating Ziehen states that onanism is given as a cause by patients for their mental disturbance on account of their self reproach and hypochondriacal ideas. "It is possible," continues the author, "that its ætiological significance is only slight, yet it cannot be excluded; in a few cases excessive onanism through its exhaustive influence associating with abnormal psychical irritability may aid the development of a psychosis. In many instances excess of early developing onanism is a symptom of an underlying psychic disease." Kraepelin alleges that the persistence of masturbation should be considered not a cause, but a symptom of the malady. "On many grounds," says Kraepelin, "we speak in favor of sexual life, which undoubtedly plays an important rôle in this disease (dementia præcox), but not under any circumstances can onanism be

ascribed as the cause for it.'

In my patients to obtain a reliable history of masturbation was by no means possible. The laymen regard onanism as a vice which they do not wish to readily admit, in a female especially. Whenever a mother or a sister is questioned about patient's sexual life, the usual reply is "Oh, my Minnie is not such a kind of a girl," or "she is too proud to do such a thing," etc. Again, one cannot rely on the patient's information, because it is either exaggerated, minimized, or denied. Thus in my cases the evidences of onanism were adduced from gynæcological examination. A reddened vulva was considered a positive sign; a lacerated hymen in absence of gynæcological affections was regarded as suspicious; married women were not accused of being addicted to this habit. Twelve and thirty hundredths per cent. were positive; nineteen and twenty hundredths per cent. were suspicious; sixty-four and forty-eight hundredths per cent. were negative. To be sure, these data cannot be considered scientifically accurate. It must also be emphasized that in those patients, who presented positive somatic stigmata of onanism, there were other ætiological factors which were responsible for the mental maladv. It must be remembered that these signs were detected only when the psychosis was fully in progress. It is questionable whether masturbation in these patients was an effect rather than causative. Better methods of psychopathological analysis, and careful anamneses, will, in the future, solve this important and difficult problem.

Civil Conditions.—From the statistical data so far adduced it appears that the majority of cases of dementia præcox occurs in the unmarried. Tschisch believes that sexual abstemiousness in a strong constitution is an important ætiological factor in the production of catatonia. This author draws his conclusions from a limited number of cases, and, moreover, his patients came from a low strata of

civilization.

In the chapter on age it was shown that a great number of cases occurred at such period when matrimony would at the present time be considered impossible on account of economic difficulties, and in some instances consummation of marriage would be regarded as illegal. It must not be forgotten that married life in itself offers a favorable soil for the development of this disease. For instance, conjugal discord, abortion, childbirths, puerperal affection, etc.

Last year one hundred and seventy-two cases of dementia præcox were admitted to the west division of Manhattan State Hospital; one hundred and fif-teen of them were single; forty-six married, and eight widowed, and three were separated from their husbands. In my series of cases the civil conditions were as follows: Eighty-three single; forty-six married; one widow. In nine, married life was decidedly gloomy. In four, husbands contracted syphilis before marriage. Out of these forty-six women, six had no children, and in the others the number of children varied from one to six, as will he seen in the following table:

| Number of women | Number of children cach woman had |
|--------------------|-----------------------------------|
| 10 | 1 child |
| | |
| | |
| | |
| | |
| I | 6 children |

Pregnancy, Childbirth, Puerperium, and Lactation.—In twenty-four per cent. of Kraepelin's cases of dementia præcox, pregnancy, and childbirth were considered as causes. Of Aschaffenburg's 132 puerperal cases, forty-six were dementia præcox. He classified them according to their respective periods.

| Period. | | of cases. |
|-----------|----------------|-----------|
| | toward the end | |
| | | |
| Lactation | | II |

In Munzer's 101 puerperal cases, fifty-three belonged to dementia præcox group; eleven of them occurred during pregnancy, twenty-eight in puerperium, and fourteen in the lactation period.

Of my 130 patients, only twenty-one developed dementia præcox during pregnancy, puerperium, and lactation. They may be tabulated under the following headings:

| Period. | | | | | | | | | | | | | | | | | | | | | | | | | | | lumber cases. |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------|
| Childbirth | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pregnancy Lactation | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lactation | ۰ | ٠ | ۰ | * | ۰ | ۰ | ۰ | ٠ | ۰ | * | ٠ | ٠ | | - | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | ۰ | U |

The relation of these patients to psychotic traits and heredity may be shown by this table:

| Period, | chotic traits and | Psy- chotic traits only. | Heredity | No hered- ity or psychotic traits. | |
|------------|----------------------|-----------------------------------|----------|---|---|
| Pregnancy | . 2 | 2 | I | I | 6 |
| Childbirth | . 2 | 2 | 3 | 2 | 9 |
| Lactation | . 0 | 0 | 4 | 2 | 6 |

Trauma.-It is generally conceded by such careful observers as Kraepelin, E. Meyer, Deny and Roy, Croq, Muralt, and others that trauma is an exciting ætiological factor in dementia præcox, especially of the catatonic form. However, it is by no means of frequent occurrence. Croq, in his 300 cases, found only four in which trauma was ascribed as a cause. Muralt recorded seven cases of catatonia of a traumatic genesis.

Only in two of my cases injury to the head was held responsible for the mental malady. Both of

them showed catatonic features.

The following are complete records of these pa-

Case VI.—Kate M. Admitted November 29, 1905. Æt. twenty-five; single; Ireland.
Family history: Negative. except that paternal second cousin was somewhat eccentric, occasionally laughed and smiled to herself, fond of solitude, easily frightened, was never committed to a hospital for the insane; she lived and held a position as school teacher in Ireland. Father suffered with rheumatism.

Personal history: Patient's early childhood was, as far as is known, uneventful. She entered school at the age of three and a half, and graduated at the age of fourteen. She was always quiet, somewhat deaf, but fairly cheerful and bright. At ten she sustained an injury to her head.

but no serious consequences resulted. Catamenia appeared at fourteen, complained of pain during the flow. At seventeen menses ceased for six months. In Ireland she worked for her mother and in a dressmaker's establishment.

She immigrated to the United States in 1898, and here she was employed as domestic. In this capacity she was efficient. In January, 1902, she fell off from a trolley car, sustained indefinite injury for which no medical aid was

necessary.

In the early part of February, 1902, patient began to suffer with insomnia, and frequently mouned and groaned in her sleep. In the latter part of the same month she became suddenly apprehensive; commenced to talk to herself; came suddenly apprehensive; commenced to talk to herself; refused food because it contained poison; imagined the conductors on the cars were going to kill her; thought her sister would send her away. She became very religious and prayed all day long. She heard voices on the street and still maintained the idea that the conductors would kill her. She was very depressed, was frequently subject to crying spells which she was not able to explain. She was then cert to Rellegue. then sent to Bellevue.

In the psychopathic ward patient was depressed, consumed most of her time in crying; however, at times she smiled. On admission here, March 7, 1902, physical examination showed nothing abnormal. Mentally she was depressed, had no adequate appreciation of her condition, and was somewhat confused. On the next day patient was dull, perplexed, obstinate, took no interest in her sur-roundings, and was mentally inaccessible. In April, 1902,

patient was restless, excited, quarrelsome, and was noted as simple and childish in her manner. She frequently talked to herself, and was extremely untidy about her personal appearance. At times she was destructive, noisy, ex-citable, yet at other times she was dull, indifferent, and would manifest no interest in her surroundings.

On October 30, 1905, patient was allowed to go home on parole, contrary to the advice of the superintendent. Her condition on December 28, 1904, was described as follows: Patient is dull, simple, laughs in a foolish manaer, answers no questions, and assumes a sitting posture all

During her two months' residence with her sister patient was at first able to do some housework, as, for instance, dry dishes, do a little dusting, etc., provided she was urged to do so. She would answer questions relevantly. As a rule she would assume a sitting posture and look out of the window, apparently taking no interest in her surroundings. She attended to the calls of nature promptly. At times she was talking to herself; this was usually observed in the morning. About two weeks before admission to Bellevue Hospital patient refused to do housework, would not answer questions, paced the floor to and fro, and would continually ask for more food. She was then taken to Bellevue

On admission here physical examination showed fair nutrition, deep reflexes increased, organic reflexes impaired, dullness over upper and lower lobes left side, pleural friction rubs on right side, râles over apices and lower left lobe, bronchial breathing, crepitant and dry râles on lower right side, and cardiovascular apparatus apparently normal.

Mentally, patient was markedly indifferent, smiled in a childish fashion, held her left hand firmly over the mouth, and refused to answer questions. She did not comply with and retused to answer questions. The did not compy any requests, indulged in many mannerisms, and was markedly resistive. The following is a sample of her spontaneous production: "Go home-don't you dare take no plank to home and mind your business."

hit me with the poker—get up and mind your business." On the next day she talked constantly to herself, showed a tendency to maintain fixed attitudes, no delusions or haltendency to maintain fixed attitudes, no delusions or nat-lucinations were established, although it was observed that she frequently repeated the following phrase: "Don't you hit me with the poker! Don't you hit me with a broom!" Her condition remained without important change till the the resident, which control on Max 11, 1007 from pul

monary tuberculosis.

CASE VII.-Ida C. Admitted to this hospital, August 1, 1 119 Russia (Hebrew); single.

Family history: Maternal aunt tuberculous

Personal history: Patient was born in Russia in 1882. During gestation mother suffered from uterine hæmor-

menstruation was late, irregular, and accompanied by head-

At twelve she sustained injury to her head. Two weeks later she commenced to talk in a foolish fashion, was depressed, cried without cause, imagined there was a fire, and pressed, cried without cases, magine there are frequently spoke of it. At night she was restless, Her speech was incoherent. She was nervous and excitable. Ouite often she would be angered and resistive. This con-Quite often she would be angered and resistive. This condition lasted one year. When excitement subsided, she was considered mentally deficient. She did not return to school because it was feared she would not be able to get on with her studies. At frequent intervals she was subject to a spell of excitement, during which time she was incoherent in speech, irritable, and showed peculiar behavior.

At the age of eighteen she came to the United States,

and was here employed in a shop.

About one year before her removal to Bellevue Hospital she became depressed, could not work, would remain in the house, could not sleep at night, said people wanted to injure her, and was afraid that she might do some harm to others. She became forgetful, would lose her way, and at times was much excited.

When admitted here on August I, 1903, she was quiet; smiled in a childish fashion; answered in monosyllables; turned her head away from the examiner in an indifferent manner; offered nothing spontaneously; was not accessible mentally. A few days later she became extremely restless. whined, jumped up from bed and yelled at the top of her voice, and manifested assaultive acts. She was not able to

explain her peculiar behavior.

During her residence in this hospital patient's condition remained without important changes. At times she was quiet, somewhat irritable, industrious, manifested but little interest in affairs of life, and appeared simple and childish. When questioned she laughed and did not seem to view her situation seriously. Quite often she became disturbed, much excited, made grimaces and gestures, gave forth incoherent productions, laughed and giggled in a puerile fashion, and showed general hyperactivity. These periods only lasted from several days to a few weeks

Alcohol.-Kraepelin maintains that alcoholic intoxication is of no practical significance in the ætiology of dementia præcox. Serieux shares the same opinion. Of Croq's 300 cases, in two alcohol was supposed to have caused the disease.

Excessive alcoholic indulgence in two of my patients determinated the psychoses. In other cases alcohol acted as a subsidiary cause. The records of

one case will serve as an illustration.

CASE VIII.-Margaret O. Admitted May 24, 1906. Æt. twenty-five; Ireland; married.

Family history: As far as known family history was negative for psychopathic and neurotic taint.

Personal history: Little was known of her infancy and

She was always cranky, fond of quarreling. She suffered from asthma, and used alcoholic beverages as a therapeutic measure. For at least four years she took one half pint of

whiskey and two glasses of beer daily.

In 1892 she married (her husband had syphilis); gave birth to two stillborn children; one premature child (seven

months old).

For about four or five months before her commitment she became forgetful and absent minded.

On March 26, 1906, she gave birth to a child (stillborn); labor was difficult, instrumental, and under narcosis

Three months later she commenced to show bizarre actions, and would carry on foolish conversations with her neighbors. Soon she began to hear voices; men were coming through the window to kill her, heard shooting, and thought she was going to be murdered. On one occasion she wanted to jump out of the window because men with guns, revolvers, and daggers were going to take her life. She accused the neighbors of talking about her, and calling her bad names. She also saw various objects on the wall, and otten addressed imaginary personages. She became uncontrollable in her behavior, and on April 26, 1906, she was sent to the alcoholic pavilion of Bellevue Hospital, and later transferred to the psychopathic ward.

showed accelerated cardiac action, fine tremor of tongue and hands, sordes on lips and teeth, and no pupillary anomalies. Mentally patient was depressed, anxious and apprehensive. She talked in a disconnected manner and her answers were irrelevant. She spontaneously remarked:
"Oh, now they are going to kill me and poor Martin—now "On, now they are going to kill me and poor Martin—now I would not go home with Jimmie—(looked behind her as if listening to voices)—I see my brother and uncle coming—I said in Corona, L. I., my uncle lives—I am not going if you are not going to take me—I did not think I was coming here—you will get nothing to kill my head—(looks coming here—you will get nothing to kill my head—(looks around)—I suppose it was under my pillow in sleeping—no you will not cut off my head—I would like to see you do it—it was Jim and Frank that brought me here—I thought I was coming to Bellevue Hospital—oh, no, not downstairs I will go," etc. She did not admit feeling sad or apprehensive. She said that people spoke ill about her and that the neighbors called her vile names. She was asked whether she heard her undels young and the said. asked whether she heard her uncle's voice, and she said, "No, it must be a terrible voice to talk over the ocean, he was thrown out of Bellevue and nearly drowned, Uncle Morris got his head cut when he was drunk. Uncle Tom was at the window. I said Uncle Tom, get away from the water because he would get killed." She knew the day and year; gave the month August for May. She did not know the nature of the place, and when informed of the character of the hospital, she said: "Well, I guess Martin O'Brien is more insane than his wife." On account of her irrelevant answers, it was impossible to test her memor

For several months she continued to react to hallucinations, was usually urged with questions, and in general her

behavior was odd and peculiar.

For past eighteen months her condition underwent no important changes. She was inaccessible; often muttered to herself in a low tone of voice; laughed in a puerile manner; maintained a seclusive attitude; at times became impulsive and assaultive; inclined to be resistive, obstinate and negativistic; did not take care of her person, and it was necessary to dress and undress her; wetted and soiled herself. Her speech was incoherent, obscene, and profane. Frequently she made irrelevant remarks and her replies were not to the point. When questioned she turned her head away and expressed a volley of abusive language. At times she answered questions by saying "Aha!" or "I don't know." Mood was that of irritability and indifference. Orientation was doubtful. On account of her inaccessibility it was impossible to establish hallucinations, delusions, or the integrity of her memory.

Physical condition fair. Pupils were equal and reacted to light and accommodation. Knee jerks were exaggerated.

No tremors. Speech was good.

Case IX.—Ellen M. Admitted to the hospital on June
4. 1904. Æt thirty-four; Ireland; married.
Family history: Father at the age of fifty suffered from

a traumatic psychosis, from which he recovered. Paternal aunt was temporarily insane.

Present history: Patient's infancy, childhood, and adolescence accompanied by no abnormal phenomena.

She was always quiet, seclusive and reticent.

At the age of twenty she married a man of alcoholic habits. Matrimonial life was gloomy. She had four children and one miscarriage

She took alcoholic beverages moderately, but for about three years prior to her admission to the hospital her in-

dulgence in alcohol was excessive.

In March of 1904 she became depressed, imagined some-thing terrible would befall her, feared that she might kill

her people, and thought that she was a devil.

In April her son ran away, and she did not seem to worry over this episode. She was not able to sleep well because she thought her husband would do her harm. Shortly before her commitment she made several attempts at sui-Upon admission to this hospital physical examination revealed good nourishment, papular eruption, slight tenderness over the nerves in the left arm, exaggerated knee jerks, and gastrointestinal disturbances.

Mentally patient was at first quiet and compliant, but later appeared suspicious, uneasy, and her attention was difficult to control. Spontaneously she said: "I have drank a lot of whiskey lately-I am nervous-and I hear Jesus calling me—you are not going to do anything with me, are you? I meditated killing my children. I am going to Jesus—He is calling me—they say, come down to Jesus—will you let me come down?" She stated that she committed sins and that she contaminated everyone who came in contact with her. "I have no complaints," patient said, "of no one but myself—I have done lots of wrongs, and God Almighty knows everything I have done."

The peculiar trend of thought could be illustrated by the

The peculiar trend of mought count be intestacted by following answers to questions:

Do people watch you? "They did, I guess—the police watched me because I must have been crazy and meditated killing my children." Why did you plan to kill your chil dren? "I because I thought I was enough." Do you hear any other. aren: "I because I thought I was enough." Do you hear voices? "Yes, I hear God's voice." Do you hear any other voices? "I have heard other voices—I hear Jesus's voice saying, 'Help, help, help, help, help, Help, and I am so afraid to die myself that I wished I had died long ago." Is this a loud voice? "No, it is a weak voice." Where does it come from? "It comes from the floor and either comes from hell or heaven—I think lesus is in hell suffering for me." Do or heaven—I think Jesus is in hell suffering for me." Do you see visions? "I don't know, I imagine I see the Blessed Virgin and other things—I don't know whether I see them or this is a dream." Are you afraid? "I afraid to die—I am afraid of the devil—I wanted to die—I cut my wrist-I must have been crazy.

Her orientation was defective. Memory for recent and remote events was not affected. Retention was poor. In June she became quieter, oriented, but at times was

uneasy and restless, reacted to auditory hallucinations, and expressed ideas of self reproach.

During the year of 1905 she seemed to show some improvement mentally. However, she appeared indifferent, active, reticent, and at times gave expression to bizarre For instance, she asserted that she got the doctor's

soul from purgatory, etc.

During the year of 1906 she was often excited, disturbed, destructive, and manifested assaultive acts. In speech she was voluble and incoherent, and mood was that of irrita-At times she expressed grandiose ideas. Once she said that she was in possession of everything, and that she was Mrs. Roosevelt. She admitted hallucinations, but

showed no effect. For the past year patient's condition remained without important changes. She was calmer, appeared always happy, and spoke in an incoherent and reminiscent strain. She made many irrelevant remarks, and her answers were rambling and at times not to the point: Do you hear voices? "I hear my own child and husband—perhaps he voices? "I hear my own child and husband—pernaps he is dead and in heaven. They know all about me." Who? "I suppose anybody." Her statements were inconsistent, as for instance, one of her children came to the kitchen, but would not talk to her. A few minutes later she remarked: "I don't believe that my children are living—I don't see why I was put here." Thought Jesus and her child are in her body and that "they say we were buried together and the mother killed her son." She often spoke of heing poisoned by her mother. Her orientation was of being poisoned by her mother. Her orientation was good. Mood was that of indifference; had recently expressed the wish of returning home, but had no plans for the future. As a rule the visits of her relatives exerted no influence upon her.

She took care of her person, employed herself fairly efficiently, and at times became assaultive.

There were no neurological symptoms

In other patients alcohol was only an accessory factor, and this case will serve as an illustration:

Case X.—Catherine N. Admitted January 7, 1907. Æt. forty-one; Ireland; white; married; housewife. Family history: Brother insane. Patient's son is a

psychopath

Personal history: Patient received a common school edu-cation. At twenty-five married; had had one child. No history of serious illnesses. She did not indulge in alcoholic excesses before the appearance of the psychosis. was always considered irritable, had a bad temper, and

About fifteen years ago she imagined that people persecuted her, and expressed delusions against her neighbors. She asked her husband to change their residence. In the new be fairly well, but was rested by doctor who considered her to be mentally deranged. Ever since then she imagined that some misfortune would befall her husband and child. She would frequently become excited, irritated, and even assaultive. These periods of excitement grew more in frequency for the last three years.

About seven years ago she commenced to take alcoholic beverages in excess, and would become intoxicated periodically. She thought whiskey was a great medicine for her. About the same time she refused to have marital relations with her husband. In 1900 she conceived the idea that theatrical announcements were means of advertising her. She misinterpreted objects, occurrences, and persons

Since 1903 her condition gradually grew worse. She was not able to carry on any intelligent conversation, and her answers were irrelevant. She thought dead bodies were excavated and brought to life again. She imagined that her husband and the janitor of the house would kill her child. She had also an idea that the priest wanted to kidnap her son. She hated her husband, was not able to tolerate him, and had numerous delusions about him. On January 7, 1907, she was admitted to this hospital.

Upon admission here physical examination showed irregular and unequal pupils which did not react to light; deep reflexes active; knee jerks absent; heart and lungs without grave pathological lesions; no lymphocytosis of cerebro-

spinal fluid.

Mentally patient was quiet, complied with requests, made many remarks at random, used odd expressions, and gave expression to many obscene and meaningless statements. Her peculiar ideas and stream of thought may be illustrated

by the following answers to questions:

Is the janitress a murderess? "Yes, by all means; she was bringing girls in and colored men to do bad things, and they were all foreigners, and their old clothes and shoes were thrown out the back door." Did your husband try to poison you? "No, he never did—I had to receive him poisoned—he did not make any attempt to poison me —but I received him—he had been poisoned outside." How do you know? "I know it because of lack of eating, he was dragged in half drunk." What did they do? "You could hear them on the bed—those poor broken springs and you could hear them from one building to another—Mr. Van Start, 316 Sixth Avenue, sent his servant girl to take my child and I never would see it for a whole day, and he had no affection for me, but seeing that I was insane always had it on his mind, and sent me to the hospital. Two men came in to sit down in the evening with my husband, to sit down, to take me to Bellevue for nothing at all; it was a made up thing to take me away from my child."

Orientation: She gave the day as Friday (Wednesday), he month February, and the year 1907. The place she the month February, and the year 1907. The place she called "Parochial." Memory, retention, and general school

knowledge were much defective.

There were no important variations in her condition. She was quiet, inclined to be seclusive, never associated with her fellow patients, ofttimes resisted attention bestowed upon her, and upon several occasions manifested assaultive acts. Her speech showed affectation, frequently paused, and showed incoherence of thought. She expressed few ideas, which were dissociated and odd. For example: "The Pope educated her son to be a weaver-he got to new "The Pope educated her son to be a weaver—he got to new building on Thirty-seventh street, between Seventh and Eighth avenues, as sick as a weaver." "An Italian boy kicked up a weary glue." "You must transfer me to Thirty-seventh street, where I was married by Father Keane at the compulsion of the Pope." She stated that the Pope ordered her child a college education; he (her son) had two golden medals, and therefore the Christian brothers had become jealous of him. Since her child left school he had a touch of insanity; he took medicine which contained poison—morphine. The baker's girls took her husband away. The Pope sanctioned this marriage in spite of the fact that it was very well known to him that her husband away. The Pope sanctioned this marriage in spite of the fact that it was very well known to him that her husband had a wife. There are girls, in a ward, who belong to the baker's family; one of them screams out, walks to and fro and "demands evolution or support." Her son lost all his affection for her because he went among strangers. When she came here she was sane, but in this place she was driven to insanity. She suffered from a slight attack of despondency. She told the doctor: "I want you to take the same place from where me to my husband and son to the same place from where you took me out; if they are not there you must take me to St Francis's house, East Seventeenth street, and I will remain there till I find my husband and child. If they are dead then you have nothing to do." Mood is that of irrita-

Prove It is asserted by various authors that

prison confinement is a paramount cause for dementia præcox. Kraeplin offers this explanation: "The striking activity of prison confinement, which belongs to this group (dementia præcox), is difficut to explain. It is possible that the absence of light, fresh air, and activity, the uniform diet, and emotional influences may come in question." Three per cent. of his cases, or six per cent. of the men. developed this disease in prisons.

In Manhattan State Hospital, patients are not received from penitentiaries save from the Work House. The latter supplies most of our alcoholic cases. Only in two of my patients (one is not included in this series) dementia præcox developed during their imprisonment. Both of them were committed for vagrancy and alcoholic indulgence was out of the question. Paranoiac trend was marked in both cases, and deterioration in one especially was rapid.

Infectious Diseases and Operation.—In four patients dementia præcox followed infectious diseases —pneumonia in one; grippe in the second; measles and pneumonia in the third; typhoid fever in the

In two cases minor operations (such as operations for adenoids and hæmorrhoids) were supposed to be determinants. From ten to eleven per cent. of Kraepelin's cases resulted from infectious diseases.

Emotional Influences.—Emotions occupy a lofty position in the life of an individual. Ribot says: All forms of the creative imagination imply elements of feeling." "All emotional dispositions whatever may influence the creative imagination." He further adds: "I challenge any one to produce a solitary example of invention wrought out in abstracto, and free from any factors of feeling. Human nature does not allow such a miracle. also emphasized that "the essential foundation of our personality is affectivity. Thoughts and actions are expressions of our emotions. The component elements of psychical life are sensations, concepts, and feelings, which form certain units in our consciousness. These units may be compared to the molecules in chemistry. The ego complex is a psychological expression of the firmly associated paths of all the bodily subjective sensations. Each individual molecule of the complex takes an active part in our emotions; it can awaken our emotions and its complexes. The trend of our imagination can be interrupted by an affective idea."8

From this it will be readily seen how a marked emotional upset is liable to cause a mental alienation. In Kraeplin's eloquent phraseology: "Fear before an approaching misfortune, fright over an unexpected occurrence, anger over injustice, despair over sustained loss-these are powerful sudden concussions which displace our mental equilibrium, and these relatively frequent causative factors act as agencies in the profound, long, and continuous disturbances.

It is well known that in dementia præcox emotional upsets are considered important determinants. Thus in forty-nine of my cases (about thirty-eight per cent.) various affective conditions influenced the development of the psychosis. For instance: Worry over death of a parent, sister, or

brother; worry over mother's sickness; love affair; betrothal; marriage; attempted rape; fright; the disappearance of a son; financial loss; domestic infelicity; unhappy matrimonial life; lowering of social position; nostalgia, etc., etc.

Of these forty-nine patients, twenty-six showed both psychotic traits and heredity; in nine only psychotic traits; and in ten only heredity were demonstrated; in four no heredity or psychotic

traits were ascertained.

No Exciting Determinants.—In forty-two patients no definite exciting causes could be elicited. must be borne in mind that in these patients twenty showed both psychotic traits and heredity, eight gave a history of heredity, and twelve of psychotic traits, while in two no heredity or psychotic traits were determined.

We assume too much liberty in affirming that the mental disorder was produced without exciting causes. These patients' environment was bad, economic condition poor, and in general they were deprived of the sunny side of life. Also the psychogenic factors must not be forgotten. There are numerous incidents in one's life which may be potent stimuli in bringing about mental unbalance.

Abrahams in a recent paper discusses sexual trauma in adolescence and its relative significance in dementia præcox. Although he does not think that such conditions may cause the disease, yet he holds that the clinical phenomena are greatly modi-In one of my patients a psychosis suddenly developed without any premonitions. No particular cause could be satisfactorily established. Yet a thorough psychopathological analysis revealed a submerged complex which was the source of irritation. Long before marriage she gave birth to an illegitimate child, and this painful incident continuously and continually preyed on her mind.

Another extremely interesting case came recently under my observation (this is not included in my

series):

CASE XI.—The patient is an American woman, thirtyseven years of age, springs from an alcoholic parent, and her paternal third cousin suffers from insanity; she was always of a retiring disposition, unnaturally modest and bashful, uneven tempered, over religious, and not permitted to go out in the dark in fear of being assailed by men. She had no love affairs, was never married, and led an up-right life. For the past five years a characteristic change in her disposition was observed. She commenced to show incapacity for employment and delusions and hallucination of an erotic content developed. Upon her admission to the hospital she revealed a considerable degree of deterioration, peculiar to a dementia præcox reaction. From her mother we could learn nothing regarding the exciting cause of her mental malady, but from the patient, through the aid of psychopathological analysis, it was possible to establish a definite actiological factor for her psychosis. When interviewed patient spoke coherently, appeared pleasant, at times screwed the left side of her face, and

She declared that she had thoughts of an obscene character. She imagined that she perceived male organs, at times the act of sexual intercourse and libidinous attitudes. times the act of sexual intercourse and libidinous attitudes. While looking at any object, an obscene representation came before her mind. Even in church she associated holy pictures with erotic symbols.

She was pressed for information as to the mode of development of these peculiar ideas and after considerable questioning and cross examination, the following account

was obtained:

About fifteen years ago, while on her way to work, a man

exposed his genitalia to her and she was then very much rightened. As she put it: "I was as white as a paper; was much upset, could not speak from fright; when I came to my place of business, I told the girls about this shameful occurrence, and then I related it to my mother." Every time she passed that place she would think about the man's indecent act.

Ever since then lustful concepts would force themselves upon her mind. For the first five years they were not so intense, but for the last ten years they were extremely annoying to her. Ten years ago, on account of these evil imaginations, she became very nervous, cried frequently, at times, staggered, and finally decided to go to a doctor and later to the confessor. However, neither of them did

her any good.

For the past ten years she conceived the idea that people applied to her derogatory epithets. (This symptom she explains by saying that people were able to read her mind; hence, they found out her obscene imaginations). They would say: "She is a bad woman—a whore—a bum—a fast woman—a merry widow, etc." Not infrequently she would respond to them. These uncomplimentary comments became more aggravated for the last five years

For the past seven years she had often dreams of a sexual nature—that she was pregnant, or gave birth to a

child, etc.

Such hidden complexes are many, but not in every instance can they be divulged. Our present psychopathological investigations are far from being perfect enough to enable one to invade the mysterious realms of the human mind. "The general principle is that many individuals," says Adolf Meyer, "cannot afford to count on unlimited elasticity in the habitual use of certain habits of adjustment; that instincts will be undermined by persistent misapplication, and the delicate balance of mental adjustment and of the mental substratum must largely depend on a maintenance of sound instinct and reaction type." "Mind, like every other function, can demoralize and undermine itself and its organ, and the entire biological economy, and to study the laws of the miscarriage of its function and life is one of the conditions for any true advancement in psychopathology."

CONCLUDING REMARKS.

The limited material at hand does not permit one to offer conclusive deductions. However, it must be accentuated that heredity and constitutional make up enter as important ætiological factors in the evolution of dementia præcox. In sixty-four per cent. of my cases the former predominated, and in sixty-eight per cent, the latter was present. In addition to these there were determinants which materially aided the precipitation of the mental breakdown. In only thirty per cent. of my patients definite exciting causes were not satisfactorily Yet there were other conditions which undoubtedly had a significant bearing upon the cases. For instance, poverty, deficient sanitation, domestic infelicity, and environmental influences.

Although these facts demand our careful attention, yet it must not be forgotten that after all constitutional predisposition underlies dementia præcox, and its active symptoms can be precipitated by such exciting causes which react on the individual according to his peculiar temperament and idiosyncrasy. In speaking of dementia præcox, Bleuler says: "Perhaps here comes in consideration not

[&]quot;It should be somewhere I that Freud's essemble includes or Jung's association test is not available in every case of dementia

only the disease process, but also the morbid predisposition upon which no special disease process or novum was necessary to bring forth the symp-. . . The complex has no peculiar ætiological significance for the disease or disease process. Its effect consists in determining the symptoms. . . . So through the approach of an affect can a latent dementia præcox become manifest." And Jung formulates the following hypothesis: "Like any psychical cause, so can also an influence of an affect loosen the organic process of dementia præcox (through toxines) and indeed analogous to the manifestation of tuberculosis in a contused The disease develops in a locus minoris resistentiæ, that is, in dementia præcox the entire physical like the psychic disease process can develop from an affective complex, exactly like under any other conditions from a psychical trauma, infection, etc. If the complex was not in such a case, then the peculiar disease would not develop under these circumstances. Therefore for such cases the complex had not only the usual determinant, as far as its content is concerned, but also a significance for the origin of the organic process."

In this connection, perhaps, a question may be asked, How should the alienist view this enormous, continuous, and continual increase of insanity, and especially the deteriorating forms of mental diseases to which the great group of dementia præcox belongs? It should be borne in mind that out of three hundred inhabitants one is either insane or feeble Is it Nature's method to get rid of the undesirable product? "Do not let us say," tells us Adolf Meyer, "that this is merely one of Nature's methods of weeding out the unfit. Among the 25,-000 persons who are to-day in the public and private institutions of New York State alone, there are many brilliant hopes buried, largely owing to a lack of knowledge of what some people need in the way of social and personal hygiene. Remember that some of the most illustrious members of the race have been dangerously near the borderland of insanity and seem to have been great, although they showed obvious traces of the same misled instincts that have completely wrecked others. Are such people not worth our help? Should not the home, the press, and school mind some of the dangers and shape their ethics and methods accordingly

"This is the practical lesson to be drawn from the theory of degeneracy which is spread into the imature minds as a doctrine of fatalism, so that even high school pupils excuse themselves in some such a way as: 'I can't help this. It is hereditary in my family.' Part of this may be sadly true, but this is the duty of pædagogy and psychiatry to distinguish what is to be accepted with fatalism from what is open to correction. We have faith in gymnastics for the correction of physical defect. Let us devise more efficient gymnastics which lead us to heartily enjoy actuality, to instinctively shrink from antisocial ideas and abnormal friction, and to get time for an unsophisticated growth."

The rationale of modern therepeutics is the creation of prophylaxis. And in mental diseases preventive medicine is far more important than the actual treatment of psychical infirmity. Unfortu-

nately the establishment of prophylactic measures in insanity is outside of the régime of the alienist. We can warn the patient's relatives what steps to take in order to avoid an attack of mental alienation, but the state of affairs of our present society is opposed to the execution of the physician's orders.

Nowadays the struggle for economic independence, social distinction, and intellectual attainments tends to cripple the mental health of mankind. Professor Giddings emphasizes that "mutual aid is the foundation of economic organization and political alliance." Alas, this splendid theory, outside of its theoretical interpretation and endorsement of the Utopian philosopher, has no relative significance in our industrial society.

Pædagogy has made wonderful progress. Our teachers, in addition to a liberal education, must be thoroughly versed in the philosophy of Pestalozzi, Fröbel, Rousseau, Mann, etc.; they must possess a profound knowledge of psychology, and be carefully trained in the science and art of teaching. Yet despite all that the educational systems are defective. Child's turn of mind is misdirected. Goethe exclaims: "If children grew up according to early indications, we should have nothing but geniuses. This is somewhat too farfetched. One may say: Recognize and individualize child's propensities, exclude morbid and unnecessary stimuli; then abnormal psychic tension will be reduced to a minimum, and environmental psychoses and neuroses could be obviated to a great extent. The curricula of studies should be adopted according to the individual needs of our pupils and not vice versa. Each school should have a competent psychiatrist. The stubborn, cranky, nervous, malicious, backward, etc., should be brought to the physician's attention, and such unfortunate pieces of humanity should be subjected to early medical correction.

Again to quote Dr. Adolf Meyer:

I should urge that we spread among teachers and pupils a realization of the fact that knowledge must be a knowledge of doing things, and next a knowledge ready for doing things. Even in cultivating the instincts of play and pleasure we must aim to make as attractive as possible those games and diversions which require decision and action and carry with them a prompt demand for correcwith others and for others, and not the play of mere rumination. We further must aim to find levels of activity with moderate demands and well within the limitations of even the less brilliant or less vigorous children and yet giving full enough satisfaction to remain attractive and truly stimulating. . . . It is evidently the plain duty of those who have to map out curricula and those who have to advise as to the life of children who are in danger, to see that the doing of things is made infinitely more attractive than is usually the case. I do not see why the success of efforts directed toward this object should not appear more glorious than, or at least as glorious as, the devising of some new plan of cramming the pupil with the subjects of a conventional curriculum. Thus it is that through training in wholesome action as well as in physical culture a real hygiene is making its way into the schools. At the same time, a more careful study of levels of capacity and of ways of making the easier levels sufficiently attractive and full of meaning, may well become a matter of serious cooperation between the pedagogue and the psychopatholgist.

Unless the social reformer, sociologist, educator, and physician will cooperate and work together to-

ward the readjustment of the dissociated strata of our community, insanity will remain on the increase, and prophylaxis in mental diseases will be the theoretical speculation for the dreamer!

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SARCOMA OF THE SMALL INTESTINES, WITH THE REPORT OF A CASE.*

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Sarcoma of the intestines is a rare condition. A study of the textbooks on pathology and surgery shows that, except for the mere statement of its rarity, they give scant space to the discussion of the disease.

Movnihan in Abdominal Operations, published in 1905, gives a résumé of all the cases of sarcoma of the small intestines, treated by operation, recorded up until that time. In all forty cases are recorded. L. G. Anderson in the British Medical Journal, October, 1907, reports an additional case, to which I

Read before the Frankford Branch of the Philadel his County Medical Society, October, 1908.

wish to add one, making a total of forty-two recorded cases.

The history of the case is as follows:

B. H., age eighteen; male; Italian; admitted to St. Agnes's Hospital, January 10, 1908. He has been in this country two months. Previous to his present illness he always enjoyed good health and was able to perform laborious work. Family history negative. One month ago he began having gastrointestinal symptoms; diffuse abdominal pain, nausea, vomiting, eructations of gas and constipation followed later by diarrhœa. Three weeks ago he noticed that his abdomen was enlarging. The enlargement developed very rapidly, and one week ago he consulted a physioped very raphily, and one week ago he consulted a physi-cian, who diagnosticated the case as one of ascites, due to tuberculous peritonitis. He performed paracentesis abdo-minis and withdrew about one quart of yellowish white, turbid fluid which he considered pus. The abdomen again refilled with the fluid one week later, when he was sent to the hospital.

On admission to the hospital the patient complained of diffuse pain over the abdomen. There was no spot of localized pain or tenderness. The stomach was unretentive, and he had frequent diarrhecic stools. The abdomen was greatly distended and contained free fluid. The temperature was septic in type, ranging as high as 104° F. He was emaciated and anæmic, though the cheeks were flushed. Profuse cold sweats were present at night. I concurred in the diagnosis of tuberculous peritonitis, and as the heart and lungs were negative advised abdominal section under a general anæsthetic

The patient was operated upon three days after his admission to the hospital. On opening the abdomen a large quantity of milky white fluid escaped. A specimen of the fluid was sent to the laboratory for examination, but owing to the absence of the regular pathologist an incomplete and unsatisfactory report was returned. All the definite information gained was that the fluid was not pus. I have no doubt from the character of the fluid that the case was one of chylous ascites. After the fluid was evacuated and the abdominal contents came into view a most unusual picture presented itself. The great omentum hung down over the intestines like a bright red curtain. At the bottom of the incision, showed a tumor mass which closely resembled a uterus, gravid at seven months. This mass subsequently was found to be the bladder. The omentum had entirely changed in appearance. There was no fat to be found and no vessels were visible. It was bright glistening red in color, smooth and about three-quarters of an inch in thick-

Pushing the omentum up toward the diaphragm the intestines were brought into view. All the intestines, both large and small, had the same general appearance as the omentum. On endeavoring to bring the intestines into the wound they were found to be firmly fixed in the abdominal wound they were found to be firmly fixed in the abdominal cavity. The mesentery was then examined and found to be also involved in the process. The mesentery was of the same general appearance as the omentum, and was about one-half inch in thickness. There was no evidence of involvement of the glands. The intestinal walls felt to be about one quarter inch in thickness and were uniformly thickened throughout their entire length. The bladder was pear shaped, the walls were about one-half inch in thickness and the owner half the owner had the appearance and feel of a present ness, and the organ had the appearance and feel of a pregnant uterus. The liver, spleen, and stomach were appar-ently not involved in the process. There was not a sem-blance of a tumor mass, nodule, or even an adhesion any-where in the abdominal cavity. All the organs involved seemed to be symetrically thickened. The abdomen was closed in layers.

The postoperative history was without any complications, due to the procedure. The abdomen rapidly refilled with fluid, the patient gradually became weaker, and died on the tenth day. A post mortem examination could not be secured. A small piece of tissue was removed at the time of cured. A small piece of tissue was removed at the time of the operation, and I am indebted to Dr. A. O. J. Kelly, who studied the specimen and submitted the following patho-logic report: "Microscopically the tissue consisted of rather large round cells that were fairly uniform in size and had large well staining nuclei and a moderate amount of protoplasm. The intercellular substance was scanty. The bloodvessels were moderate in number; some of them were dilated, and their wall for the most part consisted only of endothelium. The appearances conformed, therefore, to those of a large, round cell sarcoma."

While waiting for the pathological report the case was submitted in detail to a number of well known pathologists, who were unable from the description given to recognize the condition. From a study of all the cases of sarcoma of the small intestines treated by operation which have been roorded, and the subject of sarcoma in general, I have been unable to find a counterpart of this case.

A study of this rare condition in the forty-two recorded cases is of interest. It may occur at any age. The earliest case reported was that in a boy, fourteen years old, and the latest in a man of sixty-two years of age; five cases occurred between the ages of ten and twenty; eight cases between twenty and thirty; ten cases between thirty and forty; thireteen between forty and fifty; five cases between fifty and sixty; and one case occurred after sixty.

Twenty-three cases, or fifty-six per cent, occurred between the ages of thirty and fifty. This might be supposed to be the age of greatest frequency of the disease, but inasmuch as the total number of cases recorded is so small I hardly think this inference would be of much value.

Sex apparently has no influence on the disease. It occurred in twenty-two males and twenty females. This is in contradistinction to carcinoma of the intestines, to which disease the male sex seems

to be particularly susceptible.

From the incompleteness of many of the reports it is impossible to draw any conclusions as to the relative frequency of involvement of the different parts of the intestines. In the forty-two cases recorded sixteen are reported as involving the small bowel. No information being given as to the particular portion involved. Of those cases where definite information is given we find the duodenum the seat of the disease in one case; the jejunum in eleven cases; the ileum in thirteen cases; the ileum and cæcum in one case; and general involvement in one case. From these figures it would seem that all parts of the bowel except the duodenum are equally susceptible.

In thirty-nine cases a distinct tumor mass was found varying in size from an egg to an adult head. In two cases small nodules of lymphosarcoma were present, and in one case uniform thickening of the

walls of the gut.

Practically every variety of sarcoma has been recorded as being found. In four cases the pathological diagnosis is given simply as sarcoma. These cases were probably of the round cell variety, as it is likely, had they been of the more infrequent forms of the growth, they would have been so specifically stated. The following varieties are recorded: Lymphosarcoma, five cases; spindle cell sarcoma, seven cases; sarcoma (variety not specified), four cases; round cell sarcoma, nineteen cases; myxosarcoma, one case; myxosarcoma, three cases; alveolar sarcoma, two cases; and fibrosarcoma, one case.

The round cell variety is the most frequent, occurring in forty-five per cent. of all the cases, and if we include the four cases where the variety was not specified it occurred in fifty-five per cent.

Sarcoma of the intestines has no pathognomonic group of symptoms. Abdominal pain may be present, in some cases dull, in others sharp or colicky, in some diffuse, in others localized, in some con-

stant, in other paroxysmal, in some coming on acutely, lasting but a short time, in others lasting for months or even years. Nausea and vomiting are frequent, though they may be entirely absent during the whole course of the disease. Constipation is the usual rule, though in some cases diarrhœa may be present from the beginning. In many cases there are symptoms of chronic obstruction, while in others acute obstruction is the first condition noted. In some cases there was an entire absence of symptoms except the presence of a tumor. A distinct abdominal tumor was noted before operation in thirty-nine of the forty-two cases. two cases, one reported by Lecene in Thèse de Paris, 106, in 1904, and in my own case ascites was noted. Fever may be present, particularly in the disseminated lymphosarcomas. Emaciation and anæmia are usually present late in the disease.

It is impossible to make an exact diagnosis until the growth has been studied at operation or microscopically. The presence of a tumor with wasting and anaemia will of course indicate malignancy, but a benign growth causing chronic obstruction will present practically the same symptomatology. In the differential diagnosis it is well to remember that carcinoma of the intestines occurs usually after fifty years of age, and is much more frequent in

males than in females.

The prognosis without operation is of course practically always fatal. No definite time can be fixed for the limit of the disease. Most cases die within one or two years, though one case is recorded as having presented symptoms for nine years previous to operation. Many accidents may intervene to shorten life. Thus in one case reported by Libman death occurred in twenty-four hours after the onset of acute symptoms as the result of perforation and general peritonitis. In two cases intussusception was found, in three cases absolute obstruction, and in one case metastasis to the liver and spleen.

Treatment.—The presence of a tumor in the abdomen calls for surgical intervention and an exploratory section should be made and the patient treated according to the operative findings. In the present series nine of the cases were judged to be inoperable and the abdomen closed without any attempt being made to cure the condition. In one case of obstruction enterostomy was performed, followed later by a resection of the bowel with the cure of the patient. In thirty-three cases resection of the affected portion of the gut was practised. In thirty-two end to end anastomosis was performed, and in one lateral anastomosis.

The operative death rate from all causes excluding recurrence was nineteen. Five patients had recurrence, a total death rate of twenty-four, or fifty-seven per cent. Eighteen cases, or forty-three per cent., are reported cured. When we consider the death rate of resection for obstruction, varying from thirty-five per cent. to ninety per cent., depending on the length of time the obstruction has existed, the mortality in this condition cannot be held abnormally high.

The variety of tumor apparently has no effect on the rate of death, recurrence, or cure.

Death occurred with lymphosarcoma in three cases; spindle cell sarcoma in two cases; round cell

sarcoma in eight cases; sarcoma (unspecific) in two cases; myosarcoma in one case; and alveolar sarcoma in one case.

Recurrence occurred with round cell sarcoma in three cases; myosarcoma in one case; and alveolar

sarcoma in one case.

Cure resulted with round cell sarcoma in seven cases; spindle cell sarcoma in four cases; lymphosarcoma in two cases; myxosarcoma in one case; sarcoma not specified in two cases; myosarcoma in one case; and fibrosarcoma in one case.

113 SOUTH TWENTIETH STREET.

MALARIAL FEVER.

With Report of Three Cases, Comatose Form. Statistics Showing Relative Blood Findings in Malarial Infection in the States and in the Tropical Zone. Also Some Statistics Collected from Charity Hospital.*

> By J. Fred Dunn, M. D., New Orleans.

Malarial fever is an infection characterized by:
(a) Paroxysm of intermittent fever of quotidian, tertian, or quartan type; (b) a continued fever marked with remissions; (c) certain pernicious, rapidly fatal forms; or (d) a chronic malarial cachexia with anæmia and enlarged spleen. (Osler's

Practice of Medicine.)

We know that this infection is caused by a microorganism, or parasite, the *Plasmodium malaria* which is transmitted from an infected person to a healthy individual by the anopheles mosquito. Histologically we go back as far as the nineteenth century when Peruvian bark was discovered, and we find that, therapeutically, malarial was distinguished from other forms of fevers by Morton and Torti. Before then, malarial and other fevers were all massed together. If we go back still further, however, we find, in the writings of Hippocrates, fevers described which resemble malarial fever.

A. Meckel, in 1847, found pigmented corpuscles from the spleen of a patient dying with malarial infection, and also in the blood. Virchow afterwards confirmed this observation. Planer discovered the presence of these pigmented corpuscles in fresh blood, and his theory was later confirmed by the writings of Frericks and Kelsch. Laveran, in 1877, began a series of experimental research works and, in 1880, he described the various aspects assumed by these pigmented corpuscles, or malarial organisms, and, in 1885, Golgi observed that with the sporulation of these organisms, the paroxysm of fever took place. Among others who have contributed to the study of malarial fevers are: Thayer, Heweston, Osler, and James.

The mosquito theory was advanced by Ross, and also Grassi and Bignami. Regarding this mosquito, we are told that it is the anopheles family that transmits the disease, by carrying the infection from an infected person to a healthy individual. They are recognized by their position, when in a sitting posture, either perpendicularly or at an angle, and by the aid of the microscope we find spotted wings; well marked spots on their piniris, or claviger, four

spots in all; their proboscis and palpi are of the same length; there are three varieties of the anopheles.

In man, the cycle of the plasmodium begins with a spot seen in the red blood cell, toward one side and showing a ribbon like appearance and amœboid. As development goes on granular matter begins to show, having at first a peripheral arrangement, and increasing as the hæmoglobin is destroyed. As development goes on, this granular matter goes towards the centre, and is found there when segmentation sets in. The spot first seen increases in size and becomes less motile, almost filling up the corpuscle. Signs of life are now visible, and thin lines are seen between these segments, or points of life, on the plasmodium. When the corpuscle bursts its covering, these spores attack other red cells and begin a new cycle. The coloring matter, or pigment, is thrown into the blood, and sometimes attacks the leucocytes.

From the histological readings, we learn that the paroxysm of fever is coincident with the sporulation, which throws out toxines causing a depression of the vasomotor centre, which causes the chill seen

in malarial fever.

The microscope shows the different forms of the malarial plasmodia, and we find that some do not segment, and these are known as extracellular; while some throw off a flagellum from the granular process, and these flagella are supposed to be the

male elements.

When the mosquito sticks his proboscis into an infected person, he sucks up these different forms of plasmodia, and the flagellum, or male element, impregnates the extracellular bodies, and fecundation takes place inside the stomach of the mosquito. Spores are thrown off which pass into the walls of the stomach, and in the muscular coat begins a development somewhat similar to that in man. When the development is complete, these bodies burst their coverings and these sporozooids are thrown into the cavity and escape, through the salivary glands of the mosquito, into the ducts which are inoculated, and are carried into the human blood by the bite of the mosquito.

Having seen that the anopheles transmit these parasites, we should look toward the destruction of this species of mosquito, and with proper measures try and kill them, thereby preventing the transmission of this widely distributed infection.

To begin a crusade against this mosquito, what

s needed

Educate the public; have honest legislation; and then we can easily do the work; drainage to clear up the swamps, and prevent the breeding of this mosquito; teach the public the laws and rules of hygiene and sanitation; have the legislature pass these laws and appoint officials, who are honest, to see that these laws are carried out.

As to the distribution of malarial infection, a point of interest may be mentioned, in stating that as far North as 64° (in Finland), cases have been reported. In the United States, the disease is more prevalent in the southern States, while the northern States show a scarcity of infection; the central States seem free from it, and in the northwestern States it is not known.

^{*}Graduation thesis, Class 1908, medical department, Tulane University of Louisiana

The Central American countries are filled with malaria, and of a marked type, as I have noticed in my observations of the blood, and especially the anæmia and debilitating effects produced on the

system.

· The infection is at its maximum in the spring and autumn months. While we do not find a very high mortality, or death rate, perhaps if we would only follow the patients, whose systems have been ravaged by the infection, we would find that there was such a marked lowering of vitality, or resisting power, left, that the system was an easy prey for tuberculosis, pneumonia, rheumatism, etc., and we could then understand that over thirty per cent. of all deaths caused by, or attributed to, these diseases, could be primarily placed at the door of malarial infection. With this in mind, we should easily see that, even though we know that quinine destroys the parasite in the blood, and change in climate, etc., helps the individual, our real great effort should be toward the prevention of the transmission, by killing the anopheles.

I will now report a few cases that came under my observation and treatment in the wards of the Charity Hospital, during the months of October and November; also a case that was treated in the country during the vellow fever epidemic in 1905. In my personal experiences, I have had over forty cases of fever in these two months, and will give a short outline of the prevailing symptoms and blood findings, with some few statistics that I collected when I first began my work on the blood.

CASE I .- A case of malarial fever, from Colon; the patient was treated in the country, during the yellow fever epidemic, for yellow fever and later for appendicitis, but was finally given quinine and cured, thus illustrating some errors in diagnosis and showing the precaution taken in treating yellow fever in epidemics.

treating yellow fever in epidemics. Patient, white, male, had been in Colon during the month of August, and upon reaching New Orleans went out to the country. There was a yellow fever epidemic in the city and surrounding towns. Patient was taken ill suddenly, upon arriving in the country, and at 6 p. m. had 102° F. temperature, severe frontal headache, backache, constipation, and distended abdomen. He was at once put to bed, his case diagnosticated as yellow fever, on account of the epidemic; and he was screened and isolated, and given purgation and hydrotherapy.

Second day of illness showed temperature ranging be-tween 104° and 105° F., finally reaching 106° F. toward evening. There was no albumin in urine; patient appeared to be jaundiced, bleeding from the nose, and became de-lirious during the night. Ice pack for reducing the tem-

perature and no medication.

Third day. Temperature fell to 100° F.; patient was put in charge of trained nurses; the diagnosis of yellow fever being confirmed at a consultation, without having made a blood examination under the microscope. (See Temperature Chart 1 for course of fever.) Patient was nauseated, retched, abdomen distended, urine scanty and highly colored, no albumin; at 9 p. m. temperature 103° F.; pulse, 116. Ducro's clixir was given, one half ounce every three hours; vichy water p. r. n.; caffeine citrate, I drachm, every two hours; hydrotherapy; saline enema at night.

Fourth day showed a gradual rise in temperature. Pa-

Fourth day showed a gradual rise in temperature. Patient was restless, nauseated, and voided forty-five ounces of urine in twenty-four hours. No albumin. Hydrotherapy; acetphenetidin, five grains, when ice pack failed to reduce temperature. Other treatment continued.

Fifth day. Temperature had gone down during the night and began rising during the day, reaching 103° F. at 10 p. m. Urine showed no albumin; voided fifty-four ounces of urine; was constipated, stools were small and hard. Saline enema, hydrotherapy, stimulation, and liquid nourishment.

Sixth day. Temperature ranging around 103° and 104° F. Retention of urine; had to be catheterized and thirty ounces of urine withdrawn in twenty-four hours. Treat ment continued, and added mustard jacket to back over kidneys; hot application to bladder.

Seventh day. Change in temperature (see chart). Pulse began to grow weaker and irregular. Headache. Nauseated. Slight jaundice. Bleeding from the nose. Constipation. Catheterized every six hours. High saline enema. Bladder irrigated with boracic solution. Hydrotherest. therapy. Acetphenetidin, ture. Liquid nourishment. Acetphenetidin, 21/2 grains, to control tempera-

Eighth day. Still restless; nauseated; pains in abdomen, and abdomen distended; tympanitis marked, and expelling gas freely. Pulse rapid and weak. Trional, 10 grains, for restlessness; cocaine, ½ grain, to allay nausea; digitalis, m. v., and strychnine, 1/30 grain every four hours. Saline

and soap enema.

Ninth day. Vomiting; pain localized in right iliac fossæ; distended abdomen; constipation; weak and irregular pulse. Appendicitis was suspected, and a surgeon was called in, who pronounced the case malarial infection and sent the patient to New Orleans for treatment. Patient had hæmaturia, incontinence of urine, and fæces; adrenalin chloride was given coming down on train. Upon reaching New Orleans, patient was sent to a hospital and started quinine hydrochloride, 10 grains every two hours by injection, until three doses were taken, and then every four hours, regardless of hæmaturia. Liquid nourishment; hydro-

regardless of hæmaturia. Liquid nourishment; hydro-therapy, and catheterized every six hours. Blood examina-tion: Plasmodia malariæ (crescents). Urine: Specific gravity, 1.022; acid reaction; blood and albumin. Tenth day. Chilly sensations, coughing, retching, irrita-tion of throat, pulse very weak and irregular, ranging be-tween 102° and 104° F. Blood examination: 3,000 leuco-cytes, still contained crescents. Quinine continued by injection every three hours. Stimulation, and treated

symptomatically.

symptomaticany. Eleventh day. Profuse perspiration, resting quietly. Leucocytes, 4,200. Hæmoglobin estimate, 105 per cent. (?). Urine, acid, specific gravity 1.028; bile pigment and pus. Calomel, I grain, each hour, until five doses; folowed by Apenta, 3 ounces; enema at 12,30. Stimulation; quinine hydrochloride, grains 10, by injection, every four hours. Nourished as usual.

Twelfth day. Nauseated, retching, unable to take anything by mouth. Slight catarrhal condition developed; perspiring freely. Same treatment.

Thirteenth day. Discontinued quinine, and from them on patient began to improve. Abscess from hypodermic injection of quinine developed. Treated symptomatically. During convalescence patient was given tincture of iron

chloride, m x.; tincture of digitalis, m v.; and Fowler's solution, m v.; t. i. d., also nitrohydrochloric acid, m xv., t. i. d., after meals.

This case shows the great use of a microscope, and the results of quinine in malarial fever, as the patient was thoroughly saturated with malaria before injection of quinine was commenced.

The question might arise as to whether the attending physician was right in diagnosticating this case vellow fever, but when we stop and consider the symptoms and also that there was an epidemic of vellow fever at the time. I think we may state that the physician was justified in diagnosticating the case as vellow fever, and showed good judgment in taking all precaution; but he should have acknowledged his error after five days of fever, as the chart alone would tell him his diagnosis, and even though he had no microscope he should have given quinine.

Case II.—Illustrates a case of æstivoautumnal fever with coma, and is a case developed in the swamps of Louisiania. Treated personally in my ward at Charity Hospital.

White, male, aged thirty-nine, carpenter by occupation. Family history: Father had died with carcinoma, and

mother with phthisis.

Personal instory: Drinks, smokes, and chews. Had

measles and bronchitis when a youth. Gonorrhea fifteen

years ago, and chancroid at same time.

Present illness: It began with a chill, followed by high fresent liness: It began with a clini, tollowed by high fever, while working on Atchafalaya River near Lafayette, La, about ten days before admission. Pains in back and in chest. Constipation, presumably from drinking, because he stated that he drank "whisky and quinine" while in Lafayette.

This obtained from patient when he was convalescent. When seen by me patient was in a semicomatose state; temperature, 88° F.; pulse, 92; respiration, 24; delirious; unable to give any history, except that he was hungry and had nothing to eat. Could not tell where he resided; condition suggestive of many things; in fact, acting upon a suggestion that he was a "dope" fiend, attempted to find traces of same. From clinical aspects, case looked like malarial infection with coma, but the examination of the blood being negative, and having patient in a hospital, simply de-layed quinine and treated symptomatically, as will be seen

Physical examination on admission: White, male, emaciated, very anæmic, jaundiced, dazed, and stupid (semi-comatose), and delirious at times. Skin had a yellowish tinge, was dry and hot. Eyes were dull, listless, and had a stupid expression. Pupils were evenly contracted and reflexes present. Mucous membranes were pale and anæmic. reflexes present. Mucous membranes were pale and anæmic. Lips were dry and cracked. Teeth covered with tobacco stains and tartar. Tongue was dry, pointed, edges red, surface covered with thick brown fur. Foul odor to breath. Lungs showed slight bronchitis. Heart was apparently normal. Pulse of good volume, slightly rapid. Spleen was enlarged and palpable, very tender. Abdomen was not distended, but tenderness noted. Urine had a preside gravity of Vaz was evid showed trace of ellumin. specific gravity of 1.023, was acid, showed trace of albumin, but nothing else noted. Blood examination was negative. Marked leucocytosis. Neutrophiles, seventy-nine per cent.; small lymphocytes, ten per cent.; large lymphocytes, eight per cent.; transitional, three per cent.

On third day patient had a sudden rise of temperature from 99° to 103° F. at 8 p. m., following a severe chill; urine scanty, highly colored, no albumin; blood examination negative; patient comatose and delirious. Tempera-

ton negative; patient comatose and delirious. Temperature declined by crisis, reaching 98° at 6 a. m. Fourth day without any noticeable signs of chill; had a rise of temperature from 99° to 104° F, at 4 p. m. Again comatose, irregular and rapid pulse; irregular respiration; cyanotic; incontinence of fæces, loose and offensive stools; retention of urine. Blood, malarial plasmodia found (crescents in abundance). Began treating as comatose form of malarial fever, and patient passed out of coma on sixth day, about forty-eight hours after instituting quinine treatment, and from then on patient was convalenced. treatment, and from then on patient was convalescing. Hypodermic abscess developed later; patient was treated symptomatically

Treatment of case. Upon admission was put to bed after cleansing bath, and was given hot saline enema and diuretics, treating symptomatically and watching patient closely. Hydrotherapy for temperature. Began quinine when the bacillus was found, and gave quinine hydrochloride, 15 grains, by injection, every two hours until three doses were given. Diuretics, stimulating nourishment (liquids). Catheterized, etc. This was on fourth day

of admission.

Fifth day. Quinine hydrochloride, 10 grains, at 10 a. m., 12 12 m., and 2 p. m., by injection, repeating at 10 p. m., 12

m., and 2 a. m. Other treatment symptomatic.

Sixth day. Patient passed out of comatose state; given quinine, 10 grains, every four hours, and Fowler's solution, m. v., t. i. d. Discontinued quinine the next day, and began tonic treatment, iron, arsenic, and strychnine.

This case shows again the use of a microscope and the results of quinine. With a case of this kind, in private practice, I would not have hesitated,

but would have given quinine on the clinical aspect

CASE III.—This case illustrates another comatose condition, and, comparing the three cases, we can obtain a good deal of information, showing the severity with which malaria attacks the system and how saturated one can get when not treated properly. With a picture of these cases, clearly defined, one should never make an error in comatose malaria, and I would like to plead for a trial at quinine, when we find a patient presenting these symptoms, and having no definite diagnosis, even though the blood examination is negative.

Patient admitted from clinic to ward in a delirious condition. No history obtainable, except that he had been drinking heavily. Urine showed specific gravity 1.013, acid, and 2.5 per cent. albumin, with firely granular and hyaline casts. Blood examination was negative.

Physical examination. White male, emaciated, jaundice marked, very anæmic, strong odor of alcohol to breath. Face flushed. Delirious, very nervous, and in semicoma-Face flushed. Delirious, very nervous, and in semicomatos state. Eyes, the pupils were dilated equally, but reflexes present. Vessels mjccted. Sclera, yellow. Mucous membrane was pale and very anæmic. Lips were dry and cracked. Tongue, heavily coated with thick brown mass, and broad, dry, and swollen. Pulse was weak and irregular. Skin dry and hot. Nausea; yomiting; bowels loose and profuse and voiding involuntarily. In heart and lungs nothing, was noted. Supern was enlarged and nalpals. nothing was noted. Spleen was enlarged and palpable.

nothing was noted. Spleen was enlarged and palpable. On admission patient was put to bed, after cleansing bath, and given alkaline diuretic, hot saline enema, and stimulation, treating symptomatically. On second day of admission hyalin and segmenting forms of malarial plasmodia were found, and at once began quinine, starting with fifteen grains or thirty minims of quinine hydrochloride, by injection, every two hours until four doses were given, and injection, every two hours until four doses were given, and then ten grains every four hours, hypodermically, until patient became conscious, fifty-two hours after first dose of quinine. Also gave stimulation, hydrotherapy for temperature, alkaline diuretics, and feeding by rectum. When patient became conscious, and during rational periods, he stated that during the past five weeks he had been working in swamps and had contracted malarial fever, taking quine at different times, but would continue to have irreducing the state of the contraction of the contrac in swamps and not contracted mataria fever, taking qui-nine at different times, but would continue to have irregu-lar chills and fever, and, reaching New Orleans about three days before admission. began drinking heavily. Fifth day. Patient was completely rational, showing improvement; from then on he continued to improve, until

discharged.

Blood showed forty per cent. hæmoglobin and distinctive leucocytic counts; neutrophiles, sixty-two; small lymphocytes, eighteen; large lymphocytes, sixteen; and transi-

(Charts for each of these cases will be found at-

tached to this paper.)

These three cases were all reported as comatose form, and two were from the swamps surrounding Louisiana, and one from Central America. In the examination of malarial blood, I was surprised at finding a difference in the lymphocytosis, and began a series of blood examinations. I would like to report said findings in the distinctive leucocytic counts, as made by me from these cases.

Malarial fever contracted in Louisiana, patients never having been in any Central American port,

blood findings as follows:

Tertian form of plasmodia found in the following twelve cases, with distinctive leucocytic counts in percentage as follows:

| | | . 2 | 3 | 4 | 5 | 6 | 7 | 8 | 2 | 10 | 1.1 | 1.2 | Average. |
|-------------------------|-------|-----|-----|-----|-----|-----|-------|-----|-----|-----|--------|------|----------|
| Neutral tiles | 5.4 | 6.5 | 6.8 | 63 | , | 60 | 68 | 5.5 | 7.1 | 65 | 50 | -: | 0,3 |
| Large lymphocytes | | 1 5 | | 1.0 | | 14 | 10 | 1.4 | 8 | 1.0 | 1.4 | 0 | TT |
| Small lymphocytes | | 16 | t a | 1.4 | . 5 | 26 | 18 | 20 | 23 | 2.2 | - 5 | :8 | 21 |
| Transforal | | 1 | | = | | | 3 | 3 | 2 | 2 | 1 | 2 | 2 |
| Essir philes | | 3 | 1.2 | 3 | | | 1 | 2 | | T | 5 | | 2 |
| | _ | | | | - | _ | - | | | _ | - | www. | _ |
| | 7 344 | 100 | 100 | 100 | 100 | 100 | 2 3/1 | 100 | 100 | 100 | 2 + 17 | 2000 | 99 |
| Hæm el hin estem te, ir | | | | | | | | | | | | | |
| per cent | | , 9 | 15 | 0.0 | 58 | 70 | 65 | 58 | | | | 24 | |

In Case III, where we found twelve per cent. eosinophiles, the fæces were examined and no ova uncinaria found.

The following eight cases were æstivoautumnal variety from the swamps surrounding Louisiana, showing percentage in distinctive leucocyte count as follows:

| | | | | | | | | | Aver |
|-------------------|-----|-----|-----|-----|---------|-----|-----|-----|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | age. |
| Neutrophiles | 50 | 62 | 5.5 | 49 | 79 | 65 | 58 | 52 | 58 |
| Large lymphocytes | 18 | 16 | 18 | 13 | 10 | 16 | 15 | 18 | 15 |
| Small lymphocytes | 24 | 18 | 27 | 28 | 8 | 18 | 20 | 25 | 21 |
| Transitional | 4 | 4 | | | 3 | 1 | 5 | 3 | 2 |
| Eosinophiles | 4 | | | | | | 2 | 2 | 1 |
| | _ | _ | | _ | 49-11-2 | _ | | | - |
| | 100 | 001 | 001 | 100 | 100 | 100 | 100 | 100 | 97 |
| Hæmoglobin esti- | | | | | | | | | |
| mate in percent. | | 40 | | | 30 | | | | |

Cases II and V are the two comatose cases reported before.

The following six cases all came from some tropical port, either Panama, Colon, Central America, or Spanish Honduras. The first six showed the tertian form of plasmodia, and counts reported as follows in per cent.:

| | 1 | 2 | 3 | 4 | 5 | 6 | age. |
|----------------------|-----|-----|--------|-----|-----|-----|------|
| Neutrophiles | 63 | 62 | 59 | 40 | 55 | 48 | 5.4 |
| Large lymphocytes | 13 | 16 | 8 | 4 | 10 | 9 | 10 |
| Small lymphocytes | 18 | 20 | 33 | 47 | 3.2 | 39 | 3 1 |
| Transitional | 1 | | | | 1 | 2 | I |
| Ensinophiles | 4 | 2 | | 7 | 2 | 2 | 2 |
| | _ | - | Allena | - | - | _ | _ |
| | 100 | 100 | 100 | 100 | 100 | 100 | 98 |
| Hæm-globin, per cent | 48 | 45 | 40 | 30 | 40 | 45 | |

Case IV, having an eosinophilia, fæces were examined, but no ova uncinariæ found. In these reports, we see for the first time, an increase in the small lymphocytes.

The following nine cases were all from some tropical port, and blood showed æstivoautumnal parasite:

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | age. |
|--------------------|-----|-----|-----|-----|-----|------|-----|-----|-----|------|
| Neutrophiles | 29 | 45 | 4.7 | 37 | 5.2 | fs i | 4.5 | 38 | 35 | 4.3 |
| Large lymphocytes. | 27 | 6 | 2 | 8 | - 8 | 7 | 8 | 8 | 0.1 | 9 |
| Small lymphocytes. | 43 | 44 | 49 | 5.5 | 38 | 3.1 | 35 | 52 | 50 | 4.3 |
| Tran-itional | - 1 | 1 | | | | | 2 | 2 | 3 | 1 |
| Eosmophiles | | 4 | 2 | | | 1 | 10 | | 2 | 2 |
| | | | _ | _ | - | - | | - | - | _ |
| | 001 | 100 | 100 | 100 | 100 | | 100 | 100 | 100 | 0.8 |

Case VIII was from Puerto Rico, and ova uncinaria were found in the fæces. In this last report we find a marked increase of the small lymphocytes, and in comparing the two classes, those from the tropical ports and those from the States, the lymphocytosis is marked in one with a small lymphocytosis and a slight increase of the large lymphocytes in the other, as the report shows.

In regard to symptomatology, I noted the following: Out of forty cases treated in my service. thirty-six patients had chill followed by fever, and four did not have any chill; thirty-two had severe headache, and eight no history of any pain at all; twenty complained of pains in back and other parts of body. Onset was sudden in thirty-four cases. Tongue was coated, swollen, moist, and foul odor to breath in twenty-eight patients. Nothing noted in ten patients, and two cases reported as dry, pointed, and thick, whitish fur on tongue. Eyes: Sclera yellowish, and jaundice noted in twenty cases; twelve having nothing noted, and eight with watery and injected eyes. Mucous membrane pale and very anæmic in nineteen cases; pinkinsh and healthy in twelve cases, and nothing noted in nine cases. Skin had a yellowish tinge in twenty cases; dry and hot in twenty-five cases. Urine showed febrile reaction in thirty-four cases; nothing noted in six cases. Bowels were constipated in thirty-one cases; diarrhœa in seven cases, and nothing noted in three cases. Pulse was full, bounding, and rapid in 25 cases, but pulse was generally in ratio to fever. Fever in twenty-five cases was above 104° F. on admission; in twelve cases was between 99° and 100° F. Fall of temperature in all cases was followed by profuse perspiration. Spleen was enlarged and palpable in thirty-one cases, and also tenderness noted in twenty-eight cases out of these thirty-one. In nine cases spleen was not palpable.

The following diseases were associated with malarial infection, out of forty cases treated:

Acute bronchitis in four cases; chronic bronchitis in two cases; pulmonary tuberculosis in five cases; pneumonia in one case; alcoholism in six cases; delirium tremens in one case; acute gastritis in one case; dysentery in one case; conjunctivitis in two cases; pharyngitis in one case; orchitis in one case; gonorrhoa in five cases; uncinariasis in one case; acute fibrinous pleurisy in one case; chronic cardiac valvular disease in four cases; chronic interstitial nephritis in twelve cases, and typhoid fever associated with one case.

In conclusion, I wish to state that, during the year 1907, there were treated in the wards of the Charity Hospital 325 cases of malarial fever, out of which 267 were white and 58 colored, with only two deaths resulting from malarial fever, and those patients were moribund on admission.

125 whites and 26 colored discharged as cured.
134 whites and 28 colored discharged as improved.
7 whites and 3 colored discharged as stationary.
1 white and 1 colored died.

Classified as follows:

| | Colored | . Total. | White, C | olored. | Total. | White. | Improve Colored. | | White. | Stationa Colored. | | White. | Died. Colored. | Total. |
|----------------------|---------|----------|----------|---------|--------|--------|---------------------|-----|--------|----------------------|----|--------|-------------------|--------|
| Malarial cachexia 20 | 8 | 28 | 1 | | 1 | 18 | 7 | 25 | 1 | 1 | 2 | | | |
| Tertian 165 | 38 | 203 | 83 | 20 | 103 | 76 | 17 | 9.3 | 6 | 1 | 7 | | | |
| Quartan | | 1 | I | | 1 | | | | | | | | | |
| Estivoautumnal 79 | 1.1 | 9 | 39 | 6 | 4.5 | | | | | 1 | 1 | | | |
| Perturbations 2 | 1 | 1 | I | | 1 | 40 | 4 | 4.1 | | | | 1 | | 2 |
| _ | _ | _ | - | | _ | | | | - | _ | - | | | |
| 267 | 58 | 32" | 1-15 | 26 | 1.11 | 134 | 28 | 162 | 7 | 3 | 10 | 1 | 1 | |
| | | | | | | | | | | | | | | |

The two cases reported in this paper were classified as æstivoautumnal, and in my service I had one

case of double tertian, or quotidian, but it was classed as tertian.

5131 DRYADES STREET.

THE CORRECT TREATMENT OF FRACTURE OF THE CLAVICLE.

By Rocco Bellantoni, M. D., New York.

Directions for the treatment of fracture of the collar bone are as follows: a, Force the exterior part upward, outward, and backward. b, Push down the interior part. c, Secure the two parts in their correct position until complete union has taken place.

All the efforts of the surgeons are directed toward the avoidance of any deformity of the injured part. The great variety of apparatus and the many methods in use for its treatment demonstrate the practical difficulties in such cases.

The greatest difficulties are not found in the adjustment of the broken ends, but in keeping the parts in good position. I will not mention here the different methods for doing this, because they are too well known, and none of them is perfect.

My method, I assert, is superior to others, for the reason that it is more simple, and yet meets all the requirements of treatment. It is absolutely convenient for the patient, permitting him to walk, to eat, and to sleep without discommoding him to any extent.

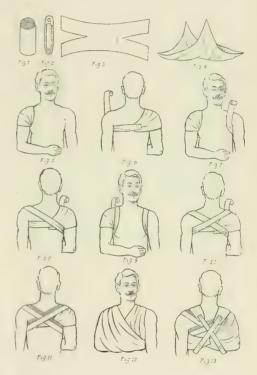
The figures illustrate my method very clearly, and only a few words are necessary to make it entirely comprehensible.

The materials necessary for the operation are: 1, Gauze bandage, three or three and one half inches wide (Fig. 1); 2, about twenty safety pins (Fig. 2); 3, a piece of white linen or cotton fabric, about eight inches wide and one foot and a half long, this fabric must be cut in the middle of each end, as shown in Figure 3; 4, a handkerchief (Fig. 4). large enough for a sling to hold the arm firmly and with safety pins to secure it at the back; 5, a package of absorbent cotton. The dimensions of bandage and cloth that I have here recommended are for an adult of normal dimensions, but it must vary according to the stature of the patient.

The operation begins with fitting well the linen or cotton fabric to the shoulder of the fractured side; the Figures 5 and 6 show clearly the manner how the fabric must be fitted and the ends of it The edge of the bandage must be firmly attached with four pins to the four gathered ends of the cotton fabric (Fig. 6). After this we must exactly bring together the osseous parts. The first turn of bandage is under the armpit of the opposite side (Fig. 6), and then up the same shoulder (Fig. 7); it turns then across the back and under the armpit of the injured side (Fig. 8); then with the remainder of the bandage we repeat the same turns until all is used, making the passes in the form of a figure 8 (Figs. 9, 10, and 11). The binding must be very tight, especially in the first turn, as it must hold the shoulder in the right position and be a firm support for the broken part. These turns made in the form of a figure 8 enable us to secure the two parts in their proper position and the necessary

compression, particularly on the interior side. Finally we fix the unfolded handkerchief (Fig. 4) in the manner indicated in Figs. 12 and 13, viz.: place the elbow bent so that the forearm of the injured side lies across the body in the folded hand-kerchief (Fig. 12), two ends of which are firmly attached to the back, while the other two are brought up to the shoulders and fastened with two strips of bandage crossed on the back (Fig. 13). In the armpits and upon the broken collar bone there must be placed little cushions of absorbent cotton to prevent friction.

The apparatus must be taken off fifteen or twenty days after the operation; and, if the physician thinks it necessary, the dressing may be renewed complete-



ly or reduced to the simple application of the hand-kerchief.

The apparatus is of extreme simplicity: Theoretically it answers to all needs of the case, while practically, if it does not answer well in all cases, it certainly will have advantage over all methods in that it is effective in the complete union of the greatest number of cases. And this without great annoyance to the patient, or great sacrifice of his habits, because the apparatus permits him to sit down, to walk, or to use the other hand for all the ordinary needs of daily life.

371 BROOME STREET.

A NEW OPERATION FOR HÆMORRHOIDS.*

By Charles William Heitzman, M. D., Kansas City, Mo.

All operations for hæmorrhoids may be conveniently classed under three heads: The ligature methods, the Whitehead operation with its modifications, and the clamp and cautery operation. These methods are too well known to require description. The dangers attending these methods, prominently con-

sidered, are:

The ligature method.—The puncture of a needle or a snip of the scissors can readily carry the Bacillus coli communis (whose function as an infective agent in all parts of the body is being recognized more and more) or other pathogenic bacteria into a vein and produce an infective thrombophlebitis with subsequent embolism and death. Given a clean field the same process may be set up, for the thrombi in the hæmorrhoidal veins are frequently already infected presumably with the Bacillus coli communis, and, granted that the thrombi are simply noninfective clots, such an embolus may result seriously.

The Whitehead operation and its modifications .-The common objection to this operation is based on the severity of the hæmorrhage, especially in those more or less debilitated by the loss of blood. The ultimate results of this operation are not always what are to be desired. In a certain number of patients stricture of the anus of greater or less severity develops a most distressing condition. Complete primary union practically never occurs. On the other hand, some of the patients have incontinence of fæces from interference with the nerve supply of the sphincter. In either case the patient has made a poor exchange for his hæmorrhoids. Summed up the objections to this operation are: The danger of simple or infective embolism, the risk of stricture, and the risk of incontinence, which far outweigh its operative nicety.

The clamp and cautery method.—This is the least attractive from a strictly operative standpoint; however, if properly performed, the arguments advanced in its favor greatly outnumber those of the other methods. The danger of infection is reduced to a minimum since there is no wound of the mucous membrane except that produced by the cautery which destroys bacteria and at the same time seals

It will be noticed that the operation which I shall describe bears a similarity to the Mayo procedure for the eradication of varicose veins of the leg.

Description of operation.—After the usual preparation of the patient, the tumors are exposed successively and held between the thumb and the finger or with forceps. An incision is then carried in the long axis of the bowel through the mucous membrane, care being taken so as not to wound the bloodvessels. The bloodvessels being now exposed, they are grasped with forceps and traction applied. This, as a rule, will liberate the vessels, if not, the use of a small, blunt spoon or currette will materially assist in breaking up inflammatory adhesions of the connective tissue. When by this method the hæmorrhoidal vessels are thoroughly exposed through the

cut in the mucous membrane, a ligature of small sized catgut is applied above and below. Now the vessels are extirpated with scissors or knife. incision in the mucous membrane is closed with like suture material. I have found, however, that unless the incision is large it heals just as readily without suturing, being hermetically sealed with blood clot. Should too much redundant tissue remain, it may be removed, carrying the incision in the form of an ellipse and closed as before. It is surprising, however, how much the mucous membrane will shrink after removal of the vessels. The only dressing used is a sterile pad over the anal region. The operation is best performed without the use of sponging, a drip of boric acid solution being employed to keep the

Limitations.—The operation is not applicable to the friable or capillary form, nor to the so called connective tissue or cutaneous hæmorrhoids.

Superiority of the operation.-It is at once thoroughly surgical as well as simple. Little hæmorrhage during the operation and the danger of secondary hæmorrhage are reduced to a minimum. It is a comfortable operation for the patient; there is practically no pain. The edges of the wound are thoroughly coaptated, causing prompt healing and the absence of a cicatrix. The cause is removed, not merely a bunch of mucous membrane, as is often the case with other operations; therefore the probabilities of recurrence are limited, more so than with other operations, to say nothing of unfortunate sequelæ such as I have mentioned.

References.

Liberal quotations from The Relative Merits of the Operations for Hæmorrhoids, by J. D. Singley, A. M., M. D., Journal of the American Medical Association, September 19, 1908.

328 Argyle Building.

Therapentical Hotes.

Treatment of Rocky Mountain Spotted Fever. -According to A. A. Robinson, who publishes an interesting, historical, and clinical study of the disease (Medical Record, November 28, 1908), the treatment of Rocky Mountain spotted fever is principally expectant and symptomatic, no specific medication being available. He notes that some western physicians advise early removal of the tick by applying a volatile oil, such as kerosene or turpentine, and cauterization of the wound with ninety-five per cent. carbolic acid, though this treatment has generally proved futile. Calcium sulphide is regarded favorably and arsenic is said to have a controlling and curative effect on the disease. Kieffer recommends the hypodermic injection of from fifteen to thirty minims twice daily of the following solution:

So lium arsenate, gr. iss; Cocaine hydrochloride, gr. vi; Distilled water, 3iiss.

M. Ft. solutio.

It is thought that atoxyl might be of service in the treatment of spotted fever in view of the results obtained from this preparation of arsenic in trypanosomiasis and in syphilis.

Read before the Tackson County Medical Society, November 3, 1908.

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NEW YORK, SATURDAY, DECEMBER 12, 1908.

A RED LETTER YEAR IN PHILADELPHIA CHARITY.

The Thirteenth Annual Report of the Philadelphia Society for Organizing Charity bears this title. The financial crash of 1907 came in October, but it was not until January, 1908, that the applications to the society for relief were double their number in the same month of 1907. In March, April, and May the number of applications was quadrupled. The writer of the report compares the situation to the cry of "Fire" in a crowded public hall. The exits from the danger are described as the exit of emigration, migration, change of occupation, part time work, savings, credit, the help of neighbors, the help of individuals, the help of churches and other social organizations, and the help of relief agencies. He shows how these various methods were employed in Philadelphia from October, 1907, to September, 1908, during which time applications were received at the central office or its branches from 9,946 families and 930 nonresidents, and at the two wayfarers' lodges conducted by the society from 16,254 individuals. In addition to the work secured for applicants, \$36,667.85 were distributed to 5,284 different families.

Much may be done in a given community to relieve the needs of the poor and the unfortunate by referring individual applications to the local society. whose trained investigators will determine the legitimacy of the appeal and provide relief through one of the agencies enumerated above. Physicians in particular are able to assist in lessening the amount of professional indigence in a community by referring demands upon their charity to such a society for investigation. The dispensaries attached to hospitals would do well either to refer applicants for free treatment to such a society or to employ a worker trained along the lines of economics to investigate the claims of those who apply for free

The individual system of relief adopted by societies for organizing charity "makes a loan to one, sends another to the woodyard to work for all he gets, staves off the landlord's eviction notice for a third, finds a chance to work outside for a fourth, places the fifth in a hospital, sends the sixth and his whole family to the country, provides cash for the exceptionally provident buyer who is the seventh, relieves the improvident eighth sparingly with supplies plus a work test, and, instead of doing work twice over, turns the ninth over to the charity that is already caring for him."

The thing most needed during a financial crisis for the self respecting individual is "real work at real wages." That thing is hardest to get. It is much easier for the person with the full pocket to give a piece of money than to help maintain a poor man's self respect by providing the means for him to support himself and his family. The man who does not wish to provide for his own dependents by his own exertions had much better be allowed to go unassisted. The Society for Organizing Charity will attend to the details of investigation for any one who refers cases to it.

THE NATIONAL HEALTH SERVICE.

We commented recently on the prospects of obtaining a national "department" or an enlarged bureau of public health. The arrangement of some of the details may require considerable time. Reference to some of them was made in our previous article.

The plans of those most active in the movement contemplate the transfer of a number of bureaus whose activities are more or less closely related to public health matters to one department and the removal from the latter of other bureaus which have no special relation to health. Thus, it is proposed to transfer part of the work of the Bureau of Chemistry of the Department of Agriculture to another department. We do not see that very much would be gained by this. All the activities of the Bureau of Chemistry are almost inextricably interwoven with purely economic problems, and that portion of the work relating more directly to public health is satisfactorily performed under the present arrangement. work, so far as it relates to public health, is clearly defined. It is the enforcement of the Pure Food and Drug Law, and in this there must of necessity be considered many questions concerning honest labelling, practical methods for the production and preservation of food products, and other subjects which are far more of commercial than of purely hygienic importance. (Witness, for example, the extensive discussions as to the proper labelling of whiskey-a matter of great commercial, but of little public health interest.) We are inclined to think that this work is best done where it is, viz., in a department which is in touch with actual economic conditions. The economic aspects of food problems are, moreover, so important that the Department of Agriculture certainly could not discontinue all work on this subject. A transfer such as is contemplated would almost necessarily mean the establishment of a new Bureau of Chemistry in the Department of Agriculture, and this would result in the duplication of much work. Similar arguments apply to the work of the Bureau of Animal Industry and to that of the Division of Vital Statistics of the Census Bureau; the transfer of parts of this work would mean a similar duplication of machinery.

And we should not lose sight of the fact that as recently as in 1902 Congress, after careful consideration, organized the Marine Hospital Service into the present Public Health and Marine Hospital Ser-This reorganization was effected on such broad lines that Congress evidently expected that the new bureau could, under proper guidance, meet the growing demands for public health work. It would not be strange if Congress should hesitate to reopen this entire subject so soon, especially at a short session. We are not opposed to the general plan of consolidation; it would certainly add dignity to the work, and those who are giving the matter careful consideration do not seem to think that there will be great difficulty in bringing it about. The point we desire to emphasize, however, is that there may be considerable delay in effecting this union, and we fear that some in their enthusiasm have overlooked certain points of more immediate and practical importance.

Granting that such a rearrangement of public health work is secured and a new department or subdepartment established, the strength of the latter will depend solely upon the strength of the units which go to form it. No one questions that by far the most important bureau dealing with public health matters is the present Public Health and Marine Hospital Service, and the strength of the enlarged bureau would at present be determined chiefly by the strength of this service. If this bureau is

transferred to another department, one of the first things necessary to make the enlarged bureau more efficient would be the strengthening of this unit. Why, then, should not those in favor of a stronger national bureau of health use their influence to strengthen the present one? Then, if the proposed consolidation is delayed, something at least will have been gained.

There are at present two measures before Congress which have for their purpose the strengthening of the Public Health and Marine Hospital Service. One of these, known as the Public Health Bill, authorizes the bureau to investigate any disease of interest to the public health, to cooperate with the State boards of health, and to publish and distribute information of a popular nature concerning sanitary matters. It would enable the Hygienic Laboratory to investigate the interstate relations of typhoid fever and other infectious diseases, and the splendid work of Stiles on the hookworm disease in the South (now being carried on under the auspices of the Department of Commerce and Labor and of the President's Farm Commission) would be done in the name of public health. Authority to do work of this character and the means for doing it must be obtained, whether different bureaus are united or not, and the present Public Health Service is admirably organized to do it. Why should we not try to get this legislation carried through at once?

The passage of the second bill now before Congress-the Personnel Bill-is no less necessary and urgent, for not only the strengthening but for the maintaining of the present efficiency of our most important public health agency. Until recently, the pay and other emoluments of the physicians in the three national services have been approximately equal, and the Public Health Service has been able to secure as efficient men for their warfare with disease as the other services have. Recent legislation, urged by the medical profession and by the President of the United States, has properly increased the attractiveness of the other services greatly, so that now the pay of men of equal ability, age, and experience in the other services is far in excess of that of those in the Public Health Service. Unless this condition is remedied in the very near future, it is self evident that the efficiency of the service will diminish and the efficiency of the proposed new bureau will be correspondingly less. The Personnel Bill (which has passed the Senate and is now before the House) simply provides that the pay and other emoluments of the members of the Public Health and Marine Hospital Service shall be approximately equivalent to those in the other branches. Those who are most enthusiastic over the proposed national health movement seem to us

to be losing a golden opportunity of doing something of immediate and practical usefulness. "Unpreparedness for war" has been a potent argument in the legislation for increasing the efficiency of the medical corps of the army and navy. Have we not reached the stage of civilization where preparation for the incomparably greater warfare against preventable disease should be equally potent? This is a matter of such vital importance that physicians should use all their influence by appealing to their Congressmen and Senators to urge the immediate passage of these two bills. Even if the bureaus are united, this work will have to be done if the larger bureau is to have anything more than a nominal existence. Why not take advantage of what has already been accomplished and turn our hands to what lies nearest to us?

THE SERUM TREATMENT OF HÆMOPHILIA.

Here in New York there has of late been some indication of a tendency to revive transfusion of blood for the purpose of arresting hæmorrhage in hæmophiliacs. It seems, however, that a less formidable procedure is sufficient—that of injecting a small amount of normal serum into a vein or even under the skin. In cases of an accessible wound, too, a simple dressing of serum has been known to prove efficacious. The investigations that have led up to the establishment of the serum treatment have been largely the work of our French brethren, and particularly that of Dr. Emile Weil.

Summarizing the observations of Weil and others, Dr. François Dejardin, of Liège, Belgium, contributes an interesting article to the July number of the Archives provinciales de chirurgie. He outlines the leading points in our knowledge of the nature of hæmophilia, covering both the hereditary and the acquired forms, and of the modes of action and degrees of efficacy of such remedial measures as the administration of calcium chloride, the injection of gelatin, and the topical use of styptics, including that of adrenalin. The use of normal serum is shown to be preferable to that of any other agent, though Dejardin properly advises that the concomitant employment of other measures should not be neglected.

We may use the fresh serum of the rabbit, the horse, or the human subject. If it is employed by intravenous injection, the amount injected daily should be from ten to twenty cubic centimetres (approximately, from two and å half to five fluid drachms); if it is injected subcutaneously, the amount should be from ten to thirty cubic centimetres (from two and a half to seven and a half

fluid drachms). It is sufficient to continue the injections for two or three days, during which time the desired effect will have been secured, whether the checking of an existing hæmorrhage or the prevention of undue bleeding in the course of a contemplated operation; and the benefit may be expected to last for a month or more.

For some unexplained reason, it is dangerous to use the serum of the ox, as has been shown in a number of cases. If an emergency arises under circumstances in which the fresh serum of the rabbit, the horse, or the human subject is unavailable, a perfectly efficient substitute is to be found in the ordinary antidiphtheritic serum. This fact seems to have been announced first by Weil, but in actual practice Dejardin had anticipated Weil's publication of it. The antidiphtheritic serum, of course, is now readily obtainable almost everywhere; consequently the serum treatment of hæmophilia can always be carried out by the general practitioner. There is reason to believe that it will prove of general benefit in this curious disease.

THE DISINGENUOUS ANTI-VIVISECTIONIST.

Dr. Walker B. Cannon, of Boston, the chairman of the American Medical Association's Council on Defense of Medical Research, has issued a circular, dated December 1st and addressed to editors of medical journals, in which he asks for the aid of the journals in "obviating as completely as possible any cause for complaint against animal experimentation." He goes on to remark that much of the "evidence" cited by hostile agitators is taken from articles in medical journals, said agitators seeking to make it appear that the investigations on animals referred to in the articles were conducted without the use of an anæsthetic. Dr. Cannon therefore says: "In every instance in which anæsthesia is a condition of the investigation, will you not point out to authors the importance of making that fact prominent?"

While we do not see the necessity of giving prominence to the statement that anæsthesia was secured in experiments that would have been painful without it, we do appreciate the desirability of noting the fact, and we shall be glad to take the course suggested by Dr. Cannon so far as a plain statement is concerned, and that ought to be sufficient for the purpose. It goes without saying, of course, that an author's omission of such a statement is due to his taking it for granted that the reader of his article does not need to be told in every instance that an experiment was conducted with the animal in a state

of anæsthesia. Medicine is a humane profession, and it is distinctly disingenuous for the opponents of vivisection to convey the impression that anæsthesia was omitted in a given instance simply because the experimenter has not thought it necessary to proclaim the fact that it was employed. But we must head off this disingenuousness, and we therefore request our contributors to accede to Dr. Cannon's suggestion.

THE ARMY TO BE IMMUNIZED AGAINST TYPHOID FEVER.

By the courtesy of Surgeon General O'Reilly, who presided at the sessions of the board of officers of the Medical Reserve Corps, which was convened at the War Department on December 7th, to consider the advisability of immunizing the army against typhoid fever, both in time of peace and during war, we are enabled to present the findings and recommendations of the board, which consisted of the following members: Surgeon General Robert M. O'Reilly and Captain Frederick F. Russell, of the Medical Corps, recorder, and First Lieutenant Victor C. Vaughan, First Lieutenant John H. Musser, First Lieutenant William T. Councilman, First Lieutenant Alexander Lambert, First Lieutenant Simon Flexner, and First Lieutenant William S. Thaver, of the Medical Reserve Corps.

The board found that the practice had been used during the Boer war in South Africa, where about one hundred thousand men were vaccinated, but that no reliable statistics were at hand to show the results since that time. However, about fifteen thousand men in the English and German colonial armies had been vaccinated against typhoid, and complete and carefully compiled statistics had been collected, from a consideration of which the board was convinced that the vaccination was quite harmless and that it would be of great service in diminishing the amount of typhoid fever among troops, especially in time of war. It therefore recommended that the practice of vaccination be introduced into the regular and volunteer armies in time of war.

The board further recommended that in times of peace all the men be given an opportunity to be protected against the disease, and that special efforts be made to vaccinate as many of the Hospital Corps and Nurse Corps and any others especially exposed as possible. It recognized that this disease spread by contact from man to man, and to an even greater extent than in the civil population; that in the Spanish war it produced an enormous amount of sickness and was the cause of eighty-five per cent. of all deaths; and that vaccination was a practicable, harmless, and effective that it is the contract of the camp epi-

demics which we had at that time. The board, therefore, recommended, with admirable foresight, the immediate introduction of the practice into the army so that the disease might be reduced to a minimum, and the necessary machinery for vaccinating large bodies of troops in time of war might be already on hand and available for use, and that the Medical Corps might become familiar with the technique of vaccination.

THE OUTCOME OF A NEWSPAPER SLANDER.

Many of our readers will recall the fact that, more than six months ago, a Philadelphia newspaper grossly misrepresented certain remarks made in a medical meeting by a distinguished physician and philanthropist, Dr. S. Adolphus Knopf. It will be remembered that the newspaper in question represented Dr. Knopf as having spoken in favor of "euthanasia" in the newspaper sense of the term, a sense which, though utterly false, has been hopelessly hammered into the popular mind, a sense which convicts those who approve of true euthanasia—as we all approve of it—of being potential murderers. The Philadelphia paper's slander was copied far and wide, and Dr. Knopf was vilified correspondingly. We protested against the slander at the time (see the New York Medical Journal for May 18th), and we are now glad to be able to record the fact that a suit brought by Dr. Knopf against the paper has been settled out of court, the paper paying Dr. Knopf a handsome sum in damages and publishing a correction of its original libellous statement. The amount of money received by Dr. Knopf from the newspaper has nobly been turned over by him to the funds of the National Association for the Study and Prevention of Tuber-Truly may it be said, therefore, that he has suffered for the cause of enlightenment regarding tuberculous disease, a cause for which he has labored unselfishly and unceasingly for many years.

Rems Atems.

Mrs. Sage's Gift to Nassau Hospital.—Mrs. Russell Sage has given \$5,000 to endow a bed in the hospital in memory of her friend, Miss Kate Riddell.

The Cottage State Hospital at Blossburg, Pa., will obtain the services of Dr. Frederick G. Davis, of Blossburg, as a member of the Board of Trustees, by the appointment by the Governor of Pennsylvania.

The Harvey Lectures.—The sixth lecture in the Harvey Society course will be delivered on Saturday, December 19th, at 8:30 p. m., at the New York Academy of Medicine, by Professor A B. Macallum, of the University of Loronto. The subject will be Osmosis

New Officers of the Philadelphia Society of Physiology. At a recent meeting of the Society of Normal and Pathological Physiology of the University of Pennsylvania, the following officers were elected for the ensuing year: President, Dr. David H. Bergey; vice-president, Dr. J. G. Hickey; secretary and treasurer, Dr. Harold B. Wood.

Changes of Address.—Dr. Flora M. Phelps, from Ocean Grove, N. J., to 224 West Fifty-second Street, New York.

Dr. Lindsley F. Cocheu, to The Colonial Studios, 39
West Sixty-seventh Street, New York.
Dr. Benjamin P. Farrell, to 256 West Fifty-seventh
Street, New York.

The Clinical Society of the Elizabeth, N. J., General Hospital will hold its next meeting on Tuesday, December 15th, at 9 p. m. Dr. E. B. Grier will read the paper of the evening on Some Inflammatory Conditions of the Falloppian Tubes.

The Mütter Lecture.—The annual Mütter lecture of the Philadelphia College of Physicians was delivered on Friday evening, December 11th, by Dr. George W. Crile, professor of clinical surgery at the Western Reserve University, Cleveland, Ohio. The subject was Surgical Anæmia

Resuscitations

The Pathological Society of Philadelphia.—At the regular semimonthly meeting of the Pathological Society of Philadelphia, held on Thursday, December 10th, Dr. F. Creighton Wellman, of Angola, Portuguese West Africa, spoke on the Relation of Insects to the Transmission of Disease

The Syracuse, N. Y., Academy of Medicine. - The regular meeting of this academy was held on Tuesday evening, December 8th. Dr. Nathan Jacobson read a paper on Senile Changes in the Prostate Gland, and Dr. Henry L. Elsner read a paper on Senile Pneumonia. Officers to serve for the year 1909 were nominated.

The West End Medical Society of New York.—The annual meeting of this society will be held on Saturday, December 19th, at the home of Dr. Charles Gilmore Kerley, 732 West Eighty-first Street, New York. Dr. W. Gilman Thompson will read a paper on Hospital Problems of Greater New York, and officers for the ensuing year will be

The Richmond, Va., Academy of Medicine.—The annual meeting of the academy was held on Tuesday, December 8th. Dr. E. Guy Hopkins read a paper entitled Some Internal Diseases due to Animal Parasites. Dr. W. A. Shepherd read a paper on Blood Changes in Leuchæmia and Pernicious Anæmia. Officers for the ensuing year

were elected.

Open Air School for Tuberculous Children .- A school for tuberculous children will be opened next week on the deck of the ferryboat, which is moored in the East River near Bellevue Hospital and is used as a day camp for tuberculosis patients. There will be accommodations for fifty pupils. Mr. Jacob J. Shufro has been appointed teacher by the Board of Education.

Contagious Diseases in Chicago.—During the week

ending November 28, 1908, there were reported to the Department of Health of the City of Chicago 968 cases of contagious diseases, as follows: Diphtheria, 222 cases; scarlet fever, 255 cases; chickenpox, 90 cases; pneumonia, 31 cases; tuberculosis, 189 cases; typhoid fever, 44 cases; whooping cough, 13 cases; diseases of minor importance,

25 cases.
St. Luke's Hospital, New York, to be Enlarged. Plans and specifications are being prepared for a ten story building to be erected in connection with St. Luke's Hospital, Morningside Avenue and One Hundred and Thirteenth Street, New York. The façades will be of marble and granite, light pressed brick and ornamental terra cotta, and the style will be in keeping with the present buildings of the hospital.

The Northwestern Medical Society of Philadelphia

held a stated meeting on Monday evening, December 7th. The programme consisted of a symposium on peritonitis. Papers dealing with the subject from the standpoint of the pædiatrician, from the standpoint of the surgeon, from the medical standpoint, and from the standpoint of the surgeon, from the medical standpoint, and from the standpoint of the gyne-cologist were read by Dr. James H. McKee, Dr. W. Wayne Babcock, Dr. Samuel Wolf, and Dr. Wilmer Krusen.

The Tri-State Medical Association of Arkansas, Mississippi, and Tennessee, held its twenty-fifth annual meeting in Marchia process.

ing in Memphis recently, and elected the following officers to serve for the ensuing year: President, Dr. William H. Deaderick, of Marianna, Ark.; vice-president for Arkansas, Dr. T. S. Hare, of Vincent; vice-president for Mississippi, Dr. S. W. Glass of Dublin; vice-president for Tennessee, Dr. J. A. Porter, of Ripley; secretary, Dr. Eugene Rosamond, of Memphis; treasurer, Dr. J. A. Vaughan, of Memphis.

American Pharmaceutical Association.—The City of Washington Branch of this association will hold a stated

Washington Branch of this association will hold a stated meeting on Monday evening, December 14th, in the National College of Pharmacy. The programme will include the following: Inaugural Address, by Dr. Harvey W. Wiley; The Analysis of Headache Mixtures, by Dr. W. O. Emery; The Assaying of Drugs, by Dr. C. E. Parker; Adulterated Drugs, by Dr. Lyman F. Kebler.

The Buffalo Academy of Medicine—The regular meeting of the Section in Medicine was held on Tuesday evening, December 8th. Dr. James W. Putnam read a paper entitled A Study of the Effects of Tedious Labors and Forceps Deliveries in the Production of Epilepsy Spasmic Paralysis, and Idiocy. Dr. P. W. Van Peyma discussed the subject from the obstetrical standpoint, and Dr. Irving M. Snow from the standpoint of pædiatrics. Charitable Bequests.—By the will of Peretz Rabino-

Charitable Bequests.—By the will of Peretz Rabinowitz the Hebrew Orphans' Home, Philadelphia, receives

By the will of Samuel Wakeling, the Home for Incurables, Philadelphia, and the Children's Hospital, Philadelphia, become contingent legatees.

At the third quarterly meeting of the Federation of Jewish Charities, Philadelphia, \$344,075 were distributed among the various Jewish charitable and beneficiary societies in

Philadelphia.

The Rochester, N. Y., Academy of Medicine.—The regular monthly meeting of the Section in Surgery, which includes anatomy, orthopædic surgery, ophthalmology, otology, laryngology, dermatology, and genitourinary surgery, was held on Wednesday evening, December oth. The programme included two papers, one entitled Deviations and Spurs of the Nasal Sæptum and their Removal by Submucous Resection, by Dr. Nathan D. MacDowell, and the other on Operative Lateral Sinus Thrombosis, by Dr. Bradford A. Richards.

The Philadelphia County Medical Society.—The Central Branch of this society held a meeting on Wednesday evening, December 9th. The programme included the folevening, December 9th. The programme included the following papers: Dysmenorrhæa and Allied Manifestations, by Dr. Ella B. Everitt; A Short Account of the International Congress on Rhinology and Laryngology, held in Vienna in 1908, by Dr. Margaret F. Butler; Suggestions Concerning the Treatment of Fractures, by Dr. Harriet L. Hartley; A Brief Statement of Our Knowledge of Cancer, by Dr. Martha Tracy.

The Health of Pittsburgh .- During the week ending November 28, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 13 cases, 0 deaths; typhoid fever, 17 cases, 3 deaths; scarlet fever, 39 cases, 4 deaths; diphtheria, 28 cases, 5 deaths; measles, 16 cases, 1 death; whooping cough, 5 cases, I death; pulmonary tuberculosis, 36 cases, 9 deaths. The total deaths for the week numbered 166 in an estimated population of 565,000, corresponding to an annual death rate of 15.27 in 1,000 population.

A Dinner to Dr. F. Creighton Wellman .- Dr. Thomas A Dinner to Dr. F. Creighton Wellman.—Dr. Thomas H. Fenton, ex-president of the American Society of Tropical Medicine, gave a dinner on Thursday evening. December 3d, at the Art Club, in honor of Dr. F. Creighton Wellman, who has been in Angola, West Africa, for the past eight years, in the employ of the Portuguese Government Among the guests were Dr. James M. Anders, Dr. Edward J. Nolan, Dr. Joseph McFarland, Dr. John M. Swan, Dr. Henry Skinner, Dr. Roland G. Curtin, Dr. Alfred C. Lambdin, and Dr. James C. Wilson.

Personal Dr. Wilfred T. Granfall the English spec

Personal.-Dr. Wilfred T. Grenfell, the English speresonal.—Dr. Wilfred I. Grenfell, the English spe-cialist and philanthropist, will visit Baltimore on December 15th and 16th. While he will be the general guest of the Grenfell Society of Baltimore, he will be the special guest of Dr. Henry M. Hurd, of the Johns Hopkins Hospital. Dr. Carlos Finley has been appointed honorary chief of the National Department of Sanitation of Cuba, in recog-pition of his discovery of the posquity theory of vallow

nition of his discovery of the mosquito theory of yellow

Dr. F. D. Andrew, of Rochester, N. Y., has had his left hand amputated, as a result of disease caused by exposure

Miss Ida Uraka, who graduated with honors from the University of Berlin, was recently appointed a professor in the medical college of Tokio, Japan. Miss Uraka is the first woman to hold such a position in Japan, and she is meeting with much opposition from the conservative ele-

The New Maternity Hospital at Springfield, Mass .--The Wesson Materinty Hospital, a beautifully equipped, modern institution, was dedicated with proper exercises on November 20th. Mr. William W. McClench, president of November 20th. Mr. William W. McClench, president of the board of trustees, presided, and the building was formally turned over to the trustees by Dr. P. W. Roberts, who made the principal address. The funds for the building of this institution were given by the late Mr. Daniel B. Wesson, who also provided for its maintenance by an endowment fund of \$25,000.

Popular Science Lectures in Philadelphia.—Announcement has been received of the Ludwick Institute Courses of Free Lectures on the Natural Sciences and their Application, which gas held under the assigner of the Acade-

Application, which are held under the auspices of the Acad-Approximation, which are need under the auspices of the Academy of Natural Sciences of Philadelphia. There are eight courses in the series, with five lectures in each course. These lectures are free to the public, and complete programmes of the courses may be obtained from the chairman of the Ludwick Institute Committee on Instruction.

Dr. Samuel G. Dixon, or from the academy.

A Tuberculosis Exhibition at Tuskegee.—A negro

congress on tuberculosis will be held at Tuskegee, Ala, during the week of December 14th. The National Association for the Study and Prevention of Tuberculosis will send its traveling exhibit, where it will be displayed on the grounds of the institute. An extensive programme of illusgrounds of the institute. An extensive programme of instructed addresses, platform meetings, and conferences has been arranged, along the lines of the recent International Tuberculosis Congress at Washington. This is the first congress ever devoted wholly to the welfare of the negro

Dr. Edward N. Brush Honored.—A public dinner was tendered Dr. Edward N. Brush, of the Sheppard and Enoch Pratt Hospital, Baltimore, on Friday evening, December 11th, by his many friends, who wished to express their per-Itth, by his many friends, who wished to express their personal regard for him and their appreciation of the great service he has rendered in the public and private care of the insane. Dr. Brush has completed thirty years of service in the institutions of New York, Pennsylvania, and Maryland; was at one time editor of the American Journal of Insanity; and has contributed largely to the literature

of psychiatry. Deutscher medizinische Gesellschaft der Stadt New Monday evening, December 7th, in the New York Academy of Medicine, Dr. S. Adolphus Knopi delivered an address on the Modern Fight against Tuberculosis Considered from the Social Medical Point of View. Among those who took part in the general discussion which followed were Mrs. Fiedler, a delegate of the French Government to the Tuber-culosis Congress; Dr. H. M. Biggs, Dr. J. Winters Bran-nan, Professor Livingston Farrand, Dr. A. Caillé, Dr. A. Jacobi, Dr. A. Meyer and Dr. Franz Torek.

Medical School Inspection in Chicago.—During the week ending November 28, 1908, the school medical inspectors examined 4,475 pupils, and excluded 271 on account of contagious diseases. Physical examinations were made of 434 pupils, of which 193 were advised to seek medical attention. The school nurses made 5,227 calls during the week, seeing 2,782 pupils. Of these 405 were referred to the school medical inspectors, 203 were sent to dispensaries, 18 were sent to hospitals, 249 to family physicians, 30 to the Visiting Nurses' Association, 3 to the Bureau of Charities, 5 to the Relief and Aid Society, and 10 to the County Agent.

The Colorado Souvenir Book for the International Congress on Tuberculosis, issued by the Colorado State Organization of the International Congress on Tuberculosis organization of the international Congress on Functionals contains much interesting information. It consists of 192 pages, is well printed, and beautifully illustrated. The first twenty-seven pages are devoted to articles by prominent Colorado physicians on the influence of the climate of Colorado on pulmonary tuberculosis, asthma, hay fever, nontuberculous pulmonary disorders, cardiac affections, and nervous diseases. A valuable feature of the book is a chapter on the Climates of the United States, by Dr. Charles charts of the United States, with a statement by General W. B. Hazen, chief signal officer at the time the statistics were compiled, to the effect that the seasonal averages do not vary five per cent, at the most in any instance from the general averages obtained for like periods since observations were commenced by the Signal Service. The book contains much general information regarding the State of

industries, resources, railways, mines, and forests. The beauties of Colorado's natural scenery are fully described and illustrated, as are also the principal towns and cities of the State. A list of the sanatoria in the State completes the volume. The book is distributed free to members of the International Congress and of the Colorado State Organization. Others who are interested may obtain copies by applying to the Exhibition Committee of the Colorado State Organization, 823 Fourteenth Street, Denver. price is 25 cents a copy.

Infectious Disease in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statistics of new cases and deaths reported for the two weeks ending De-

| | Nov. 28 | |
|--------------------------|----------------|----------------|
| | Cases. Deaths. | Cases. Deaths. |
| Tuberculosis pulmonalis | | 574 153 |
| Diphtheria | 358 47 | 385 39 |
| Measles | | 271 10 |
| Scarlet fever | | 221 7 |
| Smallpox | | |
| Varicella | | 179 |
| Typhoid fever | | 77 11 |
| Whooping cough | | 37 I |
| Cerebro-pinal newingitis | 5 7 | 7 7 |
| | | |
| Totals | 1,436 268 | 1,749 222 |
| | | |

Wills Hospital, Philadelphia, Ophthalmic Society. This society held a clinical conference on Monday after-noon, December 7th. Dr. Samuel D. Risley presented clin-ical memoranda showing a cause for some cases of persist-ent asthenopia. He also presented interesting data relating to intraocular harmorrhage. Dr. Charles A. Öliver reported a case of hypertrophy of the bulbar conjunctiva in an adult, a case of hyperrophy of the bilina confidence in an additional and presented a patient showing extensive blepharoplasty for restoration of the left upper lid. Dr. William Campbell Posey demonstrated Meller's operation for removal of the Poscy demonstrated Mener's operation for removal of the lachrymal sac. Dr. William Zentmayer made some remarks on retinochoroiditis juxta papille, and exhibited a patient. Dr. Harold Goldberg read a paper entitled The Report of

the Pathologist.

Vital Statistics of New York -During the week ending November 28, 1908, there were reported to the Department of Health of the City of New York 1,290 deaths from ment of Health of the City of New York 1.200 deaths from all causes, as compared with 1.346 for the corresponding period in 1007. The annual death rate in 1,000 population was 15.22 m the whole city, and in each of the boroughs it was as follows: Manhattan, 13.09; the Bronx, 20.39; Brooklyn, 15.62; Queens, 15.25; Richmond, 21.77. Of the total number of deaths 3,46 were of children under its years of age, and of these 222 were of children under one year of age. There were 82 violent deaths, 5 of which were due to homicide, 16 to suicide, and 61 to accidents. There were 140 stillbirths. Nine hundred and ten marriages and 2,357 births were reported during the week.

The Mortality of Chicago.—There were reported to the Department of Health of the City of Chicago 520 deaths from all causes during the week ending November 28, 1908. The annual death rate in 1,000 population was 12.52. Of the total number of deaths 161 were of children under five years of age, of which 112 were under one year of age. The principal causes of death were: Apoplexy, 12 deaths; Bright's disease, 20 deaths; bronchitis, 11 deaths; consumption, 62 deaths; cancer, 25 deaths; diphtheria, 9 deaths; heart diseases, 49 deaths; intestinal diseases, acute, deaths; meart unseases, 49 deaths; mestmar unseases, acute, 42 deaths; measles, 4 deaths; nervous diseases. 18 deaths; pneumonia, 61 deaths; scorlet fever, 13 deaths; suicide, 3 deaths; typhoid fever, 8 deaths; violence, other than suicide, 31 deaths; whooping cough, 1 death; all other causes, 142 deaths.

Scientific Society Meetings in Philadelphia for the Week Ending December 19, 1908:

MONDAY, December 14th.—Society of Normal and Patho-

logical Physiology.

Tussday, December 15th.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

Wrest toy, December 16th Section in Otology and Laryngology, College of Physicians; Franklin Insti-

tute.

Thursday, December 17th.—Section in Ophthalmology,
College of Physicians; Section Meeting, Franklin Institute; Southwark Medical Society; Northeast Branch,
Philadelphia County Medical Society; Delaware Valley
Ornithologists Club, Academy of Natural Sciences.

France December 18th American Philosophical Society.

The Section in Genitourinary Diseases of the New York Academy of Medicine will hold a stated meeting on Thursday evening, December 17th, at 3.3 clock Dr. B. Merrill Ricketts, of Cincinnati, will be the guest of the evening, and will read a paper on the Surgical Anatomy and Pathology of Ureteral Calculus and Its Operative Indications. It will be illustrated with lantern slide pictures. Other papers on the subject of the surgery of ureteral calculi will be read as follows: The Treatment of Ureteral Calculus, by Dr. A. V. Moschcowitz; The Operative Technique of Calculi Impacted in the Lower End of the Ureter, by Dr. C. L. Gibson; Cystoscopic Aid in the Diagnosis and Treatment of Ureteral Calculus, by Dr. A. T. Osgood; X Ray Aid in Diagnosis of Ureteral Calculus, with lantern slide demonstration, by Dr. L. Taches. The subject will be discussed by Dr. F. Tilden Brown, Dr. Willy Meyer; Dr. John F. Erdmann, Dr. Howard Lilienthal, Dr. Eugene W. Caldwell, and Dr. Lewis Gregory Cole. dications. It will be illustrated with lantern slide pictures

Free Medical Lectures at Harvard.-The faculty of the Harvard Medical School have announced the customary course of popular lectures on medical subjects. There are thirty-two lectures in the course, which will be given on Saturdays at 8 p. m., and Sundays at 4 p. m., dusing the first four months of the new year. The following is a list first four months of the new year. The following is a list of the subjects of the lectures for the month of January January 3d, Fifty Years of Surgery, by Dr. David W. Cheever; January 9th, Some Things Parents Should Know about the Teeth of their Children, by Dr. Charles A. Brackett; January 10th, Anatomical Variations, by Dr. Thomas Dwight; January 10th, Anatomical Variations, by Dr. Thomas Dwight; January 10th, Auditory Vertigo, Deafness due to Ear Diseases, by Dr. Clarence J. Blake; January 17th, Inflammation, by Dr. William T. Councilman; January 23d, Diphtheria and Scarlet Fever, by Dr. John H. McCollom; January 24th, The Circulation of the Blood, by Dr. William T. Perter; January 3oth, On the Work for the Relief of the Sick of Various Agencies other than Medical, by Dr. January 13tk Rabies (illustrated). by Dr. James J. Putnam; January 31st. Rabies (illustrated), by Dr. Langdon Frothingham.

The Health of Philadelphia.- During the week ending November 28, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 22 cases, 6 deaths; scarlet fever, 69 cases, 2 deaths; chickenpox, 91 cases, 0 deaths; diphtheria, 111 cases, 16 deaths; cerebrospinal meningitis, 1 case, I death; measles, 40 cases o deaths; whooping cough, 6 cases, I death; tuberculosis of the lungs, 102 cases, 49 6 cases, 1 death; tuberculosis of the lungs, 102 cases, 49 deaths; pneumonia, 45 cases, 42 deaths; erysipelas, 8 cases, 0 deaths; puerperal fever, 5 cases, 0 deaths; mumps, 9 cases, 0 deaths; cancer, 16 cases, 29 deaths; trachoma, 2 cases, 0 deaths; tetanus, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 2 deaths; the control of the lungs, 2 deaths; d diarrhœa and enteritis under two years of age, 8 deaths; dysentery, 2 deaths. The total deaths numbered 435 in an estimated population of 1,532,738, corresponding to an annual death rate of 14.71 in 1,000 population. The total infant mortality was 86; under one year of age, 72; between one and two years of age, 14. There were 27 stillbirths; 17 males and 10 females. There was only a trace of pre-

cipitation.

The Medical Society of the County of Ulster, N. Y. The annual meeting of this society, which was established in 1806, was held in Kingston, N. Y., on Tuesday, December 1st. Dr. Aden C. Gates, of Kingston, the retiring president, delivered the annual presidential address. Professor francis Valk, of the New York Postgraduate Medical School and Hospital, read a paper entitled The Eye Yesterday and To-day. Dr. J. J. Thomson, of the Manhattan Eye and Ear Hospital. New York, read a paper on Mastoiditis. Officers for the ensuing year were elected as foliows: Dr. James L. Preston, of Kingston, president; Dr. Thomas Keator, of Accord, reelected vice-president; Dr. Thomas Keator, of Kingston, reelected secretary; Dr. E. E. Norwood, of Kingston, treasurer; censors. Dr. Adelbert Mambert, of Kingston; Dr. Mark O'Meara, of Kingston; Dr. Aden C. Gates, of Kingston; Dr. Daniel Connelly, of Kingston; and Dr. Albert H. Palmer, of Marlborough; delegate to the Medical Society of the State of New York, Dr. Elbert H. Loughran, of Kingston; alternate, Dr. A. A. Stern, of Kingston; delegate to the Third District Branch Medical Society, Dr. Frank Keator, of Kingston; alternate, Dr. Joseph Bongartz. The following physicians were received into membership in the society: Dr. E. Forest Sibley, of Kingston; Dr. John R. Gillett, of Kingston; and Dr. Frederick Snyder, of Rosendale. Francis Valk, of the New York Postgraduate Medical

A Renewed Effort to Prevent Vivisection .- The medical profession of the State of New York has been requested to oppose the passage of a bill which is about to be introduced into the legislature to restrict experiments on living animals. The following circular letter has been sent to the physicians of the State by the Medical Society of the State of New York:

State of New York:

The be Practitioners of Medicine of the State of New York

The Society for the Prevention of Abuse in Animal Experimentation last year caused to be introduced into the Legislature of this State a bill seriously restricting experiments on living animals. The above named society now enters the field again and proposes another bill of the same general character as that of last year. The Medicial Society of the State, through its committees on legislation and experimental medicine, successfully opposed the passage of last year's measure. Acting under the resolution referring to animal experimentation, which was passed at the last animal medicine will oppose the passage of the proposed bill. We therefore urge all members of the medical profession to disapprove the measure and on its introduction into the Legislature, to work in all legitimate ways for its defeat. Specific objections to it will be presented later.

(Signed) Chairman of the Committee on Legislation.

Chairman of the Committee on Legislation.

JOSEPH D. BRYNNI.

Chairman of the Committee on Experimental Medicine. Secretary of the Committee on Experimental Medicine.

The Health of the Canal Zone.-During the month of September, 1908, there were reported 259 deaths in the Canal Zone, in a population of 124,734, corresponding to an annual death rate of 24.91 in a thousand population. Among the employees of the Canal Commission and the Panama Railroad there were 48 deaths, in a total force of 45,058, corresponding to an annual death rate of 12.78 in a thousand. ing to an annual death fate of 12.76 in a thousand. There were 3 deaths from typhoid fever, 32 from malarial fever, 13 from asstivoautumnal fever, 1 from hamoglobinuric fever, 2 from diphtheria, I from amobic dysentery, 10 from clinical dysentery, 2 from beriberi, 1 from purulent infection and septichæmia, I from rabies, 24 from tuberculosis of the lungs, 2 from other forms of tuberculosis, I from of the lungs, 2 from other forms of tuberculosis, 1 from syphilis, 2 from cancer, 1 from acute articular rheumatism, 1 from alcoholism, 3 from tetanus, 6 from bronchopneumonia, 16 from pneumonia, 17 from diarrhea and enteritis, under two years of age, 1 from uncinarisis, 2 from puerperal septichæmia, and 1 from gangrene. The morbidity report shows that there were an average of 600.90 white employees constantly sick in hospitals, sick camps, and in quarters, or a morbidity rate of 48.58 in a thousand; 529.82 colored employees were sick daily, or a morbidity rate of 16.21 in a thousand; and 1,130.81 employees of all colors sick daily, a morbidity rate of 25.00 in a thousand colors sick daily, a morbidity rate of 25.09 in a thousand

Society Meetings for the Coming Week:

Monday, December 14th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association

tion; Waterbury, Conn., Medical Association.

TUESDAY, December 15th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

Wednesday, December 16th.—New York Academy of Med-icine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York (annual); New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

FHURSDAY, December 17th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of

Buffalo, N.

FRIDAY, December 18th.—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School, and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society; Brooklyn Medical Society.

Bith of Current Miterature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

The Method of Administering Antimeningitis Serum, By Charles Hunter Dunn.

Carcinoma of the Vermiform Appendix, probably Primary, in a Child Nine Years and One Month of Age, By HILBERT F. DAY and LAWERNE J. RHE. Electrotherapeutics in the Treatment of Tuberculosis,

Electrotherapeutics in the Treatment of Tuberculosis,
By J. Frank Wallis.
On Certain Evil Tendencies in Medicine and Surgery,
(Te be continued), By Maurice H. Richardson.
Bursitis Subacromialis, or Periarthritis of the Shoulder
Joint. (Subdeltoid Bursitis), (Concluded),
By Ernest Amory Codman.

The Method of Administering Antimeningitis Serum.-Dunn reports fifty-seven cases of meningitis, in which the patients were treated with antimeningitis serum. He says: Perform lumbar puncture, prepared to give the serum as soon as meningitis is suspected. If the fluid is cloudy, give the first full dose of serum at once, without waiting for the bacterial examination, although further doses are only to be given in case the Diplococcus intracellularis is found in the cerebrospinal fluid. The serum is of no value in other forms of meningitis. At every dose give as much as possible. Always withdraw as much cerebrospinal fluid as possible. Give 30 c.c. in all cases in which the amount of fluid withdrawn is 30 c.c. or less, unless a distinctly abnormal sense of resistance is encountered after as much has been injected as has been withdrawn. In all cases in which the amount of fluid withdrawn is more than 30 c.c., give as much serum as the quantity withdrawn. In very severe or fulminating cases, in which the amount withdrawn is between 30 c.c. and 45 c.c., give 45 c.c. unless abnormal resistance is encountered. In very severe or fulminating cases repeat within twenty-four hours as soon as the patient begins to get worse again, or at twelve hour intervals. In average cases repeat daily, until four full doses have been given in all cases. If diplococci persist after four full doses have been given, continue the injections until they have disappeared. If subjective symptoms, any impairment of the mental condition, or fever persist after diplococci have disappeared, or after four full doses have been given without progressive improvement, wait four days if the condition of the patient is stationary. At the end of four days, or at any time if the patient's condition is getting worse, repeat the treatment with four daily full doses, and continue as if this were the original attack. When a relapse occurs, either by reappearance of diplococci in the cerebrospinal fluid or by a reappearance of symptoms, give four daily full doses and continue treatment as if this were the original attack. Treatment along these lines should be continued until the patient is symptom free, without diplococci in the fluid, or until the chronic stage is established. In the chronic stage, watch for possible reappearance of diplococci by doing occasional lumbar punctures. If diplococci reappear, resume treatment with the serum as outlined above. In chronic cases with excessive cerebrospinal fluid under mari ed pressure, try dail: hunbar puncture without the injection of serum.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 5, 1908.

Treatment of Louvetter Ataxia,
P. Allan McLane Hamilton.

Curative Effect of Rest in Children with Persistent Loss of Appetite, By IRVING M. SNOW. Hyperpyrexia in Children; Its Cause and Treatment, By PHILIP MARVEL.

Presumably Cured Gonorrhœa and Marriage,
By Ferd C. Valentike and Terry M. Townsend.
The Clinical Value of the Spirochæla Pallida in the
the Diagnosis and Treatment of Syphilis,

By Frederick G. Harris and B. C. Corbus.

Cerebellar Symptoms in Hydrocephalus; with a Pathological Report of a Case Associated with Syringomyelia,

By John H. W. Rhein.

Erythema Figuratum Perstans,

Erythema Figuratum Ferstans,
By Grover William Wendle.
Unilateral Voluntary Nystagmus; with Report of a
Case,
By Walter L. Pyle.

Fracture of Patella, with Skiagrams of Results of Treatment by Suture, By J. M. BATCHELOR.

General Paresis in Chilhood,

By Arthur Willard Fairbanks.
Mercurial Treatment for the Late Manifestations of Syphilis,
Nonsuppurative Involvement of the Labyrinth in the Course of Mumps,

By G. W. Boot.

Hæmorrhage of the Adrenals in Infants; with Report

of Two Cases Not Due to Infection,
By Jennings C. Litzenberg and S. Marx White.
A Disorder Due to Exposure to Intense Heat,
By David L. Edsall.

3. Hyperpyrexia in Children. - Marvel observes that pyrexia is a complex phenomenon occurring as a result of infection, injury, nervous shock, or disturbance, the causal relations of which are as yet far from being wholly understood. Hyperpyrexia is merely an aggravated pyrexia, and when present in certain diseases, such as bronchopneumonia, meningeal and pulmonary tuberculosis, pneumonitis, or severe injuries to the nervous system is of grave significance. The rational use of cold water, properly sustained by artificial and internally stimulating agents, even in the extremely high temperatures, may, not infrequently, be followed by success. Hyperpyrexia in children, though always signifying grave danger, is not so likely to be accompanied by fatal results, as in

5. Clinical Value of Spirochæta Pallida.-Harris and Corbus say that the following facts represent the principal reasons for considering the Spirochata pallida specific. It has been found innumerable times by observers in all parts of the world, and has only been found in syphilitic, never in nonsyphilitic lesions. It has been found in the lesions of every stage of syphilis, even in the gummatous or so called tertiary stage, and in every type of syphilitic lesion. Syphilitic material containing spirochætæ has been inoculated into monkeys and the spirochætæ demonstrated in the lesions so produced. Material from these lesions produced the disease in a second series of monkeys and so on for forty-two successive inoculations, all the lesions of which showed the spirochætæ. Human material containing the spirochætæ gives the reaction for antigen with the serum of syphilities. But the great difficulty is the staining methods. By the best method the organisms stain so faintly that it usually requires a prolonged search to find them. Again, it is very difficult to distinguish the stained specimen from

other spirochætælike organisms. Hoffmann, Schaudinn's collaborator in the discovery, has emphasized this difficulty, and he says that in a stained specimen the diagnosis should only be made by an expert, one who by close familiarity with the organism has acquired an intuitive knowledge of its morphology. It is a fact that the stained specimen lacks some of the characteristics of the living organism, chief of which are: In the stained specimen the organisms are much less numerous than when the same material is examined fresh. The method of preparing the specimen causes the organisms to lose to a certain extent the acute winding of the spirals, which is so characteristic of the living organisms. Probably one of the greatest disadvantages of the stained specimen is the absence of motility. The motions of the spirochætæ are very characteristic and are of inestimable assistance in distinguishing the pale from other spirochætæ. It is much more convenient and reliable to demonstrate the organism in the living state. And here the so called dark ground illuminator adjusted to the microscope are of great The Reichart instrument is the best, because it can be used on any kind of microscope; by means of the revolving diaphragm the amount of light may be varied at will; it is possible to change from the dark ground method to the ordinary method of transmitted light by merely revolving the diaphragm. The method of using the apparatus is as follows: The Abbé condenser is removed. A strong light is necessary; one may use sun or arc light, a Nernst lamp, or an inverted Welsbach. Except with the sun or arc light, a six inch condenser lens is necessary, or a large glass globe filled with water serves the same purpose. The illuminator is placed on the stage of the microscope, and by means of the low power the circle which is etched on the glass plate is brought into the centre of the field and the apparatus fixed in this position by means of the clips on the microscope. A drop of immersion oil, free from air bubbles, is placed on the centre and the prepared slide put in place, great care being taken to avoid the formation of air bubbles. When the preparation is examined with the low power, if the light is placed right and the apparatus centred, one observes a bright central point. The high power is now turned on and the field is seen to be dark, with luminous points and bodies. The authors conclude that the Spirochæta pallida is the true cause of syphilis and its presence is equivalent to the diagnosis of syphilis. Its absence does not rule out syphilis. The silver spirochætæ are true organisms. By means of this method the spirochæta may be demonstrated in all primary and secondary lesions of syphilis, if the search is persistent. After demonstrating the organism in a primary lesion it is not only unnecessary but harmful to wait for secondary manifestations. The most logical therapy is excision of the chancre when possible, and in all cases the immediate institution of the vigorous antisyphilitic treatment.

Fracture of the Patella.-Batchelor states that bony union rarely takes place before thirty days, and that it is possible where there is, after suture, a separation of the fragments equal to three eighths of an inch. Whenever general anæsthesia is directly contraindicated such patients may

be operated upon under local analgesia and bony union confidently expected. The essential requirements of the operation are, first, preliminary fixation of the joint for from forty-eight to seventy-two hours to allow complete arrest of hæmorrhage; second, suture of the lateral tear of the capsule, thereby restoring the reserve extensors and obviating the danger of atrophy of the quadriceps; third, absolute asepsis and immediate closure of the joint without drainage.

11. Mercurial Treatment for Late Syphilis .-Klotz remarks that tertiary or late manifestations of syphilis can usually be as successfully treated by mercury alone as by iodides alone or in combination with mercury. In many instances they are influenced by strong mercurial methods when iodides and mixed treatment have failed. It is therefore advisable, in clearly syphilitic manifestations, not to cease specific treatment, and in doubtful cases not to dismiss the diagnosis of syphilis until such strong mercurial treatment has been sufficiently applied as offered by the intramuscular injections of insoluble mercurial preparations, of which calomel is the most reliable one.

13. Hæmorrhage of the Adrenals in Infants. -Litzenberg and White observe that hæmorrhage of the suprarenal capsules is more common than hæmorrhage in the other viscera. This is due primarily to the close relation of the adrenals to the vena cava, making congestion easy, and to the peculiar anatomical construction which favors hæmorrhage. A weakness of the vessel walls, either normal delicacy or pathological alteration, favors the rupture. The place of election of the hæmorrhage is usually in the internal cortical zone because of its vascularity and the anastomotic arrangement of the vessel. The bleeding always follows active or passive congestion. Passive congestion may be caused by difficult labors, obstetric operations, thrombosis. or, in short, anything that would favor venous stasis. Active congestion is induced by infection or any toxæmia which incites hyperæmia by a superactivity of the gland. The findings of the pneumobacillus of Friedländer in the author's two cases and other bacteria in five additional cases proves beyond question that infection is a cause of adrenalin hæmorrhage. Death results either from loss of blood or an interference with the physiological function of the gland.

MEDICAL RECORD

December 5. 1408

Overcoming the Predisposition to Tuberculosis and the Danger from Infection during Childhood By S. Adolphus Knopp. True Neurasthenia—Its Nature and Treatment,

By A. D. ROCKWELL The Ultraviolet Ray and High Frequency Currents in Neurasthenia, By Sinclair Tousey.

The Care of the Mouth during Infancy and Child-lood.

Special Provisions for Management of Certain Forms of Mental Disorder,

By ALFRED GORDON.

1. Overcoming the Predisposition to Tuberculosis and the Danger from Infection during Childhood.—Knopf remarks that when a child. because of its delicate constitution, is susceptible to frequent colds, so that one may hesitate to take it much outdoors, it should be borne in mind that fresh.

pure air really does not give colds, and what are commonly known as colds are often an infectious disease due to a specific microorganism which fastens itself more readily on a delicate system. To overcome such so called susceptibility to colds, one should resort to the judicious use of cold water. From the tenth to the twelfth month one should accustom the child gradually to cold baths. The best time to begin is after its daily warm bath. Rub the child a few times with the hands dipped in cold water and then wipe it rapidly. By and by one may begin with cold sponging, and later with a little douche. In the use of cold water it is absolutely necessary that the reaction should follow rapidly. This reaction, as is well known, is manifested by a pleasant warmth perceived by the child, and is made visible externally by a reddish appearance of the skin. Whenever cold water is applied to the skin one will notice at first a certain whiteness or pallor, which is caused by the contraction of the external bloodvessels. The return of the blood to the external surface causes the reddening of the skin. Whenever reaction is lacking or tardy, the advice of the physician should be sought. It goes without saying that a child should always be properly dressed. In order that its lungs may develop to the fullest extent it must not be hindered by restricting garments, particularly not by tight neckwear (constricting collars and bands). Furthermore, it must be remembered that to dress the neck too warmly lessens the power to resist taking cold when there happens to be a change in the atmosphere. The less one is accustomed to bundle up the neck, the more freely will he breathe and the less will he be likely to take cold. When a girl develops into a young woman, one should bear in mind that the tightly laced corset is one of the most injurious garments which can be worn. Not only is free and natural breathing interfered with by this article of dress, but indigestion and disturbances in the circulation follow excessively tight lacing. Anæmia, or poverty of blood, so often observed in young girls, can very frequently be ascribed to this unnatural mode of dress, which does not permit either a free circulation or sufficient oxygenation of the blood.

2. True Neurasthenia.—Rockwell in speaking of the treatment of neurasthenia says that many a neurasthenic has been made worse by the rest cure, while others have suffered by a continuance of work. In no condition is there more need of an intelligent distinction. If there is cerebral excitement associated with physical exhaustion, rest is imperatively demanded. Rest is also to be recommended in cases of the myelasthenic type. For cases of the lithemic type—hearty eaters, who suffer from autoinfection, and whose frequent irritability and unreasonable outbursts of temper distinguish their case from the mild melancholy of the neurasthenic of an entirely different type, work and activity and plenty of it is oftentimes the saving grace. Success in treatment frequently follows very little active medication, and et at times judicious drugging is distinctly called for. While the patient is undergoing the slower process for encouragement and physical methods of treatment, it is good judgment at times and in certain case to cothe and a tain a weak and erratic nervous a ten la uch drugs as seem best fitted to the case in hand. In these case, where occasional

medication seems to be demanded, some one of the various bromides, including zinc bromide, either alone or in combination with belladonna, cannabis indica, etc., according to individual idiosyncrasies, serve a useful purpose. Of all physical methods of treatment, the electrical should be placed first, as it is of positive value in the treatment of neurasthenia. What is lacking, therefore, most frequently, to make good use of this great agent is the power of intelligent differentiation. An anomaly about a neurasthenic is that generally he appears to be well nourished. His functions are often well performed and his appetite excellent. Yet with all this we find him with a nervous system so erratic and unstable that the slightest influence is sufficient so to disturb the vasomotor equilibrium as to cause general nervous disturbance, as manifested in the quickly flushed face, perspiring hands, dizziness, and perverted vision. As its name implies, neurasthenia is a disease of exhaustion and therefore of impaired nutrition, and electrization, not in one form alone, but in many forms, aids powerfully in the restoration of perverted cellular nutrition. The influence of light and heat will often be found useful in neurasthenic cases. Fundamentally the principles on which are based the therapeutics of light and heat are very much the same as govern the application of other physical methods of treatment, and in the toxæmias and the toxic neuroses the therapeutic value of light energy is beyond question. Both the incandescent and the electric arc light are valuable—the latter perhaps more than the former, since, in addition to its calorific and luminous effects, it imparts chemical activities of a distinctive character. While neurasthenia is no imaginary disease, and no appeal to the imagination alone will overcome the profound loss of nerve tone characteristic of it, or rearrange the delicate fibrillary connection of the neurons that may have been disturbed by the constant impact of physical forces, yet mental therapeutics is without doubt an important factor in many cases.

LANCET

November 21, 1908.

The Pathology and Treatment of Diabetes Mellitus,
Viewed by the Light of Present Day Knowledge
(Lecture I),
By F. W. Pavy.

2. Heredity in Diseases of the Nervous System.

By Sir W. R. Gowers.

By E. F. Bashford.

The Influence of Heredity upon Tuberculosis,
 By A. LATHAM.
 Vicious Circles Associated with Disorders of the Digestive System,
 By J. B. HURRY.

tive System,
6. Multiple Vesical Calculi,
7. The Diagnosis and Treatment of Pancreating
By D. C. Watson.
By D. C. Watson.

2, 3, and 4. Heredity in Nervous Diseases, Cancer, and Tuberculosis.—Gowers states that the diseases of the nervous system in which the influence of heredity is marked seem to fall in certain classes. One of these consists of the early abiotrophies or cases in which certain systems of structure in the nervous or muscular system system have an essential defect of vital endurance, in consequence of which their life slowly fails. A marked example is presented by the hair follicles of the scalp, in consequence of which early and extensive baldness occurs in father and son. Examples seen in the nervous system are hereditary optic atrophy,

hereditary ataxy or Friedreich's disease, and the various myopathies. By "early" are meant those abiotrophies which begin before the development which coincides with growth is over, and often not many years after birth. A second class includes the hereditary maladies which begin later in life, after the period of growth is over. They present persistent disturbance of function, and are commonly hereditary, but from either side. In the heredoataxy of Marie the symptoms begin about thirty and are fatal in about twenty years. Huntington's chorea begins usually in the senile period of life, but its heredity is well marked, and so is that of Thomsen's disease (myotonia congenita). A third class consists of the so called functional affections, such as hysteria, neurasthenia, and certain cases of insanity and epilepsy. As regards epilepsy, the writer estimates that at least fifty per cent. of the cases manifest a family tendency.—Bashford, discussing heredity in cancer, states that his observations and experiments on mice fail to give even an indication that cancer is inherited. It appears to be very doubtful whether there is transmitted even the power of acquiring the cancerous modification under excitation; and it is not impossible that cancer may be really a late modification of healthy tissue acquired de novo for each individual and in which inherited predisposition plays no part whatsoever. -Latham shows that our knowledge of heredity in tuberculosis is far from complete. The evidence in favor of an inherited predisposition to the disease is not strong enough to make him advise against marriage in the case of persons who have suffered from pulmonary tuberculosis and who have acquired a partial immunity in the process of the arrest of the disease. His general conclusions are as follows: 1. The hereditary transmission of the tubercle bacillus is so infrequent that it is a negligible factor. 2. The incidence of tuberculosis depends in the main on two factors-(a) exposure to infection, which in turn is governed by the dose received and the virulence of the particular strain of bacillus; and (b) the undermining of the resistance of the individual by insanitary conditions and by disease. 3. The more adequate the preventive measures taken in any community the less are the incidence and mortality of the disease. 4. The more adequate the medical treatment—that is, the greater the proportion of persons in whom the disease has been arrested and who have thereby acquired a partial immunity—the less are the incidence and mortality of the disease. 5. As at death we all, or nearly all, show evidence of having at some time been infected with tuberculosis, and as most of us are able to overcome the infection, it is clear that the diminished opportunity for repeated infection, brought about by preventive measures and better medical treatment in this country, cannot wholly account for the diminishing incidence and mortality of the disease. 6. There is some evidence to suggest that the diminishing incidence and mortality of the disease may be in part due to a partial immunity inherited in the course of generations from tuberculous ancestors in whom the disease has been cured. 7. The theory that there is an inherited predisposition to tuberculosis is based upon insufficient evidence.

7. Pancreatitis.-Watson, in discussing the di-

agnosis and treatment of pancreatitis, excludes from consideration those acute cases which closely simulate acute intestinal obstruction, fulminant appendicitis, and the like, and which tend to a fatal issue in forty-eight hours or so if not relieved by operation. He is concerned only with the mildly acute, the subacute, and the chronic forms of inflammation of the gland. Cases can be conveniently divided into two groups: Those in which jaundice is a prominent symptom; and those in which jaundice is absent. A striking point is the protean character of the disease. An advanced case may closely simulate severe or pernicious anæmia. In the earlier stages the clinical features may be simply those of slight indigestion, sometimes associated with neuriticlike pains in the limbs or trunk. Again the chief symptom may be only physical weakness with little or no obvious morbid signs. Progressive cases tend to a fatal issue; many cases of supposed deep seated malignant disease have been in reality cases of pancreatitis. As regards diagnosis, attention is drawn to the following points: I. In cases of jaundice of doubtful origin assistance in the diagnosis is afforded by urinary analysis. (a) A negative pancreatic reaction points against the existence of pancreatitis. (b) In cases of cholelithiasis a positive reaction indicates pancreatitis and is very strong evidence that the stone is impacted at or near cases where cholelithiasis can be excluded and the clinical features point to the existence of organic disease of the pancreas a negative pancreatic reaction points to malignancy. 2. Glycosuria is of some value in the distinctive diagnosis of pancreatitis from malignant disease, this symptom being more common in inflammatory conditions of the gland. 3. The site and distribution of the pain have diagnostic significance. The pain of pancreatic disease is referred to the epigastrium and radiates to the left side; in disease of the gallbladder and the bile ducts the pain is referred to the right hypochondrium and radiates to the right. 4. An acute onset with pain and pyrexia points strongly to an inflammatory infection. 5. Emaciation, anæmia, and asthenia may be present in pancreatitis to an extent equal to that present in advanced malignant disease. The following points are emphasized in connection with pancreatitis unassociated with jaundice: I. In not a few cases of indigestion associated with flatulence, abdominal discomfort or pain having no distinct relation to food, constipation, and in some cases pale fœtid stools, the primary derangement is to be found in the pancreas. In such cases a prominent clinical feature is the occurrence of pain on deep pressure over the region of the head of the pancreas. 2. In some cases of neurasthenia a marked pancreatic reaction is present in the urine. In the early stages of the disease the inflammation subsides under simple remedial measures. The diet should be light, and a rigid milk diet may be advisable. The excretory functions of the skin should be stimulated by an occasional Turkish bath. In the later stages the meals should not exceed three in number and should be as far apart as possible; protein foods should form the staple of the dietary, sugars and starches being restricted. Intestinal irrigations are often of value. Surgical measures are

called for in cases not responding to medical treatment. The operations recommended are: I. Laparotomy and free manipulation of the gland, for the purpose of loosening and breaking down adhesions and lessening tension. Minute calculi may be thus dislodged. 2. Cholecystotomy, simple drainage of the gallbladder. 3. Cholecystenterostomy, permanent drainage of the gallbladder into the intestines. There should be no delay in operating in cases of chronic jaundice due to the presence of stone in the common bile duct. But great caution is necessary in recommending operative treatment in cases unassociated with jaundice, in which the leading features are gastric symptoms, some general constitutional disturbance, a marked pancreatic reaction in the urine with perhaps occasional glycosuria. Medical measures will in many instances suffice to restore the patients and free them from the subsequent serious risks of diabetes.

LA PRESSE MEDICALE October 17, 1008.

By PAUL AUBOURG. Rapid Radiography, By PAUL The Cutireaction and the Nervous Reactions, By R. ROMME.

1. Rapid Radiography. - Aubourg describes the technique of his method of radiography for the purpose of reducing the time of exposure from minutes to seconds, a reduction desirable not only on account of the necessary immobility of the patient, but also because of the smaller dose of the radiations absorbed. His article is illustrated by two plates, one reproduced from a radiograph of a case of scoliosis in which the time of exposure was thirty-five seconds, the other from a radiograph of the upper teeth in which the exposure was four seconds.

October 21, 1908.

- The Urinary Sulpho Ethers in Intoxication of Gastrointestinal Örigin,
- By RAOUL BRUNON and MAURICE GUERBET.
 The Tuberculosis Congress at Washington,
 By Leon Bernard.
- 1. The Urinary Sulpho Ethers in Intoxication of Gastrointestinal Origin.-Brunon and Guerbet in a controversial paper present tabulated observations and argue in favor of their belief that the coefficient of the intestinal fermentation is able to give the physician useful indications concerning the pathogeny, diagnosis, prognosis, and treatment of

October 24, 1908

- The Typhobacillosis,

 The Treatment of Facial Neuralgia before the Congress of Surgery in 1908,

 By L. Landouzy.

 By J. A. Sicard.
- gress of Surgery in 1908, By J. A. Sicard.
 The Axillary Temperature in the Tuberculous, By R. ROMME.
- 1. Typhobacillosis. Landouzy applies this name to one of the forms of acute tuberculosis. One form of this disease presents the picture of a caseous bronchopneumonia, tuberculosis developing for weeks or months, with the same anatomical lesions of infiltration and softening, ulceration, and breaking down of the caseation met with in late stages of ordinary phthisis. This is galloping phthisis. Sometimes the form is that of a caseous pneumonia that causes death before the appearance of ulcera-

tions and cavities. In the second type the evolu-tion is more rapid. The third type is characterized by the typhoid state with continuous fever and splenomegaly without signs of visceral lesions. This last form is that which he denominates typhobacillosis.

2. Treatment of Facial Neuralgia.-Sicard discusses the paper read by M. Morestin before the Congress of Surgery, which he considers a very re markable one, and finally says that one general therapeutic direction is given, that local alcoholization is the primary treatment to be administered to a true facial neuralgia. In case of failure from the difficulty of guiding the needle with certainty to the round and oval foramina, or in case of very frequent recurrence it is useless to try resection of the peripheral nerves, sympathectomy should be performed, directed to the destruction of the root to the base of the brain, between the bulb and the ganglion. It is evident that this last operation cannot be performed without great risk, especially in people who are old, cachectic, or have little power of resistance.

LA SEMAINE MEDICALE.

October 28, 1908.

Stereoagnosis and Tactile Asymbolia,

By Felix Rose and Max Egger.

Stereoagnosis and Tactile Asymbolia.-Rose and Egger after a collation of the literature on this subject report a case met with in a man, twentythree years old. Finally they sum up their conclusions in this manner: I, The name stereoagnosis should be proscribed in cases of gross senitive trou-2, There does not exist any case of pure bles. primary tactile agnosis outside of the evolutive absence of recognition of form in infantile hemiplegia. 3, There do exist pure cases of tactile asymbolia. 4, If it is possible that a deficit in the information by subcortical hypoæsthesia can produce the syndrome of agnosis and tactile asymbolia the presence of this syndrome with slight sensitive troubles is in general in favor of a cortical lesion.

BERLINER KLINISCHE WOCHENSCHRIFT. October 19, 1908.

- I. Fatal Inflammation of the Lungs Produced by the Inhalation of Vapor of Ammonia, By L. Lewin.

 2. Studies Concerning the Relations between Human Tuberculosis and Tubercle Bacilli and the Tuberculosis and Tubercle Bacilli of Cattle,

 By JOHANNES FIRICER and C. O. JENSEN.

 3. Elementary and Colloidal Sulphur (Sulfidal),

 By J. NEVINNY.

 4. Some Observations in Epidemics of Scarlet Fever,

 By RINENES

- By RUBENS. Wassermann's Reaction in Scarlet Fever,
- 6. A Case of Complete Lateral Displacement of the Viscera, Situs Viscerum Inversus Totalis,

 By P. P. SMIRNOFF
- By Georg Levinsonn.
 Pernicious Anæmia
 By K. Reicher. The Cause of Glaucoma,
 Ætiology and Therapeutics in (Concluded),
- Inflammation of the Lungs Produced by the Inhalation of Ammonia.-Lewin states that the inflammation of the lungs induced by certain irritant gaseous or vapor like poisons has great practical and scientific interest. It can be produced by the most heterogeneous inorganic and organic mate-

rials which are used extensively in industrial life. by acids or bases, by aromatic substances, so long as they are volatile, inhalable, and irritant to the mucous membrane on contact. Hence a specific irritant action is unnecessary in order to induce this disease, although the rapidity and the energy, or the local depth of the action, as well as the finer changes in the affected organs, cause differences to appear, according to the inducing group of poisons. inflammation arises without any bacteriological help, and therefore can be produced experimentally in a very short time. He thinks that to the influences that produce it should be added in many cases the chronic inflammations of the respiratory apparatus, with or without suppuration.

5. Wassermann's Reaction in Scarlet Fever .-Rubens asserts that under certain conditions, whether due to the character of the epidemic or to special peculiarities of the antigen, Wassermann's reaction will take place in scarlet fever the same as in syphilis, while normal serum checks hæmolysis either not

at all or in a small percentage.

6. Complete Lateral Displacement of the Viscera.-Smirnoff describes a case of this nature met with in a man forty years of age.

7. The Cause of Glaucoma.—Levinsohn's explanation of the cause of glaucoma is the one usually accepted, the occlusion of the excretory passages from the anterior chamber.

8. Pernicious Anæmia.—Reicher reports four cases of pernicious anæmia which seem to have been improved by treatment with cholesterin.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT

October 20, 1008.

I Concerning the Icterus Gravis of the Newly Born By PFANNENSTIEL. Tuberculin Immunity, By HAMBURGER. Marmorek Serum in the Treatment of Surgical Tuber-By STRAUSS.

Development and Treatment of Intestinal Hernia,

- 5. Contribution to the Serum Treatment of Epidemic Cerebrospinal Meningitis, 6. Casuistics of Tumors of the Skull,
- By KLOSTERMANN. Bacteriological Technique, By Scottelius. 7. Bacteriological Technique, 8. Rapid X ray Exposures in Surgical Work,
- 8. Rapid X ray Exposures ...
 9. Clinical Casuistics from Practice (Concluded),
 By Err.
 Achelia,
 By Boas,
- 10. Carcinoma Ventriculi ex Achylia, 11. Carcinoma Ventriculi ex Achylia, By EHRLICH. 12. To O. Schmiedebergs on his Seventieth Birthday By MEYER
- Tuberculin Immunity. Hamburger says that in many cases the artificially produced tuberculin immunity depends on a forced inability to react through saturation with antibodies, but it is doubtful whether all cases of such immunity can be explained in this way.
- 3. Marmorek's Serum in the Treatment of Surgical Tuberculosis.-Strauss concludes from his experiences in thirty-seven cases that Marmorek's serum introduced by the rectum is harmless, that in a certain number of cases it seems to exert a beneficial influence which is comparable with the influences of other hygienic and dietetic regulations. Consequently the serum is worth a trial as an additional help in the struggle against surgical tuber-

culosis and should be used in addition to other therapeutic means so far as its price will permit. In cases of extensive infection, tuberculosis of the lungs and other organs, the action of the serum is very uncertain, yet a trial of it seems to be justifiable in these cases also.

6. Casuistics of Tumors of the Skull .-- Klostermann describes an enormous fibrosarcoma removed from the right side of the head and face of

a woman, sixty years of age.

8. Rapid X Ray Exposures.—Gilmer illus trates his article with reproductions of fifteen radiographs taken by exposures varying from one half to five seconds. They are full of detail, in this way far superior to many x ray pictures produced by the usual method of longer exposure. The subjects shown, with the length of exposure, are fracture of the basal phalanx of the great toe, one half second; normal elbow joint, two seconds; fissure of the tibia, two seconds; resected knee after healing, three seconds; tuberculous coxitis, five seconds; tuberculous disease of the second lumbar vertebra, four seconds; impacted fracture of the neck of the femur. five seconds; probe in the sphenoidal sinus, three and one half seconds; normal base of the skull, four seconds; fracture of the radius with breaking off of the styloid process of the ulna, one half second; normal lumbar segment of the spine and promontory, four seconds; normal knee joint, three seconds; empyema of the frontal sinus and ethmoid. five seconds; fissure in the greater tuberosity of the humerus, two seconds.

9. Clinical Casuistics from Practice.-Erb continues his discussion of syringomyelia and dystrophia with the report of three cases, one of dystrophia muscularis progressiva with unusual localization, one of dystrophia muscularis progressiva with unusual localization in the muscles of the neck, and one of dystrophia muscularis progressiva where

the patient recovered.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES. November, 1908.

Gallstone Disease,
Ascites in Typhoid Fever,
By J. B. Deaver.
By A. McPhedran.
Lobar Pneumonia. A Study of 445 Cases, with Special Reference to the Decreased Mortality Since the cial Reference to the Decreased Arthur, Institution of the Fresh Air Treatment, By G. W. Nokals

The Pharmacology of Heart Stimulants,
By H. C. Wood, Jr.
Ataxia of the Heart Muscles,
By E. Schmoll. The Interpretation of the Venous Pulse.

By G BACHMANN

Fatigue in School Children as Tested by the Engagraph.

The Diagnostic Value of Cutaneous Hyperalgesia (Head's Zones) in Abdominal Disease,

By C. A. Elsberg and H. Neuhof.

Tumor of the Gasserean Ganglion. A Report of Two Cases with Necropsy. By W. G. SPILLER.

Cases with Necropsy, By W. G. Spiller.

10. The Etiological Importance of Abnormal Foot Posture in Affections of the Knee, By D. Silver.

11. The Ricin Method of Jacoby-Solms for the Quantitative Estimation of Pepsin, Be E. H. Gossman.

1. Gallstone Disease.—Deaver thinks the medical treatment of gallstone disease is most unsatisfactory. Dissolving gallstones or absorbing adhesions by medical means is an almost impossible task. Treatment at Carlsbad hastens convalescence from

gallstone operations, and for those who refuse to be operated upon it will often bring peace of mind. Cases suitable for prophylactic treatment, in the author's experience, are those which have been seen early in the disease. Undeveloped gallstones or other morbid substances, in such cases, can sometimes be drained away. After gallstones have formed, the risk of operation is the risk of delay. The principles which should govern operations on the biliary passages are getting into the abdomen as quickly as possible, remaining there as short a time as possible, getting out as soon as possible, and doing only that which seems necessary to restore the patient to health. The operative field must be carefully walled off by gauze, and adhesions avoided if not interfering with the operation. All stones found in the biliary tract must be removed, drainage usually is efficacious, and postoperative treatment must be watchful and intelligent. Cholecystectomy is avoided when possible.

2. Ascites in Typhoid Fever. - McPhedran thinks that peritoneal effusion in typhoid fever, apart from peritonitis, is of rare occurrence. He has observed six cases in the past three years, in all of which the effusion occurred during the course of the illness, persisted from ten days to two weeks, and disappeared, in all but one of the cases, with convalescence. In only one of the cases was there hæmorrhage or symptoms of peritonitis. of the cases the effusion was due to pathological conditions resulting from typhoid infection, though the immediate cause was uncertain. The relaxed condition of the abdominal walls favored stasis and serous transudation. The enlarged mesenteric glands may also have caused sufficient irritation of the peritonæum to produce effusion. The element of toxemia must also be taken into account, a toxic substance possibly so affecting the hepatic cells as to obstruct the portal circulation, or so changing the peritoneal epithelium as to permit a more rapid escape of serous exudate, causing such obstruction to the peritoneal lymphatic vessels that the exudate may not be readily removed.

4. The Pharmacology of Heart Stimulants.—Wood limits his paper to the digitalis group. He notes three essential factors in the action of these drugs which interest clinicians: (1) The stimulant influence upon the cardioinhibitory mechanism, which prolongs the diastole and slows the pulse; (2) the increased tonicity of the heart muscle leading to more complete systole; (3) the constriction of the bloodvessels. The slowing action of digitalis is more beneficial in heart disease than is generally supposed. Especially in chronic heart disease is the inhibitory stimulation of digitalis beneficial in its effect, and in no portion of the heart is this beneficial action felt to the same degree as in the left ventricle. It has also a valuable vasoconstricting influence which has sometimes been regarded as a harmful by effect. Besides digitalis the author considers the utility of strophanthus, squills, apocynum, and adonidin. Squills and apocynum are seldom used, owing to their irritant action. The action of strophanthus upon the vessels is less powerful than is that of digitalis, but it is less likely to give rise to cumulative toxic symptoms. The effect of adonidin is similar to that of digitalis upon the heart muscle and upon cardiac inhibition, but less powerful. When merely the cardiac action of the digitalis group is desired in chronic heart weakness, none of the members of this group will compare with digitalis itself,

6. The Interpretation of the Venous Pulse .-Bachmann states that the physiological or so called negative systolic venous pulse consists of three positive and three negative waves, bearing a more or less definite relation to the events of the cardiac cycle, and having their origin in the various movements of the chambers and structures of the right heart. The first positive is presystolic, the contraction of the auricle slowing the venous current and producing a centrifugal wave. The second positive is protosystolic and caused by the sudden projection of the tricuspid valve into the cavity of the auricle. The third positive at the end of ventricular systole is due to relaxation of the papillary muscles causing an upward movement of the tricuspid leaflet and the return of the auriculoventricular sæptum to the position of rest. The first negative is due to the relaxing auricle, the second occurs during the diastole of the auricle, and is due to the dilatation of its walls, the displacement of the auriculoventricular sæptum toward the apex and the pull of the papillary muscles on the tricuspid valve leaflets. The third negative appears during ventricular diastole and in the common pause of the heart chambers. It is caused by the passage of the blood from the auricle into the ventricle.

8. The Diagnostic Value of Cutaneous Hyperalgesia in Abdominal Disease. - Elsberg and Neuhof summarize their paper as follows: I. They agree with Head, in general, that there are present in many diseases of the abdominal viscera constant and definite areas or zones of cutaneous hyperalgesia. 2. These zones may vary in extent and outline, but have a characteristic location. 3. The presence of a characteristic zone is an evidence of a disease of the corresponding abdominal viscus, though not necessarily the disease which causes the symptoms. 4. These zones occur in most of the patients with acute affections of the appendix, the gallbladder, the uterine annexa, and are of value in the diagnosis of these acute affections. 5. They are frequently present in acute disease of other abdominal viscera and may aid in making the diagnosis. 6. Cutaneous hyperalgesia may occur early in acute abdominal disease. Its presence does not indicate the gravity of the lesion. Its sudden disappearance may have great significance. 7. In the absence of other localizing signs the zone may indicate the organ that is affected. It is usually to be regarded only as a diagnostic aid.

ANNALS OF SURGERY November, 1908.

- The Use of Ethyl Chloride as a General Anæsthetic in the Pennsylvania Hospital, By W. E. Lee, Ludwig's Angina. Report of Five Cases including One Autopsy. By J. W. Prock, Jr.
- One Autopsy.

 Tumors of the Breast in Childhood,

 By J. W. Price, Jr.

 Tumors of the Breast in Childhood,

 By J. H. Jopson, J. Sperse, and C. Y. White.

 Biliary Calculus Weighing Two and a Half Ounces
- removed from the Common Duct,
 By W. BARTLETT.
- Acute Dilatation of the Stomach Complicating Typhoid
 By C. Wilson

Acute Hematogenous Infection of One Kidney in Persons Apparently Well. A Report of

Contribution to Renal and Ureteral Surgery,
By D. N. EISENDRATH and M. HERZOG.
Arthroplasty for Complete Ankylosis of the Elbow, Result One Year and a Half after Operation, By C. L. SCUDDER.

Some Surgical Conditions in the Knee Joint, By B. TENNEY.

The Operative Treatment of Fracture of the Neck of the Femur in Adults,

The Conservative Treatment of Fractures of the Femur, By A. P. C. ASHURST and W. A. NEWELL.

Nontuberculous Osteomyelitis of the Ost Calcis.

By J. G. SHELDON. Method. The Use 13. Silverized Catgut. The Argyrol Method. The Use of Argyol in its Preparation, By T. R. MACCLURE.
 14. Surgical Progress. Excerpts from Transactions of

the German Congress of Surgery, 1908, Translated by J. T. Pilcher and W. Joerg.

The Use of Ethyl Chloride as a General Anæsthetic in the Pennsylvania Hospital.-Lee finds records of the use of this substance in the hospital referred to in 5,575 cases from December, 1902, to June, 1908, the duration of anæsthesia varving between a few seconds and fifty-four minutes, and the average dosage for three minutes being ten grains. The administration is usually by the drop method upon a few layers of gauze held as near the face as may be necessary. After the occurrence of deep anæsthesia, should the eyeballs become fixed, the pupil dilated and immobile, the corneal reflex disappear, and the face be flushed and covered with perspiration, the danger line has been reached. Should death result it would be due primarily to respiratory and secondarily to cardiac failure. Should ether be substituted for ethyl chloride, in a given case, the change should be made gradually that the anæsthesia may not be interrupted. Thus far twentyfive fatal cases have been reported from the use of ethyl chloride, its mortality being slightly greater than that of ether. The caution is sounded that a substance which will cause deep anæsthesia in fifteen to twenty seconds, and whose danger signs are so easily passed, cannot be used with impunity. Its many advantages will cause its continued use, though with more and more watchfulness.

3. Tumors of the Breast in Childhood.-Jopson, Speese, and White offer the following conclusions: Tumors of the breast, though rare in childhood, occur in both sexes and at all ages. Benign tumors in the young are more common in the mammary gland than the malignant, the most common varieties being fibroepithelial growths and angiomata. Sarcomata are rare and carcinomata almost unknown before puberty. Girls are less often affected than boys, but the difference is not so great as in adults. Angiomata are usually congenital or appear in infancy, fibroadeomata develop as puberty is approached. The smaller benign tumors may cause no inconvenience, or they may give rise to pain, tenderness, and inconvenience on account of their size. Sarcomata show the symptoms usual with that form of tumor. Operation is usually indicated in the benign and always in the malignant varieties. Conservative plastic operations may be performed for small benign tumors, but in many of the cases the breast must be sacrificed. Enlarged glands in the axilla must be removed. The results of operations

have been good.

9. Some Surgical Conditions in the Knee Joint .- Tenney concludes his paper with the following propositions: 1. Asepsis and drainage are more essential in knee joint work than in abdominal surgery because of the difference of the skin in the operative fields, and in the natural drainage of the two cavities. 2. Sepsis and immobility mean ankylosis. Drainage and mobility may leave some motion. 3. There is increasing tendency to operative repair of patella fractures and increasing use of absorbable material. 4. The most common mechanical cause of trouble with the joint is the tab from the infrapatella pad. This may be an element in a general obesity which may demand appropriate antifat treatment. If it is present in a vigorous person it should be removed. Temporary relief may be obtained from properly applied adhesive straps, but a cure will come only from removal. 5. Prepatella bursitis may be cured by incision and drainage. Other bursæ should be dissected out. 6. Ligamentous injuries must be carefully treated and some must have operative repair to prevent recurring disability. No apparatus is so good as a normal knee.

Proceedings of Societies.

SIXTH INTERNATIONAL CONGRESS ON TUBER-

Held in Washington, D. C., September 28, 29, and 30, and October 1, 2, and 3, 1908. (Continued from page 1104.)

SECTION III.—SURGERY AND ORTHOPÆDICS. (Continued from page 912.)

Tuberculous Arthritis of the Hip Joint .- Dr. STEPHEN H. WEEKS, of Portland, Me., said that the great principle of local treatment in tuberculous arthritis of the hip was to rest the affected joint. This end might be secured by extension, by fixation, or by a combination of both. The constitutional treatment consisted first of all in strengthening the defensive mechanism of the body to combat the infection. The well known methods to increase the resistance of the patient were sunlight, fresh air, and proper nutrition. All that could be said about the treatment by bacterial vaccines was that it might prove a valuable adjunct to other

The Treatment of Tuberculous Hip Disease by Weight Bearing and Fixation by the Lorenz Short Hip Spica .- Dr. H. Augustus Wilson, of Philadelphia, said that weight bearing was conducive to the benefits afforded by outdoor life in the treatment of tuberculous arthritis of the hip, because the activity allowed by the method prevented circulatory stasis. On the other hand, confinement and inactivity favored atrophy from disuse. Weight bearing without fixation, under the most favorable circumstances, might result in recovery, but with ankylosis in deformed postures. Weight bearing with the Lorenz short hip spica facilitated the employment of outdoor life and shortened the time of the treatment. In some cases treatment by this method was followed by the rapid recovery from abscesses, and by slow and permanent recovery in other cases. The most favorable posture was that of 20° of abduction, 20° of flexion, and 5° of external rotation. The method was not applicable to debilitated patients without the temporary assistance of crutches.

Vaccine Therapy in Joint Tuberculosis .- Dr. EDWARD H. OCHSNER, of Chicago, said that the treatment of a tuberculous joint with a bacterial vaccine should never be undertaken without the control of a careful reading of the opsonic index. It should always be associated with other recognized methods of treatment, such as fresh air, immobilization of the joint, and measures to prevent the occurrence of secondary infection. If it was employed in that manner, a considerable percentage of perfect anatomical and functional cures could be obtained, because the vaccine treatment secured healing with a minimum amount of connective tissue formation.

Tuberculosis of the Bladder .- Dr. WILHELM KARO, of Berlin, said that tuberculosis of the bladder was almost always a descending process of hæmatogenous origin, usually dependent upon renal or genital tuberculosis. He found that the mode of infection influenced the position of the tuberculous lesions in the bladder. For instance, if the primary lesion was situated in the left kidney, the bladder lesion would be near the left ureter. chief symptoms of tuberculosis of the bladder were difficult micturition, hæmaturia, and pyuria. diagnosis was made by finding the tubercle bacilli in the urine, directly or by inoculation into ani-It was important to discover the primary seat of the lesion in every case of genital tuberculosis, employing either the cystoscope or catheterism of the ureters. The picture presented on cystoscopic examination was not absolutely characteristic, since nontuberculous disease sometimes preduced nodules. The surest prophylactic measure to prevent tuberculosis of the bladder was early extirpation of the diseased kidney, before involvement of the bladder had taken place; hence the prognosis of bladder disease depended upon the operability of the case. In the great majority of cases spontaneous recovery of the bladder followed the removal of the primarily diseased kidney. case the bladder symptoms failed to clear up, it indicated the involvement of the other kidney. systematic tuberculin cure was the most suitable treatment for such a case, with supplemental local treatment with weak mercuric chloride solution. Direct surgical treatment of a tuberculous bladder was to be deprecated.

The Surgical Bearings of Tuberculin.-Dr. R. W. Phillip, of Edinburgh, said that tuberculin was a valuable agent in conservative surgery. It might replace an operation in an obscure case, when the topical diagnosis was not exact or when the operative procedure was doubtful. Tuberculin was also of value in inoperable cases, such as, for example, cases of extensive genitourinary tuberculosis.

Surgical Tuberculosis.—Dr. E. H. BRADFORD, of Boston, said that the treatment of tuberculosis was dependent for its ultimate results upon the establishment of an immunity which would protect the patient from further tuberculous invasion. This was the desired goal, whether or not the tissues attacked were accessible to surgical interference. When the tissues in which the tubercle bacilli were growing were placed under suitable conditions, healing took place and a cicatrix resulted. The detritus of the diseased tissues either was thrown off or became encapsulated. In tissues in which it was possible to do a radical operation for their removal, the surgeon decided whether the healing process would be hastened by such removal of the infected area or the detritus of the infected area. The decision was made by taking into consideration the tissues affected and the anatomical relations of the affected parts. These considerations were particularly important in tuberculosis of the bones and of the joints, because bone was a tissue that cicatrized slowly, and because the joints were especially exposed to injury, which was unfavorable to the healing of the tissues infected by the Bacillus tuberculosis. The treatment of surgical tuberculosis, then, consisted in protecting joints, operative interference, and the employment of such measures as would be useful in combating tuberculosis in general.

The Surgical Treatment of Tuberculous Sinuses and their Prevention .- Dr. EMIL G. BECK, of Chicago, said that the successful treatment of tuberculous sinuses depended upon a careful anatomical diagnosis. The boundaries and all the ramifications of such a sinus could be shown by radiographs obtained by injecting the fistula with a thirty-three per cent. bismuth-petrolatum paste, which was liquefied by heating and which quickly solidified after the injection. The injection of this paste was of great value in the treatment of these sinuses, and also in the treatment of abscesses and empyema. Cases which had resisted the most skilful treatment for years had ceased suppurating and had healed within a few weeks after the commencement of the injection with the paste. If there was a sequestrum at the bottom of a sinus in a leg or an arm, it would be necessary to remove it before employing the paste. Bismuth subnitrate was an ideal drug for the treatment of such lesions, because it was bactericidal, slowly absorbed, and practically nontoxic. For the prevention of the development of fistulous tracts the speaker advised the opening of cold abscesses as soon as they pointed, evacuating the pus and at once filling the abscess cavity with a ten per cent. bismuth-petrolatum paste, and not sealing the opening. treatment prevented secondary infection, which formerly was given as a reason for not opening tuberculous abscesses.

Fresh Air Combined with Hyperæmic Treatment in the Management of Complicated Surgical Bone Tuberculosis in Adults.-Dr. WILLY MEYER, of New York, said that the beneficial influence of fresh air in surgical bone tuberculosis in children was generally recognized. In adults, on the other hand, the beneficial influence of fresh air was not so thoroughly recognized, although the open air treatment was of nearly as much importance in adults as it was in children. Of course, when the saving of time was a factor, a radical operation was the method of treatment to adopt. The speaker recommended that wards be set aside in sanatoria for the treatment of tuberculosis for the accommodation of adults, suffering from tuberculosis of bones, who for any rea-

son could not be subjected to operation.

The Importance of and the Method Used by the State of Minnesota for its Indigent Children Suffering from Tuberculosis of the Bones and the Joints.—Dr. ARTHUR J. GILLETTE, of St. Paul, said that the legislature of the State of Minnesota appropriated money for the care of indigent and deformed crippled children in 1897. Three quarters of these patients were suffering from bone or joint tuberculosis, and many of them had pulmonary or intestinal tuberculosis. Others had abscesses and running sores which contained the Bacillus tuberculosis and other infecting organisms. Many of the children attended the public schools, and no provision was made to protect the noninfected children. The patients had to be educated as well as treated for their bone and joint tuberculosis. The State of Minnesota undertook to treat these patients and to educate them at the same time, providing the means for the instruction of its wards in a line of work which should be useful to them in later years.

Section IV.—Tuberculosis in Children.

Dr. Abraham Jacobi, of New York, in the chair.

Tuberculosis in Infants: An Analysis of 130 Hospital Cases as Regards Ætiology and Diagnosis, with Remarks upon Prevention and Treatment.—Dr. LINNEUS EDFORD LAFETRA, of New York, reported the results of the study of 130 cases of tuberculosis in children, all under three years of age, the majority of them being less than one vear old. In nearly one half of the cases of pulmonary tuberculosis the mother, the father, or some one else who came in close contact with the patient suffered from tuberculosis, almost invariably pulmonary. The same was true of the patients suffering from tuberculous meningitis. In the meningeal cases, more than one half of the patients had pulmonary tuberculosis in addition to the meningeal lesion. In the majority of the cases of pulmonary tuberculosis in very young children it was impossible to make a diagnosis from the examination of the chest. In some cases there were no physical signs, in others râles could be detected, while others showed the signs of bronchopneumonia or of lobar pneumonia. Very few of the patients presented the signs of consolidation or of cavity formation. For an absolute diagnosis tubercle bacilli must be found in the sputum or the lesions must be seen. In young subjects a positive skin reaction to tuberculin was considered almost certain. If a careful sputum examination and the skin test were both negative one could feel safe in ruling out tuberculosis. Of the seventy-three pulmonary patients, thirty-four died, twenty-nine were unimproved, and ten were improved. Four of the patients seemed to have recovered completely, with no signs in the lungs from one to two years after leaving the hospital. From the viewpoint of prophylaxis the father and the mother in a tuberculous family should be warned before the birth of a child that tuberculosis is communicable to the child by close contact, especially by nursing a tuberculous mother, and by kissing. The infant should be isolated as completely as possible from the afflicted person; it should be prevented from crawling on the floor, unless there was some method of washing the rugs used in the house. The

usual hygienic measures should be enforced. Milk from untested cattle should be sterilized. All the children in a tuberculous family should be examined at intervals for the presence of physical signs of tuberculosis and for the tuberculin skin reaction. Suspicious cases should be put under active treatment at once, in a country home, a forest school, or a sanatorium. Persistent coughs in infants should be actively treated so as to prevent the development of tuberculous meningitis.

The Relation of the Infectious Diseases-Measles, Whooping Cough, and Influenza-to Tuberculosis in Children .- Dr. EDGAR P. COPELAND, of Washington, said that measles, whooping cough, and influenza were looked upon by the public as not being very serious, but the diseases were widespread, and, although tuberculosis followed them as a complication and a sequel, it was difficult to determine the number of cases in which tuberculosis developed after an attack of one of the other infec-Autopsy statistics showed that tuberculous lesions were present in 31.2 per cent. of all cases of death from measles. The catarrhal inflammation of the mucous membranes, associated with hyperæmia and lymphatic activity, were common to all of the diseases, and this was the key to the relation between them. Lymphatic activity was the determining factor in the dissemination of tuberculosis through the body. Following influenza and whooping cough there was usually a general miliary tuberculosis in which the pulmonary symptoms predominated. Influenza was seldom followed by tuberculosis except when the latter disease was already latent in the body. Taking into consideration the prevalence of measles, whooping cough, and influenza, tuberculosis did not follow them sufficiently often to be of very great importance. Its develop-ment in nearly all cases was the result of a latent focus of the disease. Its dissemination was due to lymphatic activity.

Miliary Tuberculosis in a Child Aged Four and One Half Months.-Dr. A. L. Kotz and Dr. E. M. GREEN, of Easton, Pa., reported the case of a female child who was born in December, 1907. At the age of two weeks she was fed on cow's milk. At the age of four weeks she was given modified certified The child gained steadily until she was twelve weeks old, when she gradually lost flesh. Her temperature averaged 99.4° F.; her abdomen was much distended; and she died when she was four months and a half old. At the autopsy it was found that there were two small tuberculous nodules in the lungs, and that one or two of the mediastinal lymph nodes were involved. The peritoneal cavity was completely obliterated, the intestines being firmly glued together. The tuberculous lesions consisted of masses of tubercles fused into flat, yellowish masses of the size of a pea. These masses were very numerous in the pancreas. In the intestines the tubercles were found in the serous and subserous coats in great numbers. The muscular coat and the mucosa were atrophied and were infiltrated with small round cells. Tubercle bacilli were present in these lesions. They were shorter, thicker, and less beaded than the ordinary bacilli found in human tissue. Investigation showed that the farm from which the first supply of milk for this child had been obtained had had one or two infected Jersey

cows. The certified milk had come from an inspected herd in which no infected cows were discovered. The child had been infected during the third and fourth weeks of life so violently that death occurred

about three months later.

The Relative Frequency of Abdominal Tuberculosis in Great Britain and the United States .-Dr. DAVID BOVAIRD, JR., of New York, said that he had discovered, during an investigation conducted in 1901, that there was a remarkable discrepancy between the figures for primary intestinal tuberculosis in Great Britain and in the United States. This difference was real, and was not due to a difference in the interpretation of findings, as was evidenced by the clinical data concerning abdominal tuberculosis in children in these countries. The term abdominal tuberculosis was intended to include tuberculosis of the intestines, the mesenteric lymph nodes and the peritonaum. Data obtained from hospitals in Edinburgh, Glasgow, and London, compared with those from the hospitals of New York and Boston, showed that all forms of tuberculosis were much less frequent in the United States than in Great Britain. On the other hand, abdominal tuberculosis was disproportionately frequent in Great Britain. This contrast was sufficiently great to indicate that some special condition must be present to determine the unusual frequency of abdominal tuberculosis in Great Britain; but an investigation into the incidence of bovine tuberculosis in Great Britain did not substantiate the suspicion that bovine tuberculosis was the cause of it. The writer assumed that abdominal tuberculosis represented the frequency of alimentary tuberculous infection. In the United States abdominal tuberculosis was most frequent in the later years of life, not in the first two years, when cow's milk was most used as food.

Tuberculosis of the Pericardium in Children.-Dr. Joseph S. Wall, of Washington, said that tuberculous pericarditis was a distinct morbid entity and that it produced a definite train of clinical symptons. On the other hand, cases in which the disease was latent, occurring as a complication of tuberculous disease in other parts of the body, might be called tuberculosis of the pericardium. The distinction between the two conditions, however, was merely one of degree. There was an atiological influence produced by the infectious diseases of childhood which was probably due to the enlargement of the mediastinal lymph nodes which followed them. Tuberculosis of the tracheobronchial and peribronchial lymph nodes, with extension of the disease to the pericardium by continuity and contiguity, was the most important ætiological factor. The disease might be plastic or there might be exfrequently hamorrhagic. In some cases adherent pericardium resulted from a lesion which did not end fatally. He reported two cases in which autopsies had been done.

Children of the Tuberculous.—Dr. THEODORE B. SACHS, of Chicago, said that he had examined 322 children of tuberculous parents of the laboring class who were living in surroundings favorable to the transmission of the disease. Twenty-nine per cent. of all the children showed positive evidence of the disease. Among those children born before

the parent became tuberculous, twenty-eight per cent. were tuberculous, and among those born after the parent became tuberculous, thirty-one per cent. were infected. The difference was ascribed to closer contact with the infection in the more crowded surroundings into which the family drifted with the abridgement of the working capacity of the parent.

(To be continued.)

Book Antices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Medical Record Visiting List, or Physician's Diary, for 1909. New, Revised Edition. New York: William Wood & Co.

This diary appears in two editions, for sixty patients a week, and for thirty patients a week, both with or without dates. Besides this visiting list, the diary contains the usual addenda, such as approximate equivalents of temperature, weight, capacity, measures, etc.; maximum doses in apothecaries' and decimal terms; artificial respiration; signs of death, etc.

Pulsating Exophthalmos. Its Ætiology, Symptomatology, Pathogenesis, and Treatment. Being an Essay based upon an Analysis of Sixty-nine Case Histories of this Affection. By George E. De Schweinitz, M. D., Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M. D., Instructor in Ophthalmology in the University of Pennsylvania. Philadelphia: W. B. Saunders Company, 1908.

This essay, an elaboration of a paper by the same authors, aims to compare the therapeutic measures, surgical and others, which have been employed in the treatment of the cases analyzed, and to find a procedure of choice. Particular consideration has been accorded to the orbital operations for the relief of exophthalmic goitre. The observations and conclusions of these well trained and careful observers will be of service, not only to the ophthalmologist, but to the clinician and surgeon as well.

Pathogenic Microorganisms, including Bacteria and Protozoa. A Practical Manual for Students, Physicians, and Health Officers. By William Hallock Park, M. D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College. Assisted by Anna W. Williams, M. D., Assistant Director, Research Laboratory, etc. Third Edition, Enlarged and Thoroughly Revised. New York and Philadelphia: Lea & Febiger, 1908. Pp. viii-642.

This is one of the best bacteriologies in the English language, and should find a place in every physician's library. It is difficult to select any particular portion of the book for commendation, but certainly chapter xiii, dealing with the relation of bacteria to disease, is especially well worth careful study. In a way this strikes the keynote of the book, namely, to give the reader the practical applications of bacteriology to medicine. The chapter on diphtheria covers forty-two pages, and is a mine of information. The chapter on the typhoid colon group of organisms is not so clear as it might be. Thus, on page 260 three types of intermediates are mentioned. After describing the first two types, the authors do not describe the third, the psittacosis type. Paraty-

phoid infection is discussed under the intermediates, page 269, and again under the typhoid bacillus, page 305. The bacteriology of milk is very well discussed, and the importance of cleanliness and rapid cooling is clearly set forth. The chapter dealing with rabies should be read by physicians everywhere. The smear method of diagnosis, now used in the laboratory of the New York City Health Department, is so simple that with some practice it can be performed by any practising physician with moderate laboratory training. There is also a good presentation of Pasteur's treatment of rabies. Altogether this book is a credit to American medical science.

The Extra Pharmacopaia of Martindale and Westcott.
Revised by W. Harrison Martindale, Ph. D., F. C. S.,
and W. Wynn Westcott, M. B. (London), D. P. H.
H. M.'s Coroner for Northeast London. Thirteenth
Edition. London: H. K. Lewis, 1908. Pp. xl-1164.
(Price, 10s. 6d.)

By the use of a thinner paper and smaller type for matter that is not frequently referred to, the revisers of Martindale and Westcott's Extra Pharmacopæia have been enabled to present a volume of smaller size than the preceding twelfth edition, but with an addition of 128 pages. Having run through so many editions since it first appeared, in 1883, the book is familiar enough to physicians and others making use of it to make it unnecessary to describe it in detail. It is sufficient to say that the work has been brought thoroughly abreast of recent progress in medical science, and many novelties in materia medica are included in this edition. As a convenient reference book for new chemicals, drugs, and modes of treatment, it is unsurpassed. It is difficult to name a drug or preparation used in medicine which is not enumerated and described in its pages, and a very excellent index and posological table aid considerably in the work of finding titles. The bibliographical references have always been a commendable feature of the book. Where abstracts from the literature may be deemed too condensed by the searcher after information, the reference to the volume or periodical from which the abstract was made will enable him to consult the original article in its entirety. The high standard of excellence in its abstracts which has always characterized Martindale and Westcott's work is fully maintained in the present edition, and it is a pleasure to reiterate previous words of commendation for the book, which is an indispensable one for the practising physician who still retains his belief in the efficacy of therapeutic measures.

Gynacciogy, and Abdominal Surgery: Edited by Homason A. Kelly, M. D., F. R. C. S. (Hon. Edin.), Professor of Gynaccological Surgery at the Johns Hopkins University; Gynaccologist to the Johns Hopkins Hospital, Baltimore; and Charles P. Noble, M. D., S. D., Clinical Professor of Gynaccology at the Woman's Medical College, Philadelphia; Surgeon in Chief, Kensington Hospital for Women, Philadelphia, Illustrated by Hermann Becker, Max Brödel, and others. Volume II. Philadelphia and London: W. B. Saunders Company, 1908. Pp. iv-862.

As a scientific production this volume is distinctly superior to its predecessor, possibly because it takes up the newer problems of abdominal surgery, while little has been added to the essentials of gynæcology since Gaillard Thomas wrote his epoch making work, twenty years ago and more. The range of

subjects which is covered by this book is a large one, and the writers are the masters in their line. In addition to the distinguished editors, one need only mention the names of Murphy, Ochsner, Moynihan, Opie, Finney, Williams, and the others. While a work by a variety of authors lacks harmony as a literary production from the very variety of literary styles, this objection may certainly be waived from the almost uniform excellence of these papers—short treatises they may be considered.

We have seen no description of the surgical diseases and operations upon the liver and gallbladder which can surpass the excellent one by Ochsner in this volume, and the illustrations leave nothing to be desired in the way of luminosity of demonstration. The same may be said of the comprehensive treatment of intestinal surgery by Murphy.

An interesting discussion is that upon the use of drainage in abdominal and pelvic surgery, which, however, produces no convincing proof, pro or con, except that drainage as a principle is an invaluable one, which may be applied according to the conviction or the prejudice of each individual operator.

We know of no good reason why the "surgery of the pancreas" and "surgical treatment of diseases of the pancreas" might not have been comprised in a single article, or why "hernia" and "operations for inguinal hernia" might not have been condensed in the same way. Occasional obscurities of style might have been remedied by the editors. As a point of mechanical importance, it would seem desirable that so large and heavy a book should have an unusually substantial binding. One who is so fortunate as to own the book will desire to consult it frequently, and the binding would suffer.

Cataract Extraction. Being a Series of Papers, with Discussion and Comments, Read before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. HERBERT CLAIBORNE, M. D., formerly Adjunct Professor of Ophthalmology, New York Polyclinic; Instructor in Ophthalmology, Cornell University Medical College; Surgeon, New Amsterdam Eye and Ear Hospital. New York: William Wood & Co., 1008.

This series of essays, read before the Ophthalmological Section of the New York Academy of Medicine during the year the editor served as its president, forms a very pleasant memento to all who took part in the proceedings at that time. Each essayist was requested to devote himself to a certain topic, but naturally the writers stray into each others' territory more or less and present personal views, and this gives perhaps to the collection its principal advantage over any book written by a single author. The most valuable contribution by any one essayist is possibly the report by Dr. Lambert of the results obtained in two patients by the Fukala operation, made in the chapter on Extraction of the Artificially Cataractous Lens in High Myopia. Novelties in procedure are presented by Dr. Claiborne in chapters vi and xi, Extraction of Cataract with a Lance Shaped Keratotome, and A New Procedure for the Artificial Maturation of Cataract. It seems a pity that Major Smith's operation for extraction in the capsule is dismissed with so few words, but at the time the essay was written very few of us were familiar with the technique, which differs widely from that of the usual operation, or

had enjoyed the good fortune to see it properly performed. As a class the essays are creditable to their authors, and the collection is one we are glad to commend.

The Muscles of the Lyc. Vol. II. Pathology and Treatment By Lucien Howe, M. A., M. D., Professor of Ophthalmology, University of Buffalo, Member of the Royal College of Surgeons, England, etc. New York: G. P. Putnam's Sons, 1908.

The second volume of Howe's monumental work amply fulfils the promise of the first section, on the anatomy and physiology of the ocular muscles, giving, as it does, an authoritative, instructive, and practical survey of the entire field of the pathology and treatment of ocular motor anomalies. chapter on operations on the eye muscles is unusually complete and clear. The question of ocular palsies due to lesions in the brain or in the nerves is considered at length. A short chapter is devoted to atypical movements, including nystagmus, and it is to be hoped that the author will at some future time give us a more detailed study of the last topic. The illustrations are of rather un-Greater uniformity of scale and even merit. method would have added to their attractiveness as well as to their demonstrational value.

BOOKS, PAMPHLETS, ETC., RECEIVED

The Arteries of the Gastrointestinal Tract with Inoscu-The Arteries of the Gastrointestinal Tract with Inosculation Circle. Anatomy and Physiology, with Application in Treatment. By Byron Robinson, B. S., M. D., Professor of Gynaccology and Diseases of the Abdominal Viscera in the Chicago College of Medicine and Surgery, etc. Chicago: E. H. Colegrove, 1908. Pp. 222. (Price, \$1.50.) Report of the Commissioner of Education for the Year Ended June 30, 1907. Volume I. Washington: Government Printing Office, 1908. Pp. vii-522.

1. Fau de mer en injections hypertoniques dans le traite-

ment Printing Omee, 1900. Pp. VII-522.

L'Eau de mer en injections hypertoniques dans le traitement des maladies chroniques. Par le Docteur G. Le Méhauté, médecin principal de la Marine en retraite, ancien professeur à l'Ecole principale du service de Santé de la Marine. Paris: A. Maloine, 1908. Pp. 31. (Price, 1

fr. 50.)
Transactions of the American Surgical Association. Volume XXVI. Edited by Richard H. Harte, M. D., Recorder of the Association. Printed for the Association by William J. Dornan, Philadelphia, 1908. Pp. xxxiii-756. The Surgery of the Ear. By Samuel J. Kopetzky, M. D., Attending Otologist, New York City Children's Hospitals and Schools, Attending Otologist to the New York Red Cross Hospitals, etc. Illustrated with Sixty-three Half Tone and Line Drawings, Eight Charts, and Four Colored Plates. New York: Rebman Company, 1908. Pp. xvii-368. The Practitioner's Visiting List. 1909. Thirty Patients a Week. Philadelphia and New York: Lea & Febiger, 1909. Pp. 192.

Pp. 192.

Pp. 192.
Surgery. Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M. D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers Da Costa, M. D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume IV. With 582 Illustrations, 22 of them in Colors. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 1104. (Price, \$7.) Report of the Trustees of Bellevue and Allied Hospitals for the Three Months Ending December 31, 1907. Pp. 27.

for the Three Months Ending December 31, 1907. Pp. 27.
Proceedings of the American Medicopsychological Asso-

ciation at the Sixty-third Annual Meeting, held in Washing in D. C. May 7 to 10, 1007. Pp. 350

Annual Report of the Surgeon General of the United States Navv, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy. For the Fiscal Year 1908.

Pp. 164.
The Medical Record Visiting List, or Physician's Diary, for 1990. New Revised Edition. New York: William Wood & Co.

Lehrbuch der Haut- und Geschlechtskrankheiten. Bearbeitet von Professor Dr. Bettman, Heidelberg; Professor beitet von Professor Dr. Bettman, Heidelberg; Professor Dr. Brushns, Charlottenburg; Professor Dr. Buschke, Berlin; Professor Dr. Ehrmann, Wien: Professor Dr. Grouven, Bonn; Professor Dr. Jesionek, Giessen; Professor Dr. Riecke, Leipzig; Professor Dr. Riehl, Wien; Privatdozent Dr. Tomasczewski, Halle a.S.; Professor Dr. Török, Budapest; Privatdozent Dr. Ritter von Zumbusch, Wien. Herausgegeben von Professor Dr. Erhard Riecke, Leipzig, Witt As Enrheutzfelban, und aus genesentik, mehrickligen. Mit 14 Farbentafeln und 235 grossenteils mehrfarbigen Textabbildungen, Jena: Gustav Fischer, 1909. Pp. x-664. The Future of Medicine. By Sydney W. MacIlwaine, M. R. C. S., L. R. C. P. London: P. S. King & Son, 1908.

(Price, ts.)
Medizinische Logik. Kritik der ärztlichen Erkenntnis.
Von Dr. W. Biegabski. Autorisierte Uebersetzung nach der zweiten Originalauflage, von Dr. A. Fabian. Würz-

Von Dr. W. Biegabski. Autorisierte Uebersetzung nach der zweiten Originalauflage, von Dr. A. Fabian. Würzburg: A. Stuber, 1909. Pp. 237.
Diagnose und Therapie des Ekzems. I. Teil: Diagnose. Von Dr. S. Jessner, Königsberg i.Pr. J. Auflage. Würzburg: A. Stuber, 1909. Pp. 96.
Lehrbuch und Atlas der Zahnheilkunde mit Einschluss der Mundkrankheiten. Von Dr. med. und phil. Gustav Preiswerk, Lektor an der Universität Basel. Zweite verbesserte und vermehrte Auflage. Mit 50 vielfarbigen Tafeln und 141 Textabbildungen. München: J. F. Lehmann, 1908. Pp. xx-398.
A Dictionarv of Medical Treatment for Students and Junior Practitioners. By Arthur Latham, M. A., M. D. (Oxon.), M. A. (Cantab.), F. R. C. P. (Lond.), Physician and Lecturer on Medicine at St. George's Hospital, London, etc. Philadelphia: P. Blakiston's Son & Co, 1908. Pp. vi-325.
Transactions of the Sixth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine Hospital Service. Washington: Government Printing Office, 1908. Pp. 79.

Miscellany.

Dr. Henry Denton Nicoll.—In the recent death of Dr. Nicoll on October 26th at New Windsor, New York, in the sixty-fifth year of his life, there has been removed from the medical profession of New

York city one of its leading practitioners.

His active work in the Woman's Hospital, with which he was connected for thirty years as visiting surgeon and as consulting surgeon, also his valuable services in the organization and administration of the New York Infant Asylum, will make his loss keenly felt by both of these institutions.

During the last few years of his life Dr. Nicoll had to an extent retired from active practice, though still giving unstintingly to the above institutions his ma-

ture counsel and warm interest.

During these later years he enthusiastically joined with others in the vicinity of his country home at New Windsor, N. Y., in surrounding the young men and young women of that locality with elevating and refining influences. In such a capacity he was the president of the Law and Order League of New Windsor Township, and in the village of Moodna, near his country home, he built a chapel, the centre of the practical uplifting and of the moral work of the community.

At a recent special meeting of the Medical Board of the Woman's Hospital in the State of New York, the following resolutions were unanimously adopted:

Resolved. That in the death of Dr. Nicoll the Woman's Hospital has lost one who uniformly placed its interests above that of self, considering at all times its welfare.

That in the loss of his prudent, conservative counsel the Medical Board feel deeply his death, and recognize that in his faithful administration of the office of president it has lost a devoted friend, a wise adviser, and one whose influence has been and will be felt throughout the Hospital.

That, as a small token of our love and admiration for our colleague, we present this to the Governing Board of the Hospital and direct that a copy be sent to the medical journals of New York city for publi-

cation and also to the family of Dr. Nicoll.

(Signed)

CLEMENT CLEVELAND, B. MCE. EMMET. P. F. CHAMBERS, J. RIDDLE GOFFE, LEROY BROUN, AUSTIN FLINT, JR.

The Town Physician.

Uncle Bill?—what!—he fifty!
Now come all ye thrifty—
Ev'ry man his voice left—he
Must sing high and loud:
Give a rouse, lads,
Give a rouse, lads,—
Ev'ry heart in the crowd!

Country doctor, this man is; Drugs and laughter his plan is; Babes, farmhands, and grannies Testify to his skill:—
Mother and man, sir.
They will answer
With a cheer and a will.

He's as brown as the heather:— Fun, hardship, and weather All working together Have seasoned his age To the queerest And dearest Antic boy and grown sage.

Up he'll get in the night time,— Drop his axe in the light time— Any time is the right time— To heed the poor's call— Even when he's Horse racing Or playing base ball!

Come when he is sent for?
What else is he meant for!
But it's what you'll repent for
If you send without cause:
Being sorry
Will hardly
Appease him—so pause

Faith!—betimes he's clean cranky: Then (Moody and Sankey!) Better step aside, thanky.— But never drop out:— When he's wry, lads, Stand right by, lads.— I'ay his debt with a shoun!

For we know he's as tender.

A mother's defender.

When dark fears attend her.

Fighting death with his might—

Mother and man. sir.

They will answer

With a prayer for this knight.

Rough and brown as the heather: Fun, hardship, and weather All working together Have seasoned his age To the queerest And dearest Warm heart and sweet sage.

Big, sport loving, thrifty—
Queer, tender, and mifty—
Sentimental and fifty—
That's the way of him:—loud
Shake it out, then,
In a shout, men.—
Ev'ry throat in the crowd!

Herbert Wescott Fisher, of Nordhoff, Cal., in New Haven Register.

Official Mews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fover, cholera and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending December 4, 1908:

Smallbox—United States.

| | | TO |
|--|-------------------------------|--|
| Places. | Cases. | Deaths. |
| C III I II II II I | 8 | |
| California—San Francisco Nov 7 14 Kansas—Topeka Nov 7-14 Ohio—Cincinnati Nov 13-20 | 0 | |
| Kansas—Topeka | 7 | |
| Ohio-Cincipnati Nov 12-20 | 2 | |
| The state of the s | 49 | |
| Tennessee—Nashville Oct. 22-Nov. 20 Texas—Encinal Nov. 14-21 | 44 | |
| Texas—Encinal | 1 | |
| Washington-Suckane Oct 7-14 | I | |
| Weshington Tocomo Oct or Nov | 1 | |
| Washington—Spokane Oct 7-14. Washington—Tacoma. Oct 24-Nov. 1 | | |
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| Smallpox-Insular. | | |
| Philippine Islands-ManilaOct. 3 10 | 4 | |
| Timppine Island - Manna, | | 2.2 |
| Algeria-Algiers | | |
| Algeria—Algiers Oct. 1-31 | | 19 |
| Pengil Pahin Sept 1-20 | 1 - 1 | 0 |
| Brazil—Bahia Sept. 1-30 Canada—Halifax Nov. 7-14 | , ., | |
| Canada—Hanrax | + | |
| Canada—Victoria | I | |
| Ceylon—Colombo Oct. 3-17 | 56 | 1.1 |
| No. | 7 | r |
| Egypt—CairoOct. 21-26 | * * / | 3 |
| Egypt—CairoOct. 21-28: France—ParisOct. 24-Nov. 7 | 4 | |
| India—Bombay Oct. 20-27. India—Calcutta Sept. 26-Oct. 10 | | |
| India-Coloutta Sent a6-Oct 10 | | |
| Thura Carcutta | | |
| Italy—GeneralNov. 1-8 | 4 | |
| Italy-NaplesNov. 1-8 | 12 | |
| Russia—OdessaSept. 26-Oct. 3 | | |
| Russia—WarsawOct. 10-17 | | |
| Russia—Warsaw | | |
| Spain-BarcelonaOct. 31-Nov. 7 | | |
| Turkey-Constantinople Nov. 1-8 | | - |
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| Yellow Fever-Foreign. | | |
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| Brazil—Bahia | | |
| Brazil—Para Oct. 17-24 | | |
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| Martinique-Port de France Qui 24-31 | | |
| Mexico—CampecheNov. 7-14 | . I | |
| Martinique—Fort de France Oct. 24-31 Mexico—Campeche Nov. 7-14 Mexico—Merida Nov. 7-14 | 5 | 3 |
| Mexico-Vera Cruz Nov. 7-14 | | |
| McXICO—VCIa Cidaiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii | | |
| Cholera Insular. | | |
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| Philippine Islands—Manila Oct. 3-11 | 55 | 1.1 |
| Philippine Islands—ManilaOct. 3-10 Philippine Islands—ProvincesOct. 3-10. | 1.276 | 7.3 |
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| Cholera—Foreign. | | |
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| India—BombayOct. 20-27 | | 110 - 1111 |
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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending November 25, 1908.

BRYAN, WM. M., Assistant Surgeon. Upon expiration of Present leave of absence, relieved from duty at the New Orleans Quarantine Station, and directed to proceed to the South Atlantic Quarantine and assume

command. BURKHALTER, J. T., Passed Assistant Surgeon. Upon being relieved by Surgeon W. P. McIntosh, directed to proceed to Gulf Quarantine Station and assume command.

CARRINGTON PAUL M., Surgeon. Upon being relieved by Passed Assistant Surgeon H. S. Mathewson, directed to proceed to San Diego, Cal., and assume charge of

COLLINS, G. L., Passed Assistant Surgeon. Granted three days' leave of absence, from November 17, 1908, under

paragraph 189, Service Regulations.
Goldsborough, B. W., Acting Assistant Surgeon. Granted six days' leave of absence from November 28, 1908, un-

der paragraph 210, Service Regulations.
GRUBBS, S. B., Passed Assistant Surgeon. Directed to report at the bureau for further instructions.

GUSTETTER, A. L., Acting Assistant Surgeon. Leave of absence for ten days, from November 15, 1908, granted November 9, 1908, amended to read from November 16, 1908.

N, M. K., Passed Assistant Surgeon. Upon being relieved by Assistant Surgeon William M. Bryan, directed to proceed to Baltimore, Md., and report to the Medical Officer in command for duty and assignment to quarters

HILL, EUGENE W., Acting Assistant Surgeon. Granted four days' leave of absence, from November 24, 1908, under paragraph 210, Service Regulations.

Holt, John M., Passed Assistant Surgeon. Granted one day's leave of absence.

day's leave of absence.

KALLOCH, P. C., Surgeon. Directed to proceed to Oak
Grove, Me., for special temporary duty.

LIGHT, S. D. W., Acting Assistant Surgeon. Granted twenty-two days' leave of absence, from November 17, 1908.

MATHEWSON, HENRY S., Passed Assistant Surgeon. Upon
being relieved by Passed Assistant Surgeon. C. W.
Wille, directed to proceed to Fort Stanton, N. Mex.,
and assume command. and assume command.

MINTHORN, HENRY J., Acting Assistant Surgeon. Granted seven days' leave of absence from November 23, 1908,

under paragraph 210, Service Regulations.

TAPPAN, J. W., Acting Assistant Surgeon. Directed to make inspections at Del Rio and Hidalgo, Tex.

THOMPSON, JOHN K., Pharmacist. Directed to proceed to Angel Island Quarantine and report to the Medical

Officer in command for temporary duty.

Wertenbaker, C. P., Surgeon, Detailed to represent the Service at the Thirteenth Annual Meeting of the Seaboard Medical Association of Virginia and North Caroboard Medical Association of Virginia and North Caroboard Medical Association of Virginia

lina at Washington, D. C., December 1 to 3, 1908.

WILLE, C. W., Passed Assistant Surgeon, Upon being relieved by Passed Assistant Surgeon J. T. Burkhalter, directed to proceed to Cleveland, Ohio, and assume

Appointment.

Dr. Carlisle P. Knight appointed an acting assistant surgeon for duty at Kobe, Japan.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital in Baltimore, Md., November 25, 1908, for the purpose of conducting physical examinations of the members of the graduating class of cadets of the Revenue Cutter Service; Passed Assistant Surgeon W. C. Billings, chairman; Assistant Surgeon A. J. Warner, recorder.

Army Intelligence:

Official list of changes in the stations and duties of offi-, in the Mexical Courts of the United States,

Enders, W. J., First Lieutenant, Medical Reserve Corps.
Granted leave of absence for ten days.
KELLY, J. P., First Lieutenant, Medical Reserve Corps.
Relieved from duty at Fort Miley, Cal., and ordered to Oahn, H. T.

Kennedy, J. M., Major, Medical Corps. Ordered to report December 1, 1908, for duty as Chief Surgeon. Department of California.

MORSE, C. F., Captain, Medical Corps. Relieved from duty at Fort Howard, Md., and directed to proceed to Fort

Huachuca, Ariz., to accompany troops to the island of Oahu, H. T., for duty there.

SIEPHENSON, A. V., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States.

TROTTER-TYLER, G., First Lieutenant, Medical Reserve Corps. Ordered from Fort Adams, R. I., to Fort Revere, Mass., for temporary duty.
WILLIAMS. A. W., Captain, Medical Corps. Granted leave of absence for three months.

The following first lieutenants of the Medical Reserve Corps have been ordered to active duty in the service of the United States: W. T. Councilman, Simon Flexner, Alexander Lambert, J. H. Musser, W. S. Thayer, V. C. Vaughan.

The following medical officers were appointed members of a board to meet at Washington, D. C., on December 7, 1908, to investigate the question of immunizing the regular 1908, to investigate the question of immunizing the regular, and, in case of war, the volunteer, army against typhoid fever: W. T. Councilman, First Lieutenant, Medical Reserve Corps; Simon Flexner, First Lieutenant, Medical Reserve Corps; J. H. Musser, First Lieutenant, Medical Reserve Corps; R. M. O'Reilly, Brigadier General, Medical Corps; Frederick F. Russell, Captain, Medical Corps; W. S. Thayer, First Lieutenant, Medical Reserve Corps; V. C., Vaughan, First Lieutenant, Medical Reserve Corps.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 5, 1908:
CURTIS, E. E., Assistant Surgeon. Ordered to the Chatta-

nooga.

DESSEZ, P. T., Passed Assistant Surgeon. Detached from duty at the naval hospital, Mare Island, Cal., December 31, and ordered to the Pacific Fleet, sailing from San Francisco, Cal., about January 5.

Dunbar, A, W., Surgeon. Ordered to command the Re-

lief.

OLSON, C. M., Assistant Surgeon. Ordered to the Culgoa. SPEAR, R., Surgeon. Detached from the Relief and ordered to the Rhode Island.

Stokes, C. P., Surgeon. Detached from command of the Relief and ordered home.

Births, Marriages, and Beaths.

Married.

CLEMENTS—MALONE.—In Philadelphia, on Thursday, December 3d, Dr. Ralph L. Clements, of the United States Department of Agriculture and Miss Helen B. Malone. ROGERS—TARBELL.—In Garden City, L. I., on Monday, November 30th, Dr. Lester Brooks Rogers, of New York.

and Miss Louise Tarbell.

BACON.—In Riverside, Rhode Island, on Sunday, November 22nd, Dr. Walter A. Bacon, aged thirty-five years.
BUSHNELL—In East Orange, New Jersey, on Saturday,
November 28th, Dr. Hanley Nelson Bushnell, aged eighty-

EARHART.-In Philadelphia, on Friday, December 4th,

Dr. William J. Earhart, aged sixty-seven years.
Homer.—In Newburyport, Massachusetts on Tuesday,
November 24th, Dr. John Homer.
IRELAND.—In Cincinnati, Ohio, on Saturday, November
28th, Dr. John M. Ireland.

28th, Dr. John M. Ireland.
JENNINGS.—In Brooklyn, on Monday, November 30th,
Dr. Ella A. Jennings.
KNAPP.—In Hackensack, New Jersey, on Thursday, December 3d, Dr. Louis P. Knapp.
McCosu.—In New York, on Wednesday, December 2nd.
Dr. Andrew J. McCosh, aged fifty years.
STELLE.—In Campton, Kentucky, on Thursday, November 26th, Dr. Wiley Steele.
WILELER.—In Chatham, New York, on Thursday, December 3d, Dr. John T. Wheeler, aged fifty-eight years.
WINTELS.—In Hickman, Kentucky, on Wednesday, November 25th, Dr. Will Winters, aged fifty-five years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and Medical News

A Weekly Review of Medicine, Established 1843.

Vol. LXXXVIII, No. 25. NEW YORK, DECEMBER, 19, 1908.

WHOLE NO. 1568.

Original Communications.

TREATMENT OF BILIARY DISEASE AS DETER-MINED AT THE OPERATION.

> By Howard Lilienthal, M. D., New York.

The surprises of abdominal section occur most frequently in one's early days of surgery. Later we learn not to be surprised at any condition within the peritoneal cavity, however interesting or unusual it may be. If experience in this branch of our art teaches anything, it teaches that the most logical and scientific diagnosis may be completely upset at the first stroke of the knife through the peritonæum. Cancer of the liver becomes common duct stone and vice versa. An enlarged Riedel's lobe turns out to be the kidney; carcinoma of the pylorus may have been simulated by pericholecystitis, and so on, in an endless catalogue. With riper knowledge the typical cases become more rare, and the beautiful confidence and accuracy of youth vanish, but there comes a quiet and safe uncertainty which promises well for the patient on the operating table. Instead of the unexpected shock of an overturned diagnosis, with its doubt as to the propriety of the next step, we have a cool and instant acceptance of conditions as they are encountered, and the work goes on with little or no delay incident to the change in plan. It is certainly wise not to be too sure of what will be done at an operation, and frequently embarrassment may arise from preoperative promises made to the patient or his friends as to the exact nature of the contemplated procedure. It is better not to operate unless there is full permission to do anything or everything which may be necessary for the welfare of the patient. Serious legal complications have occasionally arisen, to the annovance and anxiety of the surgeon, whose professional conscientiousness was greater than his worldly wisdom. Always try to have the family physician present at the operation, not only as a matter of courtesy, but for self protection and to share responsibility. No matter how much confidence the patient may have, the surgeon is usually a comparative stranger, and motives are sometimes questioned by the suspicious.

Before performing a laparotomy every reasonable method of investigation should be practised and a working diagnosis should, in any event, be arrived at; but all, even remote possibilities, must be considered, so that, as in a well played game of chess, the countermove for every play of the adversary is known in advance.

In diseases of the biliary system all the usual examinations should be made, and in the more chronic ailments analysis of the stomach contents must not be omitted. Many cases diagnosticated as disease of the gallbladder are in reality gastric, duodenal, or even renal. Again, there may be clear and convincing proof of gallbladder disease, when at the time of exposure the viscus may be found apparently normal. Even a "normal" gallbladder, in the absence of gastric, duodenal, or renal disease, had better be removed, if the symptoms are sufficiently grave to warrant an operation and the exploration is otherwise negative.

CASE I.—Mrs. K. twentveight years old, had reneated attacks of typical biliary colic with no history of jaundice. She was first seen by me in consultation with Dr. L. Stieglitz during an attack of what looked like cholecystitis complicating a severe influenza. There was complete recovery, but other colicky attacks followed and on the evidence presented an operation was decided upon. I expected to find a single large calculus or a few large calculi of such size that passage through the cystic duct would be impossible, this accounting for the absence of jaundice. To my surprise the gallbladder on exposure was almost normal in appearance and certainly contained no stones. Cholecystostomy promised little or nothing, so with the concurrence of her physician the gallbladder was removed. It was noted then that the lumen of the cystic duct was so contracted that it admitted only the finest probe. Evidently there had been at some time ulceration and cicatrization with stenosis. Recovery was quick and seems to be permanent.

It sometimes happens that one makes a diagnosis of disease of the gallbladder and at operation there is difficulty in even finding the organ. Here the sense of touch as well as that of sight will sometimes aid us.

Case II.—A. K., a man, aged fifty-four, patient of Dr. deure, had obstructive jaundice and glycosuria, the attack during which I had seen him, March 17, 1904, having begun about a week before. There was also an old history of trouble dating back six years. He was deeply jaundiced and there was vomiting but no fever. Four or five days later, after repeated calomel purging there was sudden relief of pain, but the jaundice increased. I operated upon him at Mt. Sinai Hospital. Opening the right upper quadrant between the fibres of the rectus muscle, no gallbladder could be seen, but the palpating finger discovered a hard mass in the substance of the liver near the fissure. It proved to be the gallbladder, contracted and completely buried in liver substance; its walls were thick and gristly. In spite of the jaundice and glycosuria this gallbladder was removed by actually digging it out of its hepatic bed. The common duct was opened, a stone extracted, and the wound sutured without drainage of the duct. Smooth convalescence followed.

These thick walled, chronically inflamed gall-bladders are extremely apt to become carcinomatous, and should, therefore, be removed.

In the presence of pericholecystitis with suppuration it may be unwise to make the necessary dissection for the removal of a gallbladder even though

its walls are thickened and the other indications for cholecystectomy are present. Much dissection and handling in the neighborhood of a recently evacuated abscess is unsafe, and relief should be our aim, postponing the radical procedure until a more fitting time. A case in which there was a most unusual complication will illustrate the point.

Case III.—Rudolph G., twenty-eight years oid, had suffered for years with "indigestion," the attacks lasting for several days. There had never been jaundice. There was several days. There had never been jaundice. There was pain in the pit of the stomach, the right hypochondrium, and back. No chills and only moderate fever. He came to my office on November 24, 1907, and on examination I could easily make out a hard, tender mass close to the abdominal parietes in the right hypochondriac region. Periodelegistic with chelekithics, who disconstituted and cholecystitis with cholelithiasis was diagnosticated and operation advised. Soon after he entered the hospital, and on section an abscess about the very much thickened gallbladder was evacuated, a single large spheroidal stone was removed from the viscus itself, and the two cavities were drained separately. The discharge of pus was rather profuse, the odor being very foul; the patient, however, did not appear to be absorbing much toxine, for he was not in a septic condition. One day about three weeks after the operation, a bladderlike mass the size of a white grape was washed from the wound, and it was evident that we were dealing with the unusual complication of a hydatid cyst in the presence of gallstone disease. For a number of weeks the discharge continued, large numbers of hydatids being cast off. Finally a counteropening was made in the back for drainage, and a double handful of calcareous cyst wall was removed. Perfect recovery followed.

I am quite certain that had I attempted to remove this gallbladder at the primary operation, serious infection and

great danger to the patient would have resulted. Should this man ever again be troubled by symptoms referable to the gallbladder, it would be justifiable to remove the of-

fending organ.

There is one rule which is as inflexible as any in surgery, and that is that when icterus is present the operation should not be stopped until bile flows. But, naturally, the mere appearance of bile may not mean that we have done all that should be done. Bile may freely run from an incision in the gallbladder or the ducts above an obstruction, and this obstruction must be overcome to accomplish a radical cure. If this cannot be safely done at one sitting we may rest satisfied with the drainage and postpone clearing the ducts. When there is deep icterus with great hepatic engorgement and slow blood coagulation, we must do the work through the smallest possible incision with the least possible handling of the viscera. Then in a few weeks we may operate for the actual cure of the disease. It is much the same in biliary obstruction as in intestinal obstruction-better not attempt too much at a time, but rest content with the procedure involving the least element of risk. When the patient has recovered his strength he will be better able to stand the shock of the more serious operation. It is a good principle rather to multiply small operations than unnecessarily jeopardize the patient by a single grave one, and this often in spite of the wishes of the patient or his friends, who may be anxious to have the disagreeable experience over.

When, however, there is a distended gallbladder with sepsis, with or without icterus, the gallbladder may be emptied or removed, and the entire operation concluded without show of bile, provided the patient is too weak to permit persistent dissection. The obstruction is caused by the swelling of the mucosa of the cystic duct. In a few days, when the engorgement has subsided, the bile will flow

freely.

Case IV .- I. G., a man of about fifty, alcoholic, had never to his knowledge suffered from bilary disease. I saw him with his physician, Dr. Spivacke, after about a week's illness with jaundice, high fever, abdominal distension, and an enormously increased liver dulness. Through the unwillingness of the patient to submit to operation, the case dragged on for several days, all the symptoms becoming aggravated, and the pulse finally becoming so wretched, and the patient's general condition so critical, that when consent was obtained I was afraid to do more than a quick cholecystostomy with local anæsthesia. The gallbladder, full of pus and stones, was drained, not a trace of bile appearing for several days afterward. Finally matters took a pearing for several days afterward. Finally matters took a turn for the better, the jaundice yielded to a profuse biliary discharge from the wound, and for a number of weeks the patient continued to improve. The enlarged liver became much smaller, but the biliary fistula refused to heal, and the stools remained clay colored. At the subsequent operation the gallbladder was removed, a stone was taken from the common duct, and the patient made a good recovery.

In the aged and in the extremely feeble do as little as will suffice to overcome the present emergency, and gauge your operation with a view to getting the patient out of bed as early as possible.

Never, except in the presence of collapse, close the abdomen without examining the pylorus and the pancreas. If white or vellow plagues of fat necrosis are seen in the omentum or mesentery it means that the bile passages should be drained, preferably by cholecystostomy, whether stones are present or not. The fat necrosis indicates the presence of acute pancreatitis, a diagnosis which is very rarely made before operation.

In conclusion a few words about the technique: First: Use but little gauze packing, even of the temporary variety. Many operators are absurdly afraid of soiling the peritonæum with a few drops of bile or pus. Infection, perhaps dangerous, may follow the soiling of the handled and damaged peritonæum, but the mere presence of bile or even pus will not cause general septic peritonitis unless the integrity of the peritonæum has been impaired by rough handling or contact with gauze. Another reason for avoiding packings is that they tend to produce adhesions, which may not only be embarrassing should a secondary operation be necessary, but which may in themselves give rise to complete or incomplete obstruction, particularly in the neighborhood of the pylorus.

Second: In case of common duct disease this structure is more easily reached and manipulated when the gallbladder has been removed and the cystic duct drawn up by traction sutures. stump of the gallbladder having been secured, it is not usually difficult to slit the duct with scissors down into the common duct. Hæmorrhage may be accurately checked and the work can go on in a

quiet and orderly manner under the eye.

Third: Leave the traction sutures in place. It may be that in spite of every precaution recurrent bleeding occurs. I have seen a life lost in the blind groping for points of hæmorrhage at the bottom of a well of blood. If the traction sutures are in place it is but the work of a few seconds to reopen the wound and draw into view the parts where the trouble is most frequently found.

As in all surgical work, the personal element of the operator is a most vital one. Minute points of technique, difficult or even impossible to describe, may perhaps count heavily when it comes to figuring percentages. Among other things, I am convinced that speed without haste is of the greatest

importance—and speed is best attained by knowing what is to be done and then doing it with little waste of useless effort. We all know how much time is saved in travelling over a well known road where one need not consult maps or ask the way. All the more is it so with work in surgery. probabilities are that the twentieth operation of a given type will "go" more rapidly and smoothly than the first or even the tenth. The neatest, the quickest, and the safest work-other things being equal-will be done by the man who has had the greatest amount of intelligent and profitable experience.

115 EAST SEVENTY-THIRD STREET.

THE MISTLETOE.

(Viscum album, "All-heale"); A Monster in Botany; a Dryad in Mythology; a Panacea in Therapeutics; a Perennial Yuletide Symbol of Seminal Survival and Reproductive Vitality.

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The vegetable items of the overcrowded materia medica of the successive ages of human existence, as chronicled in the history of the same, have individually had allotted to them their special geographical and seasonal areas and periods of adaptability and usefulness. Many of the representative leaders of the medical schools of the older (prescientific) centuries believed, or professed to believe, that every locality in the world brought forth plants of which the tissues and juices contained the remedies requisite for the healing of its characteristic diseases. And the powers of a merciful Providence -- as represented and applied by the omnipresent influence of invisible and mysterious Nature-did not firmly bolt the Doors of Knowledge against the earnestly curious inquirer. The available clue-the "open sesame"-to a knowledge of every therapeutic item of the vegetable kingdom was furnished by the signature of the vegetable species in each case; the formative stamp which furnished the collective external testimony to its inward qualities and powers, which pretty exactly corresponded to that furnished by the physiognomy of the members of the animal kingdom-including that of the theomorphic entity, homo sapiens. Some of the curative agents, so revealed, were discovered by experience to have powers of very limited range and disappointing quality; others retained their reputation through very many succeeding generations-some even down to our own; others still retained some of their popularity as symbols, or items of scientific (or æsthetic) interest, long after their therapeutic reputation had almost wholly faded.

Even in our own provokingly practical, and materialistically mechanical generation, the annual arrival of the festive season of Christmastide does not fail to carry with it, in the usual course of events, a renewal of old acquaintances and a repolishing up of old friendships-concurrent with the dutiful celebration of certain household, and other correlated, customary rites. The advene of the brumal solstice will. I would fain hope, never fail-throughout our unromantic twentieth century, or even its remotest successors-to reburnish some of the fireside associations of the antique cult of the Lares and Penates. The Yuletide log on the kitchen hearth, and the Christmas tree on the drawing room floor, always offer, and must evermore recall, the brightest associations in the memories of hearts still unsullied, and affections still vivid and loyal; while to the members of our social community who are about to enter on the trying race for life there is probably no emblem of this sacred season that will be found to elicit more thrilling sensations than will the mistletoe. A strange entity of the vegetable kingdom is, indeed, the genus Viscum, of which this our osculatory Viscum album appears to be the only one of the eighty species duly described and named that has made itself a home on European soil. And the curious vagaries of its life history never failed to prove a puzzle to the apostles and pioneers of botanical science and exploration—fairly comparable, indeed, to those elusive riddles which were placed in the pathway of the curious in bird lore by the domestic idiosyncrasies of the cuckoo, the peculiarly unmigratory flights of the corncrake, and the tropical (and submarine) vacations of the swallow. And the sceptical eye still continues to recognize the existence of a somewhat corresponding haziness-investing, even in our own day, in the "scientific" items of natural history which occupy the position of orthodox and accepted biological gospel in the case of each one of those several stumbling blocks of the respective pathways of the botanist and the ornithologist.

The almost weird attraction which the unique individuality of this member of the vegetable kingdom has secured for itself in the folklore, as well as in the botanical—and even medical—literature of so many countries, throughout a period of over two thousand years (at the least), furnishes some tempting food for reflection to the philosopher as well as to the scientist. The writings of Theophrastus and of the elder Pliny prove that even long before the dawn of the Christian era the Viscum album was not only an object of curious and wondering inquiry to the botanical specialist, and a practical agent of special functional importance in the hands of the speculative bird catcher, but a highly accredited item of the therapeutic armamentarium, and an object of the most devout attention to the priesthood of Celtic Druidism and their unnumbered disciples and followers. In such respects it rivalled the lotos of the ancient Egyptian, and the more remote "celestial," empires; its continental prominence far overtopped the relatively local eminence accorded, in later times, to the Swiss Edelweiss, and our own Irish shamrock, respectively. In his encyclopædic compilation of the facts and fables (and art, and science, and gossip, and theory) of the natural history obtainable from the literature and the folklore of the nations of classic antiquity, Caius Plinius Secundus informs his readers, just as ivy in time destroys the vitality of the trees to which it clings for support: "The like is to bee said (in some sort) of the Misselto, although it is generally thought, that the harme thereby is not so soon seen." (Philemon Holland's version.) And he then proceeds to observe:

And this you must thinke, that this Misselto is not to be taken for the fruit of a tree, and therfore as great a

wonder it is in nature, as any other: for some things there be, that not willing to grow out of the earth, engender in trees, and having no proper place of their own habitation to seat themselues in, sojourn as it were and make their abode with others, and of this nature is the Misselto.

Then after enumeration of the names and respective habitats of the more prominently recognizable of known parasitic plants, the grand old natural annalist goes on to say (in the quaint rendering of his medical "Translator-General"):

But to return againe to Misselto, there bee three kinds tree is called Stelis in Eubea, and Hyphear in Arcadia. And as for that which properly is Misselto indeed, most men are of opinion, that it groweth fast to the common Oke, the wild Robur, the Holme, wild Plumtree, and the Terebinth, and lightly on any other trees. Howbeit in greatest plenty it is seen yoon the Oke, and that is named Dryos Hyphear. A difference there is in the Hyphear and Misselto, on what tree soeuer they are found (except the Holm and common Oke) in regard of the sauor, which is strong and stinking in the one more than the other. The leafe of both of them have no pleasant smell, and in the Misselto it is bitter, clammy, and viscous besides. There is moreouer, by mens saying, another difference in Misselto: for that which groweth vpon trees, shedding their leaues in winter, loseth also his owne leaues; but contrariwise, it continueth alwaies green vpon such trees as hold their leaues all the yeare long. Moreouer, set or sow this Misselto what way soeuer you will it will neuer take and grow: it comes onely by the mewting of birds, especially of the Stockedoue or Quoist, and the Black bird, which feed thereupon, and let it passe through their body. And this is the nature of it, vulesse it be mortified, altred and digested in the stomacke and belly of birds, it will neuer grow. It exceedeth not al any time a cubit in heighth, notwithstanding it be alwaies greene and full of branches. The male beareth a certaine graine or berry: the female is barren and fruitlesse. But sometimes neither the one nor the other beareth at all.

The uncanny awe and theological dignity with which the mistletoe was invested by the Druidical mythology of western Europe in the olden time are very difficult to realize in our own practical and mechanical and calculating-and jaded and worriedtwentieth century. They account, of course, for the wondrous medicinal virtues attributed to this strange plant by the members of the august hierarchy of that religion. The devotion-both theologic and therapeutic-which was so universally accorded to the mistletoe in that quaint and curious cult, which governed the higher emotions of the inhabitants of western Europe before the dawn of Christian enlightenment, has been sketched by Pliny in considerably full detail. It is thus reproduced in the delightful version of Philemon Holland, Doctor of Physicke:

And forasmuch as we are entered into discourse as touching Messelto, I cannot ouerpasse one strange thing thereof veed in Frence: The Druidæ (for so they call their Diuinors, Wisemen, & the state of their Clergy) esteeme nothing more sacred in the world than Misselto, and the tree whereupon it breeds, so it be on Oke. Now this you must take by the way. These priests or Clergy men chose of purpose such groues for their diuine seruice, as stood only vpon Okes; nay, they solemnise no sacrifice, nor perform any sacred ceremonies without branches & leaues thereof, so as they may seem well enough to be named thereupon Dryide in Greek, which significath as much as the Oke priests. Certes, to say a truth, whatsoeuer they find growing vpon that tree oner and besides the own fruit, be it Misselto or any thing else, they esteem it as a gift sent from heauen, and a sure sign by which that very god whom they serue glueth them to vuderstand, that he hath chosen that peculiar tree. And no maruel, for in very deed Misselto is passing geason and hard to be found vpon the oke; but when they meet with it, they gather it very denoutly

and their seuerall ages, which haue their revolutions every thirty yeres) because she is thought then to be of great power and force sufficient, and is not yet come to her halfe light and the end of her first quarter. They call it in their language All-Heale, (for they haue an opinion of it, that it cureth all maladies whatsoeuer) and when they are about to gather it, after they haue well & duly prepared their sacrifices and festival cheere vuder the said tree, they bring thirther two yong bullocks milk white, such as neuer drew in yoke at plough or wain, and whose heads were then and not before bound by the horn: which done, the priest araied in a surplesse or white vesture, climbeth vp into the tree, and with a golden hooke or bill cutteth it off, and they beneath receive it in a white soldiers cassock or coat of armes: then they fall to kil the beasts aforesaid for sacrifice, numbling many oraisons & praying deuoutly: that it would please God to blesse this gift of his to the good and benefit of all those to whom he had vouchsafed to give it. Now this persuasion they haue of Misselto thus gathered, That what living creatures soeuer (otherwise barren) do drink of it, will presently become fruitfull thereupon: also, that it is a soueraign countrepoison or singular remedie against all vernine. So vain and superstitious are many notions in the world, and oftentimes in such frivolous and foolish things as these.

The very tone in which the contents of the above summary is conveyed constitutes demonstrative evidence of the prominence of the position occupied by this erratic denizen of the vegetable kingdom "in the public eye" of western Europe in those centuries of pagan antiquity. Which is further emphasized by the very careful details to which he treats the reader. And the fact that it is extremely rare to find it atached to the oak ("il est extrêmement rare de le recontrer sur les chênes, et jusque" à présent on ne cite guère en France que douze ou quinze localités ou son parasitisme sur les arbres ait été constaté d'une façon certaine," in the words of the eminent botanist, Lefevre) must have conferred a special value on such specimens.

The sacred veneration which was thus accorded to the mistletoe would seem to have been a specially characteristic feature of the old Gallic version of nature worship, and very much "to the manner born" in that sunny land of evermore uneasy faith. In the learned and interesting folio of *The Antiquities of Cornwall* (Oxford, 1754) Borlase discusses the ceremonial details recorded by Pliny (as reproduced before), and gives a special quotation (from "Keysler, 305") in proof of the fact "that the footsteps of this custom still remain in some parts of France":

In Aquitania quotannis Prid. Kal. Jan. pueri atque adolescentes vicos villasque obeunt carmine stipem petentes sibi atque aliis pro voto in exordio novi anni acclamantes, Allguy, L'an neuf.

A very significant and very impressive item of testimony to the pride of place occupied by the mistletoe in the religious mind of cultured classical antiquity is also presented by the similitude to the "golden bough" of the Sibyl, as depicted by "the divine Maro" in his unique sketch of the pagan "mysteries":

Quale solet sylvis brumali frigore viscum Fronde virere nova, quod non sua seminat arbos, Et croco fœtu teretes circumdare truncos: Talis erat species auri frondentis opaca

Ilice: sic leni crepitabat bractea vento.

Æncidos, vi., 205, et seq.

And the striking macroscopic appearances which arrested the attention of the nature worshipers of classical antiquity had their counterpart in the revelation of modern microscopic observation. Thus we learn from one of the most accomplished botanists of the

last quarter of the nineteenth century; "Ce sont certaines cellules appartenant directement à vassise sous-épidermique de la face ventrale des carpelles soudés qui produisent, suivant la règle ordinaire, chacune un sac embryonnaire. Ces sacs embryonnaires sont variables en nombre et en position; un seul, parfois deux ou trois d'entre eux, arrivent à se développer complètement. Ainsi, de même que les sacs polliniques sont plongés dans le parenchyme des sépales, de même les sacs embryonnaires sont immerges dans le parenchyme des carpelles. Par là les Guis offrent l'exemple de la plus grande réduction possible de l'appareil sexuel chez les Phanérogames" (Van Tieghem, 1884). And how the germinal grain is transported and deposited in the seat of its future growth is a question which, if the truth be clearly confessed, has not even yet been finally solved-the riddle still awaits the arrival of its Œdipus!

Another factor in the genesis of the popular fame of the mistletoe was contributed by the fact that its fruit has, from time immemorial, been utilized for the preparation of birdlime. This process is also described in considerable detail by Pliny, whose account of the same was thus "Englished" by the in-

defatigable Philemon Holland:

Now as touching Birdlime, it is made of the berries of is tisseltoe, gathered in haruest time before they are ripe; for if they should tarry still to take shownes of ram, we might they thrine and increase in bignesse, but their strength and vertue would be gon clean, for euer making any such glew, or birdlime aforesaid. Being so gathered, as is beforesaid, they must be laid abroad a let to putrifie for the space of 12 daies or thereabout. This one thing yet in the whole world is the better for putrefaction, and serueth to good purpose. When this is done the said beries thus putrified and corrupt, are beaten or punned once again with mallets, in running water; by which means when they are husked and turned out of their skins, the fleshy substance within, becommeth glutinous, and will stick too, in a manner of glew. This is the way to make birdlime for to catch poore birds by their wings, entangled therewith; which foulers vse to temper and incorporate with the oile of Walnuts, when they list to set limetwigs to take foule.

Further researches into the mythologies of later dates and of remoter regions have shown that the religious veneration for the mysterious mistletoe was cultivated by other priesthoods and by tribes and nations of far different theological doctrines. The lore of this unique plant has been accorded a prominent place in the Volüspa and other Scandinavian Sagas. It was with a mistletoe branch-or an arrow therefrom prepared-that the blind and heavy headed deity Hodur aimed his deadly blow at Balder, the god of light (or benevolent principle) of northern mythology. The story is, indeed, one of the most characteristic of the whole Scandinavian system of symbolism and allegory. learn therefrom that twin sons of diametrically opposite spiritual characters and physical qualities were born to Odin and Frigga. They represented very exactly, indeed, a northern edition of the Zoroastrian conception of Ormuzd and Ahriman. Balder, the beautiful and lovable, was worshiped as the pure, and stainless, and radiant deity of light and innocence and health; while Hodur, god of darkness, was blind as the obscurity of evil and sin which he symbolized—sombre and taciturn, as denoting the gloom of the chamber of sickness, and

the silence of present sorrow and approach of impending death. From the dazzling snowy brow of the former appeared to radiate the beams of refreshing sunshine which gladdened the hearts of all beholders—both divine and human, and the source thereof was specifically indicated by the golden locks which were arranged with such asthetic perfection.

Of all the twelve 'round Odin's throne. Balder, the beautiful, alone, The sun god, good, and pure, and bright, Was loved by all, as all love light.

—Valhalla (I. C. Jones).

As might be anticipated, the infant sun god reached fully grown maturity with marvelous rapidity, and was soon admitted to membership of the Council of the Gods. He made the palace of Breidablik his domestic mansion, in which he lived in absolutely perfect conjugal bliss with his adorable young bride, Nanna (blossom), who was the daughter of the beautiful and lovable goddess Nip (bud). The silver dome of this unique mansion was supported by golden pillars; and the hygienic purity of its precincts was maintained in a degree of perfection so spotless that nothing common or unclean was ever admitted to stain any part of its hallowed precincts. And the only item of knowledge which was hidden from the radiant eyes of its tenant was the divination of his own ultimate des-The mystical runic lore was perfectly familiar to him, and the runic characters were graven on his tongue. As the god of healing, he was thoroughly versed in the virtues of simples; and one of these, the camonile, was popularly known as "Balder's brow," for its flower was distinguished by a brightness and purity corresponding to those of the brow of that deity. According to the metrical account of Matthew Arnold (Balder Dead):

. . His own house
Breidablik, on whose columns Balder graved
The enchantments that recall the dead to life.
For wise he was, and many curious arts,
Postures of runes, and healing herbs he knew;
Unhappy! but that art he did not know,
To keep his own life safe, and see the sun.

And as time passed, as change for the worse was observed in his aspect and demeanor; so that the other gods who all loved him so dearly, and who had been accustomed to see him always so radiant and happy, were greatly troubled on seeing the same. His motions became heavy and sluggish, his step lost its peculiar elasticity, a look of careworn gloom came permanently to overspread his face, and the light which used to diffuse joy and gladness all around him faded from his eyes of glorious blue. His parents were, of course, the most distressed of all by the melancholy change in their beloved son. But it was only after they had implored him long and tenderly that he communicated the secret cause of his grief. In the words of the Lay of Vegtam (Thorpe's translation):

To that god his slumber was most affecting; His auspicious dreams seemed departed.

—and so his slumbers, which had formerly been a reservoir of refreshing peacefulness and restfulness, had become a source of corroding care; as he was ever troubled by dark and oppressive dreams, the gloom of which was intensified during waking

hours by the fact that he could not recall their substance. His anxious parents became oppressed by gloomy forebodings, and took such precautionary measures as seemed advisable. Accordingly, Frigga dispatched her messengers in all directions, with plenary powers and instructions, and with the strictest charges to take no rest till they elicited a solemn vow from every creature—animal, vegetable, and mineral—that it should in no way harm Balder. As the radiant god of light was specially beloved of every creature in the universe, the requisite oath was taken by every member of creation—one only having been omitted, as a puny, trivial, inoffensive thing which could cause no harm to anything. As Sæmund's Edda (Thorpe's version) tells the story:

On a course they resolved; That they would send To every being, Assurance to solicit, Balder not to harm. All species swore Oaths to spare him; Frigga received all Their yows and compacts.

And, accordingly, the goddess-mother Frigga was thus enable to resume her spinning in great contentment of mind; as she now felt assured that no harm could possibly come to her most favored

child.

But the father of the northern sun god had in the meantime been also busy, and his anxiety took the shape of an effort to obtain and utilize supernatural knowledge. So he determined to consult one of the deceased Vala or prophetesses. this object he performed the pilgrimage which offers another of the object lessons which go to demonstrate the unity of the emotional viewpoint of humanity, in every age and locality of its recorded existence. How both extremes of the European Continent meet on this plane will be apparent to the thinking reader who has familiarized himself with the visions of Homer, and Virgil-with that of their mediæval successor Dante, and of their northern rivals in visionary inspiration. And the Sybil of Scandinavian creation was located in cosmic space, and approached by the divine (and paternally anxious) Odin in a way which suggests a blending of the theories of the poets just named with the practice of the gloomy and almost desperate King of Israel when he elected to avail himself of the powers of the witch of Endor. For he mounted his eight footed steed Steipnir, and rode across the tremulous bridge Bifrost; whence he passed along the weary road that leads to Giallar and the entrance of Niff-heim. There after passing through Helgate, and escaping the guardian dog Garm, he penetrated to the gloomy mansion of Hel, the monarch of the Scandinavian kingdom of the departed. As versified by Thomas Gray (Descent of Odin):

Uprove the king of men with speed And saddled straight his coal black steed; Down the yawning steep he rode, That leads to Hela's drear abode.

Here the divine visitor found that the Plutonic domain was richly furnished with the appurtenances of a luxury which gave him even more surprise than pleasure to observe. The couches were

richly decorated with tapestry and gold as if some specially distinguished guest were expected. The divine pilgrim was too anxious to wait to make casual inquiries, and hurried to the resting place of Vala, which had remained undisturbed for many years. Having reached it, he chanted the appropriate incantation, and traced the runic characters of which the power must be utilized in raising of the dead. As Gray continues to tell the story:

Thrice pronounc'd, in accents dread, The thrilling verse that wakes the dead: Till from out the hollow ground Slowly breath'd a sullen sound.

As usual with subterranean spirits thus called forth, the prophetess in question drew herself upwards with effective slowness of ascensional movement, and proceeded to inquire who it was that had so dared to interrupt her long repose. Odin did not feel disposed to reveal his divine identity in that very shady locality, and gave the name of Vegtam, son of Valtam, whose object was to ascertain for whom Hel was spreading her couches and preparing an elaborate feast. His worst fears were confirmed by being told in sepulchral tones that the expected guest was Balder, who was destined to be slain by his blind brother Hodur, god of darkness. Odin pressed the prophetess to reveal the name of the avenger of the murdered god-who was to have the privilege of carrying out a duty so sacred in the estimation of the Scandinavian races. He was then told that Rinda, the earth goddess, would bear a son to Odin, whose name should be Vali, and that the same would neither wash his face nor comb his hair till he had avenged the death of Balder. In the poetical version of the author last quoted:

In the caverns of the West, By Odin's fierce embrace comprest, A wondrous boy shall Rinda bear, Who ne'er shall comb his raven hair, Nor wash his visage in the stream, Nor see the sun's departing beam, Till he on Hoder's corse shall smile Flaming on the fun'ral pile.

The continued curiosity of Odin betrayed his divine identity, for when being asked "Who would refuse to weep at Balder's death?" the prophetess recognized at once that the querist was possessed of knowledge not vouchsafed to mortals. So that she at once sank back into the silence of the tomb—from which no incantation can allure her before the final crack of doom:

Hie thee hence, and boast at home, That never shall inquirer come To break my iron sleep again, Fill Lok has burst his tenfold chain; Never till substantial Night Hath reassum'd her ancient right: Till wrapt in flames, in ruin hurl'd, Sinks the fabric of the world.

With a mind depressed by the knowledge so acquired of the inexorable decree of Orlog (fate) regarding his best beloved son, Odin remounted his octopedal steed and returned, slowly and sadly to Asgard, where, on entering Glads-heim, he was somewhat restored to hopeful anticipation by hearing from Frigga that all the factors of cosmic space had promised not to harm Balder. But the gods exhilarated by knowledge of the same fact came to celebrate their "Olympic" pastimes in their

playground of Idavold, on the green plain of Ida. So effervescent was their joy at the assurance of the safety of their special favorite that they adopted a novel pastime, which was suggested by the same. They made Balder himself the target for every missile procurable, and their hilarity rose to the verge of frenzy when they found that nothing could hurt him. The uproar of laughter reached Frigga at her spinning wheel, who asked an old woman who happened to pass by the door what it was that had provoked the unprecedented outburst of divine hilarity. The reason was told by the wayfarer, who was no other than Loki in disguise; the personification of fire, who jealously hated Balder for the universal love which he inspired, and the brightness which always eclipsed his own. The goddess mother complacently mentioned the cause of Balder's safety, and the malignant Loki ascertained on closer inquiry that the mistletoe of the oak near Valhalla's gate was the sole cosmic item which had not entered into the covenant. The information gladdened the heart of the divinity of mischief, and he proceeded to utilize it the moment he had got beyond the range of Frigga's vision. He resumed his wonted form, and lost not a moment in finding the mistletoe in question, to which he was able by magic art to give unnatural size and hardness, so as to qualify it for the fashioning of a formidable arrow. When he returned to Idavold he found the blind Hodur leaning mournfully against a tree, being unable to take part in the general amusement, and having asked for the cause of his melancholy, and stimulated him by an insinuation that only a proud indifference could hold him so completely aloof from the universal amusement, he led the sightless deity into the midst of the arena, placed the mistletoe shaft in his hand, and indicated the direction in which it should be launched. A shuddering howl of terror and dismay greeted the ears of the blind and deluded deity, as Balder the beautiful fell to earth, mortally wounded by the fatal mistletoe. Thus versified by Matthew Arnold:

So on the floor lay Balder dead; and round Lay thickly strewn swords, axes, darts and spears, Which all the gods in sport had idly thrown At Balder, whom no weapon pierced or clove; But in his breast stood fixed the fatal bough Of mistetoe, which Lok, the accuser, gave To Hoder, and unwitting Hoder threw—'Gainst that alone had Balder's life no charm.

And thus was the evergreen vegetable parasite permanently associated in the Scandinavian mind with the temporary conquest of the principle of light and life by that of darkness and death! It was, accordingly, meet that it should be well in evidence at the seasonal descent into the adops of the brumal solstice.

It is of interest in this connection to note that the general opinion of the ancient herbalists, regarding the more usual deposition of the seeds of the mistletoe by the thrush, was so prevalent as to give origin to the classic proverb, which was popularly familiar in the days of Theophrastus and of Pliny: turdus sibi exitium cacat—an allusion to the fact that the thrush and blackbird were frequently caught by bird-lime. We find this proverbial phrase, indeed, recurring again and again, wherever allusions to the

mistletoe and its ways are much in evidence. And we may add that in presence of such universal recognition of the agency of healthy birds as carriers or "halfway houses" in the life pilgrimage of this our *Viscum album*, the "vulgar error," above referred to, of the widespread popular belief in the poisonous properties of the berries appears curiously inexplicable. But even the most advanced modern botany cannot truly claim to have plucked out the heart of the mystery of the germination of this curious vegetable. Boisduval tried to improve on the old classical version by announcing that the birds deposited the seeds on the branches of trees by a process of genuine vomiting! Gay and Durieu de Maissonneuve have advanced an ingenious theory -which has also been advocated by Lefèvre: "Les oiseaux, après avoir saisi les baies et en avoir avalé la pulpe, cherchent, en frottant leur bec contre les branches des arbres, à se débarrasser des graines ainsi que de la substance visqueuse qui y restent attachées: d'où résulte la fixation d'un grand nombre de graines à la surface des rameaux." The mistletoe, abounding as it does in France, has received special attention from the agriculturists as well as the botanists of that country. The botanical authority last named tells us that, however deposited, the mistletoe seed (graine du Gui) "présente cette particularité remarquable que la radicule, au lieu d'être dirigée par la pesanteur suivant la verticale, n'est sensible qu' à la lumiere; elle s'enfonce dans la branche, dequelque côte que la graine y ait été deposée, et toujours du côté le moins éclairé."

The same authority tells us that the farmers of the Vosges attach great value to the mistletoe of Abies excelsa and A. pectinata, in the fattening of their cattle and pigs. He also states that in other parts of France the mistletoe is given to cows for the purpose of increasing the production of milk.

There can be no doubt the very peculiar appearance and life-history of this remarkable plant were quite remarkable enough to secure for it the curious attention of the learned, as well as of the illiterate. in the prescientific ages throughout which imagination held the reins of thought. Its garb of persistent green presents a striking appearance amid the wintry nakedness of the surrounding forest trees. and the ripening of its juicy berries at a season in which all exuberant sap of the other members of the vegetable kingdom appears to have retreated to mother earth would account for a suggestion of supernatural generative agency. Even that great and worthy pioneer of modern English botany, the quaint John Gerrard, although he mentions the agency so often assigned to the thrush in the genesis of this vegetable parasite, gives precedence to the account that "this excrescence hath not any root. neither doth encrease himselfe of his seed, as some haue supposed; but it rather commeth of a certaine moisture and substance gathered together vpon the boughes and ioints of the trees, through the barke whereof this vaporous moisture proceeding bring-eth forth the Misseltoe." And the same respectable authority, although not insinuating "all healing" faith in the therapeutic powers of this plant, treats with great respect "The Temperature and Virtues" thereof—as follows:

"The leaves and berries of Misseltoe are hot and dray,

and of subtill parts: the Bird-lime is hot and biting, and consists of an airy and waterie substance, with some earthy qualitie; for according to the judgment of Galen, his acrimony ouercommeth his bitternesse; for if it be vsed in outward applications it draweth humors from the deepest or most secret parts of the body, spreading and dispersing them abroad, and digesting them.

KNOTT: MISTLETOE.

It ripeneth swellings in the groine, hard swellings behinde the eares, and other impostumes, being tempered with rosin

and a little quantitie of wax

With Frankincense it mollifieth old vicers and malicious impostumes, being boyled with vnslaked lime, or with Gagate lapide, or Asio, and applied, it wasteth away the hardnes of the Spleene.

With Orpiment or Sandaraca it taketh away foule ill

favored nailes, being mixed with vnslaked lime and wine

lees it receiveth greater force.

It hath been most credibly reported vnto me, that a few of the berries of Misseltoe bruised and strained into Oyle, and drunken, hath presently and forthwith rid a grieuous and sore stitch.

This author distinctly attributes poisonous properties to the birdlime obtained from mistletoe, "which because it is sharpe and biting, inflameth and setteth the tongue on fire, and with his slimie and clammie substance doth so draw together, shut, and glue vp the guts, as that theer is no passage for the excrements. Corresponding powers of mischief had been attributed to Ixia by Nicander, Dioscorides, and Paulus Ægineta-as well as by the crowd of writers who copied them—but the exact connotation of "Ixia" ever remained disputable. And the poisonous property attributed to birdlime by Gerard, is confidently denied by his editor, Johnson, who also refers to its "being frequently vsed in medicines against the Epilepsie.

The therapeutic reputation of the mistletoe continued to flourish in the Middle Ages, and we find Paracelsus, the thundering therapeutic iconoclast of the Renaissance, as furiously emphatic in his laudation of its use in epilepsy as he was in his general denunciation of the theories and practices of the recognized classical "authorities—"infallibly" estimated as they were by nearly all practitioners at

that date.

The encyclopædic English botanist and herbalist, John Parkinson—whose name is dear to bibliophiles as the author of the famous Paradisus in Sole-collected into the pages of his Theatrum Botanicum a characteristically exhaustive summary of the existing state of knowledge (and gossip) of the science and lore of the mistletoe at the date of the publication of that volume (1640). The following extracts may, perhaps, repay the attention of the curious reader, even in the twentieth century. He thus deals with "The Names"

It is called in Greek 1505 by Dioscorides, and so is the Birdlime made thereof also, and little by Theophrastus who saith also that in Eubaa it is called Stelis, and in Arwho sailt also that in Eucoda it is called Steak, and in Art-cadia, Hyphcar yet lib. 3, c, 16, of his History, he saith that Stelis groweth on the North Side of the Ilex, and Hyphcar on the South, and so they differed from one another in some thing which he hath no where exprest, in Latine Viscus and Viscum, and so also the birdlime made of the berries, as are all these sorts called by all writers, that have written either of the two last, since Lobel, with their severall adjunctes. The Arabians call it Debach, Dabuch, and Hale, the Italians Vischio, the Spaniards Liga Merda. All the Irania Mischen with Irania Mischen Mischen Mischellen, the Dutch, Marcutacken, and we in English Mischellen. English Missellto.

This highly receptive authority is found to reject the time honored notion of the deposition of the mistletoe seeds by birds:

It is since found by experience, that there is no shew of seed in that dung, they voyde upon the trees or elsewhere, being wholly altered in their bellies before the voyding, and further that Missellto groweth on trees from their own superfluous moysture, which made Ion the poet to call it Sudor quercus, even as Galles doe and Oke Apples from other sort of Okes, and haue no seede of their owne, and to this purpose Virgil Sexto Aineido saith:

Quale solet sylvis brumali frigore, Viscum Fronde virere nova, quod non sua seminat arbos.

Parkinson's account of the therapeutics of the mistletoe (and its birdlime) furnishes striking testimony to the persistence of popular opinion on subjects which furnished material for the construction of leading articles of faith to the pastors of the multitudes in pre-Christian ages. It is as follows:

Missellto is hot and dry in the third degree, the leaves and berryes doe heate and dry, and are of subtill parts, for some acrimony is in them, which ouercommeth the bitternesse, the Birdlime doth mollifie hard knots, tumours and imposthumes, ripeneth and discusseth them, and draweth forth thicke as well as thinne humours, from the remote places of the body, digesting and separating them: but is not of that property to heate suddainely, but after some time as Thapsia doth, and being mixed with equal parts of time as Indexia doth, and being inject with equal parts of Rossin and waxe doth mollefie the hardnesse of the spieene, and healeth old ulcers and sores; being mixed with Sandarack and Ortment, helpeth to draw of foul nailes, and if quicke lime and Wine lees be added thereunto it worketh the stronger. The Missellto it selfe of the Oke as the best, (or of the Chestnut tree as Matthiolus saith to be as good) made into pouther, and given in drinke unto those that haue the falling sickenesse, doth heale them as Matthiolus saith, and that he had tryed it and healed many assuredly: but it is fit to use it forty dayes together: and with this caution, that the wood after it is broken from the tree, doe not touch the ground, which is in my minde too superstitious, as is their conceit also, that it hath power against Witchcraft, and the illusion of Sathan, and for that purpose, use to hang a peece thereof at their childrens neckes: Gentiles Fulginas and others haue so highly esteemed of the vertues hereof, that they have called it Lignum sanctæ crucis, beleeving it to helpe the falling sicknesse, Apoplexy, and Palsie very speedily, not onely to be inwardly taken, but to be hung at their neckes, and some to inwardly taken, but to be hung at their neckes, and some to hang it at their neckes, or weare it on their arme to helpe them to conceive: and saith Matthiolus I have knowne ignorant emperickes, to haue giuen the Birdlime made into pilles to persons to swallow insteade of the wood: and further saith that he knew the Missellto that grew on a Pearetree, given to one that had the parts of his body drawne together, to doe him much good and divers doe esteeme of the Missellto that groweth on Hassell nuts, or Peares, as effectuall as that on the Oke so it touch not the account for effectuall as that on the Oke, so it touch not the ground, for the falling sicknesse, to be taken in Wine. *Tragus* saith that the fresh wood of any Missellto bruised, and the juyce drawne forth, and dropped into our eares that haue Imposthumes in them, doth helpe and ease them within a few dayes; the leaves are often given to cattell saith Pliny, to fatten them and purge them first: but if they be diseased they cannot continue long, this manner of curing them lasteth for forty dayes in Summer.

In his New London Dispensatory (1676 and 1684-5) the very learned and very voluble herbalist, William Salmon, devotes two paragraphs of Lib. I (of Herbs) to a discussion of the mistletoe. They are as follows:

Viscum, Viscus, Ixia Rencalmi, 'Ιξός καὶ ἰξία, Missel-Viscum, Viscum, Viscus, Ixia Rendami, 1208 xati 1203, Misseltoe, hot and dry in 3°. It is of subtil parts, and good against most of the diseases of the Head and Spleen: The Berries strained into Oyl or Wine, and drunk, help stitches, and other pains of the sides: It purgeth viscous Humours, helps Palsies and Convulsions, is Hydrotick and Antepileptic: Outwardly, it ripens swellings and scirphous Tumours behind the Ears, drawing from the deeper parts of the hody, and directing the humours: it molliest parts of the body, and digesting the humours: it mollifies old Ulcers, and ripens angry Imposthumes.

Viscum Quercinum, Misseltoe, hot and dry in 2°. It mollifies and discusses; ripens Tumour behind the Ears, and other Imposthumes mixed with Wax and Rosin. Inwardly it is a specifick in the Epilepsie, and certainly cures it, by giving as much as will lie upon a six pence or nine for some days near the full Moon.

The "Vulgar Errours" which the annals of natural history had ever associated with the life history and the qualities of the mistletoe have-inevitably-had their turn of the critical attentions of the author of the Pseudodoxia Epidemica. He tells his readers of the "creed of the Ancients" regarding the growth of the "Viscus Arboreus"; "from seeds which birds, especially Thrushes and Ringdoves, let fall," and refers to the testimony of Pliny and of Virgil. He then proceeds:

If so, some reason must be assigned, why it groweth onely upon certaine trees, and not upon many whereon these birds do light. For as Exotick observers deliver, it these birds do light. For as Exotick observers deliver, it groweth upon Almond trees, Chestnut, Apples, Oakes, and Pine trees, as wee observe in England, very commonly upon Apple, Holly, Bayes, Crabs, and White Thorne, sometimes upon Sallow, Hasell and Oke, never upon Bayes, Holly (sic!), Ashes, Eline, and many others. Why it groweth not in all countries and places where these birds are found, the contract of the countries and places where these birds are found, and the countries and places where these birds are found, and the countries and places where these birds are found, and the countries are considered. not in all countries and places where these birds are found, for so Brassavolus affirmeth, it is not to be found in the territorie of Ferrara, and was faine to supply himselfe from other parts of Italy. Why if it ariseth from a seed, if sowne it will not grow againe, as Pliny affirmeth, and as by setting the berryes thereof, wee have in vaine attempted its production; why if it commeth from seed that falleth upon the tree, it groweth often downewards and puts forth under the bough, where seed can neither fall nor yet remaine. Hereof beside some others, the Lord Verulam hath taken And they surely speake probably who make it an arboreous excrescence, or rather superplant, bred of a viscous and superfluous sappe the tree itselfe cannot assimilate, and therefore sprouteth not forth in boughs and surcles of the same shape and similarly unto the tree that beareth it, but in a different forme, and secondary unto its provided intention of the same shape and similarly unto the tree that beareth it, but in a different forme, and secondary unto its provided intention of the same shape and the same shape sha specificall intention, wherein once fayling, another forme succeedeth and in the first place that of Misseltoe, in plants and trees disposed to its production. And therefore also wherever it groweth it is of constant shape, and maintaineth a regular figure like other supercrescences, and such as living upon the stalk of others, are termed Parasiticall plants, as Polypody, Mosse, the smaller Capillaries, and

Now whatever this conceit, it might be the enlargement of that part of truth contained in the story. For certaine it is, that some birdes doe feed upon the berries of this vegetable, and we meet in Aristotle with one kind of thrush called iξoβόρος, the missell thrush or feeder upon misseltoe. But that which hath most promoted it, is a received proverb, Turdus sibi malum cacat, Applicable unto such men as are authors of their owne misfortune. For according unto ancient tradition and Plinie's relation, the bird not being able to digest the fruit whereon shee feedeth, from her inconverted meeting, ariseth this plant, of the berries whereof birdlime is made, wherewith she is after entangled. Now although proverbs bee popular principles, yet is not all true that is proverbiall; and in many thereof there being one thing delivered, and another intended, though the verball expression be false, the proverbe is true

enough in the veritie of its intention.

We find also that the mediæval opinions regarding sundry supernatural agencies which were so obstinately cherished by Sir Thomas Browne to the end of his life did not include some properties of such quality which had been attached by popular opinion to the mistletoe:

As for the Magicall vertues in this plant, and conceived efficacie unto beneficiall intentions, it seemeth unto me a Pagan relique derived from the ancient Druides, the great admirers of the Oake, especially the Misseltoe that grew the vertue whereof was to resist all poysons, and to make fruitful any that used it. Vertues not expected from Classical practice. And did they answer their promise which are so commended in Epileptical intentions, wee would abate these qualities. Countrey practise hath added another to provoke the after-birth, and in that case the decoction is given unto Cowes. That the berries are poison, as some conceive, we are so far from averring, that we have safely given them inwardly, and can confirme the experiment of Brassavolus, that they have some purgative

Such is Sir Thomas Browne's account of the opinions held by the "learned Vulgar" regarding the mistletoe in the year of grace 1646—the date of the first edition of his wonderful Pseudodoxia Epidemica. And it is worthy of note that in the last edition (sixth) of the same work that was issued in the author's lifetime, after an interval of thirty-six years, there is no notable change in the text of the paragraphs which deal with the subject of this unique plant. Indeed, he merely omits the Bayes and Holly from the list of hosts, in which they had been placed by an obvious slip of the pen, and rejects the former from that of the non-hosts also.

The great Medical Dictionary of Dr. James appeared in 1745. The expert in medical literature will recall the fact, on observing the name, that the author was the inventor of the famous antimonial "fever powder," which has been credited—among the many more creditable, if less conspicuous, items of its achievement—with having promoted the dis-solution of the most famous of Ireland's medical men. And the expert in literary history will remember that the preface to this series of massive folios was written by the great English lexicographer, the design of whose epoch making Dictionary of the English language is said to have been originally suggested by that of the medical lexicon to which it is believed that he contributed very largely. Accordingly, it is specially interesting to contrast the views of the great medical friend of Oliver Goldsmith and of Samuel Johnson with those by William Salmon and by Sir Thomas Browne, almost exactly a century before:

Misseltoe is accounted a cephalic and nervine Medicine, missence is accounted a cephane and nervine Medicine, particularly useful for all kinds of Convulsion-fits, for the Apoplexy. Palsy, and Vertigo; for which purposes, some prefer the Misseltoe of the Hasel to that of the Oak. Birdline is a powerful Attractive, and good to ripen hard Tumors and Swellings; It is an Ingredient in the Emplastrum Dischalm Magnetic Diachylon Magnum.

And further:

It has the virtue of mollifying and discussing Tumors, It has the virtue of monifying and discussing running, the Parotides and Abscesses, being mixed with Rosin, and an equal quantity of Wax; it also cures the Epinycitides, and, as Pliny says, dries up strumous Ulcers, and cures the Epilepsy. . . . The Wood is of principal and specifick Use in the Epilepsy; it is, also, prescribed for the Apoplexy and Vertigo, taken inwardly, or hung about the Neck: For these disorders it is acknowledged to be effectual, by the unanimous consent of ancient and modern Physicians. We know some, says I. Bauhine, who have made use of the Wood of Viscum, macerated in Wine, with success, against the Vertigo. The Powder of Viscum, especially what grows upon Oaks, not only cures the Epilepsy, but provokes the Menses. It is, also, an Arcanium against a Pleurisy, being taken once and again, and a third time, in Water of Cardures and Poppy.

J. Bauhine writes, that he has several times advised the use of Viscum, bruised and macerated in proper Waters, against the Worms of the Intestines in Children.

The Powder of the Viscum which grows on the Oxyacan-thus, being infused in White or Spanish Wine, and given two Hours before the Paroxysm or Fit, and the dose repeated, if necessary, has often removed, and perfectly cured, a Quartan.

The leaves, after they have been chewed and pounded by the Teeth of laboring Beasts, and Cows, are, by our rustic People esteemed effectual for expelling the Secundines.

The extracts contained in the rather congested

series of quotations collected in the above paragraphs offer a remarkable, and, I hope, fairly interesting example of the persistence, down through tens of centuries, of medical faith in the efficacy of a therapeutic agent of which the claims have been utterly discounted in the light of modern science. There seems to be but small prospect, indeed, of the future restoration of the mistletoe to the all healing position which was so loyally and devoutly accorded to it by our ancestors. Still we find, nevertheless, that recent reports prove that its therapeutic celebrity has not quite died out. It appears to be still used, in parts of England, as a popular remedy in cases of cardiac trouble. And, like the strophanthus of African arrow poison fame, it has actually been held to represent a reliable substitute for digitalis!

The prominence of the somewhat uncanny vegetable growth in the household decorations which accompany our Christmas festivities is probably due, like that of the ivy, to its comparatively succulent and suggestively productive aspect at this season of generally suppressed vegetation. The peculiar social ceremony of salutation which is so usually connected with the elevation of the mistletoe within the homes of Yuletide festivity, is one which the old fashioned practitioner would probably, I believe, not wish to see abolished. But such questions will probably be largely, if not exclusively, decided in the future decades of our century by the domestic legislation of the "New" Women, and the Parliamentary control of the suffragettes. The great majority of our adolescents at present date will, nevertheless. I venture to think, agree with the sentiments expressed in the quaint old doggerel stanza:

> "Of all the games, both rich and rare, There is a game none can compare; And that sweet game, as all you know, Is kissing 'neath the Mistletoe."

The supraosculatory position which the mistletoe has so long maintained in the minds of the youth of both sexes will probably tend to prolong its celebrity beyond that which future generations may be disposed to grant to its therapeutic properties. And as our twentieth century has hitherto proved so richly productive of medical Jeremiads on the subject of "race suicide," perhaps the suggestions offered by the presence of the overhead Viscum album, at a season specially associated with demonstrations of family affection, should not be too severely criticised as a mere relic of mingled pagan superstition and social frivolity.

34 YORK STREET.

IS NOT THE TUBERCLE BACILLUS THE CAUSE OF CANCER?

By Thomas G. McConkey, M. D., San Francisco, Cal.

Previous to Koch's discovery in 1882 the striking analogies between tuberculosis and cancer had been noted by the older writers and caused them to institute comparisons between them. But since that discovery, in spite of the search for a cause of cancer, no one that I am aware of has hitherto tried to prove that the tubercle bacillus is also the cause of cancer. After months of investigation with this hypothesis as a guide I am convinced that the tu-

bercle bacillus by virtue of its well known effect of causing cell proliferation is the fundamental cause of malignant growths. In the young and robust this cell proliferation is usually checked by a defensive reaction in the form of an exudate of lymph and lymph cells which hedges in the new growth and a tubercle is the result. But if this cell proliferation is set up in one whose defensive reaction is inadequate to hedge it in a malignant growth is the result.

This theory is based not on speculative assumptions, but well authenticated facts. First let us recall the salient facts in the histogenesis of tubercle. Councilman says: "Virchow supposed that it always formed in connective tissue by a multiplication of the cells of this tissue. It is certain, however, that no one tissue enters solely into its formation, but all the cells of the tissue, whether connective tissue corpuscles, gland cells, or the endothelium of bloodvessels and lymph vessels, take part in it." Baumgarten found that the first changes in the tissue were coincident with the appearance of the bacilli. Under their influence the fixed cells, whether gland cells, endothelial cells of bloodvessels and lymph vessels, or connective tissue cells, became enlarged. pale, and finely granular, and changed into the epithelioid cells. The earliest and smallest tubercles simply represent a collection of these epithelioid Among these epithelioid cells, which are quite closely arranged in concentric layers, numbers of lymphoid cells are found, especially in the outer portion of the nodule. A network of fibrin filaments support these lymphoid cells and also permeate the nodule. The so called "giant cells" are also seen in the majority of tubercles. The first visible sign of the presence of the bacilli is the proliferation of the epithelioid cells, and Baumgarten holds that the primary effect of the tubercle bacillus is to cause the growth of tissue by the formative stimulus which it exerts. More or less promptly a defensive reaction against this new growth in the form of an exudate of lymph and lymph cells occurs. The lymph is rich in fibrinogen and the lymph cells furnish the "fibrin factors" or "plasmmane which causes coagulation of fibrin," and this seems to be the source of the fibrillar network permeating and encapsulating the nodule. The best explanation of the "giant cells" is that they are cross sections of lymph vessels or spaces, and the "nuclei" are lymph cells caught in the lymph clot. Hektoen, though regarding the giant cell as an entity, looks upon it as a defensive agent. Theobald Smith regards the tubercle itself "as a mechanism of defense for the body, even though imperfect." structure of the tubercle, he says, interferes with the further dissemination of the bacilli by clogging the channels of escape. As a mechanism of defense is it not rather for the purpose of hedging in the proliferating focus by clogging the channels of escape and shutting off the blood supply? Bacilli are rather fought by phagocytosis. Smith believes the tubercle is a mechanism of defense for the bacillus-a mutual product, as it were. I would incline to the view that it incidentally serves the interests of the bacillus by protecting from phagocytosis and permitting it to exist in a latent state for years.

Virchow regarded the tubercle as a lymphoma, and as a heteroplastic growth it had "the prejudice of malignity." But in comparison with cancer and sarcoma "tubercle, on the other hand, is always a pitiful production, a new formation from its very outset miserable. From its very commencement it is, like other new formations, not infrequently pervaded by vessels, but when it enlarges, its many little cells throng so closely together that the vessels gradually become completely impervious. chow says that the older writers were wont to draw parallels between cancer and tubercle and that tubercle was "regarded as an incomplete and somewhat crude product and as a structure which had never become properly organized." We now know that as a new formation it is a miserable product because of the prompt reaction, which strangles its further growth.

In anticipation of the obvious objection that if the tubercle bacillus is the cause of cancer it is inconceivable that it would have thus far escaped detection I shall cite authoritative evidence which shows that the bacilli can originate lesions which give no microscopic evidence of their causation; that even in the most typical tuberculous lesions it is frequently impossible to demonstrate a single bacillus by the ordinary methods; that not only are inoculation experiments not contradictory, but are even best explained by this theory; that the tuberculous and cancerous processes are frequently found not only in the same patient, but in the same growth: that caseation which is so characteristic of tuberculosis is also found in cancer; that conditions formerly called cancer are now known to be tuber-

The following is abbreviated from Councilman: The lodgement of tubercle bacilli in the tissues is not, however, always followed by the formation of definite tubercles alone. Frequently, especially on free surfaces, the formation of abundant granulation tissue is associated with such tubercles. tissue is highly vascular, but despite the vascularity caseation occurs as in tubercle owing to the bacilli. When the process is slow, contraction and induration may result in a hard, firm, scarlike tissue, which may escape necrosis and microscopically show no indication of its tuberculous nature. Councilman also says that the bacilli "are probably more difficult to find in miliary tubercles than in any other of the tuberculous processes." And again: "In parts that have undergone complete caseation it is often extremely difficult to demonstrate the bacilli. This is especially the case in old caseous lymph glands. Often twenty or thirty sections will have to be examined before a single bacillus is found. They are seldom in groups, but only here and there one is found, and unless it lies parallel to the plane of section it is easily overlooked." Hans Much, quoted by von Behring, says "a remarkable fact that has been known for some time, but the significance of which has not been fully appreciated, is that, in the lungs of tuberculous cattle, though they are crowded with tubercles, it is frequently impossible to demonstrate a single tubercle bacillus by the ordinary methods. The same is true of the so called cold abscesses occurring in man."

In view of such facts as the foregoing would it

not be remarkable if bacilli had been found in malignant growths, especially when this theory only presupposes a minute focus where they might possibly be discovered? When we remember that they have not been looked for it would indeed be remarkable if they had been found. What better explanation of those "concentric nests" so frequently found in cancer and called "cancer nests," "bird's nests, etc., and for which there is no satisfactory explanation than that they are cross sections of old tubercles? Even a superficial examination of the results of cancer inoculation experiments reveals a surprising number showing "miliary nodules," especially in the lungs and serous membranes. Curiously enough, the age of the animals experimented on did not seem to be thought of sufficient import to be even mentioned by most of the experimenters. Now there is an age incidence in cancer in the lower animals corresponding to that in man, and doubtless if old animals had been inoculated instead of miliary nodules genuine cancers would have re-For whether these miliary nodules were sulted. caused by bacilli or were simply the result of transplanted proliferating cells, as is more likely, there was an exudative reaction which checked their further development. Space permits mention of but three sample experiments: Lebert and Toller injected an emulsion of mammary carcinoma into the jugular vein of a dog, and fourteen days later found some nodules on the pericardium. rapidity with which the secondary growth occurred was against its cancerous nature" was the comment, but would this exclude its tuberculous nature? Plimmer's inoculations in one series of animals "caused death in thirteen to twenty days with the production of small nodules consisting of the proliferating endothelial cells in the serous membranes and in the lungs." Plimmer concludes from his experiments "that certain undoubted parasitic intracellular bodies occur in carcinomata that can be cultivated outside the body." Would not the tubercle bacilli answer this description? Lanz by inoculation of cancer material produced a "group of warts in the form of a letter 'J' upon the back of his gardener's hand." Is not this analogous to the verruca necrogenica of Wilks or post mortem warts, which we know to be tuberculous? Park quotes this question from Behla: "When it is so easy to transmit cancer from one animal to another, why should it be so hard to discover its real cause?" and comments that that is truly an as yet unanswerable question. Is not the answer to this clear in the light of this theory? In transmitting cancer from one animal to another the experimenter has simply transplanted cells with the malignant habit of proliferation and the process is analogous to metastasis. There is only a very remote possibility of accidentally inoculating the bacilli that originally caused the cells to take on the vicious habit of multiplying in an unlimited manner.

Cancer and tuberculosis were regarded as antagonistic, but it has been shown that the age incidence and the localization of the two conditions are so different that any apparent antagonism is easily explained. Schwalbe has reported three cases of cancer developing in the wall of a tuberculous cavity, and Claude thinks that tuberculosis is not un-

common in cancerous deposits (Osler's Modern Medicine, iii, p. 325). Fistula in ano, which is thought to be always tuberculous in origin, not infrequently is the forerunner of cancer of the rectum. Orlovski collected 59,175 autopsy reports, 114 of which showed cancer of the lung, or 0.19 per cent., and he adds: "The tubercle bacilli may be found in the sputum of patients with cancer of the lung, as tuberculosis quite frequently coexists with cancer of the lung, as ruberculosis quite frequently coexists with cancer of the lung, says: "In the diffuse cancerous growth the condition may resemble a tuberculous pneumonia." I recall an autopsy on an old man with gastric cancer. The experienced pathologist of the large hospital was enthusiastic on opening the thorax to find, as he thought, the rare condition of cancer of the lung also, but microscopical examination revealed bacilli, and the diagnosis had to be revised accordingly.

As to caseation which is so characteristic of tubeculosis, Virchow said that "the cheesy transformation is the regular termination of tubercle, but, on the other hand, it is not the necessary one, inasmuch as there are cases, in which the tubercles, in consequence of their undergoing a complete fatty metamorphosis, become capable of reabsorption; and, on the other hand, the same cheesy metamorphosis befalls other kinds of new formations; for pus may become cheesy and likewise cancer and sarcoma. . . . In the midst of cancerous masses cheesy spots occur which look exactly like tubercles." Councilman says: "Retrogressive changes are common in carcinoma. As we have said, the juice obtained by scraping the surface always contains cells in a greater or less degree of fatty degeneration and some which are entirely broken down. . . . In other cases a condition very similar to tuberculous caseation is met with. stated before, Virchow regarded the tubercle as a lymphoma, but with the prejudice of malignity, and he placed the pearly nodules in bovine tuberculosis among the sarcomata. Lupus, which was formerly placed with the cancers, is now placed with the tu-berculous lesions. It is such facts as these that compel the conviction that there is a relationship between cancer and tuberculosis that cannot be explained by mere coincidence, but which is perfectly explained by regarding them both as manifestations of one and the same infection.

The opponents of the parasitic theory assert that it fails to account for different tumors, the mixed growths, the occurrence of different tumors in the same individual, etc. On the contrary, the present theory furnishes a probable explanation which cannot be said of any other theory. Virchow's classification of tumors was based upon the fact that every "pathological structure has a physiological prototype." He ridiculed the idea of a specific cancer cell and classified new formations upon exactly the same plan he had ventured upon for the physiological tissues. In his Croonian lecture (1803) he said: "I blocked forever the last loophole of the opponents, the doctrine of the specific cells of pathology, by showing that even diseased life produced no cell for which types and ancestors were not forthcoming in normal life. These are the fundamental principles of cellular pathology."

Manifestly the particular type or types of cells found in malignant growths is not determined by the morbific agency, whatever it may be, but by the physiological type that has acquired the tendency to multiply instead of functioning. The structure is a matter of local accident, but the tendency to undergo unlimited proliferation is the real puzzle and the very essence of the cancer question.

All malignant growths have this in common, and not only would a single cause be competent to produce this one effect, but it is improbable that more than one cause could produce such a uniform effect. It is unthinkable that the numerous varieties of carcinomata and sarcomata and the mixed forms have separate causes. Roswell Park puts it thus: "It is characteristic of cancer that its variety is very great, which is to be explained in some other way than by direct implantation of a carcinoma cell or by the preposterous statement that any somatic cell, by any intrinsic stimulus, can possibly develop de novo a specific disease such as cancer. We might as well be told that tuberculosis is due to the agency of an intrinsic stimulus." And that was actually the prevailing view regarding tuberculosis as late as 1878, in spite of Villemin's experiments in 1865, which showed its infectious nature. The very name was given it by Schoenlein in 1839, who was a disbeliever in its specific nature. Klebs considered tuberculosis an unfortunate term, and said it "is the cause of the obscurity which has so long enveloped the disease.'

Various theories to account for the unlimited proliferation of cells which constitutes the malignant quality of tumors have been promulgated. But neither the "embryonal rests" of Durante and Cohnheim nor Ribbert's "misplaced cells" are adequate to account for malignant growths, though explaining benign tumors as dermoid cysts. The recent report of the Imperial Cancer Research Fund "destroys all known theories of cancer, formulating, however, no new theory." It is common knowledge that tubercle bacilli cause cell proliferation, but I am not aware that there is any accepted theory as to how it does this. And while it may seem like an attempt to explain the inexplicable, I wish to suggest one: Whether a cell functionates or merely reproduces itself rests with the nucleus. The single nucleus of the metazoan cell is a complex structure "arising from fusion of chromatic substances which in the lower forms appear more of less independent of one another. Should, during a degeneration, an unequal loss of nuclear substance and chromatin occur in such fashion as to retain certain parts of it which are intimately connected with certain functions, while others succumb, it would necessarily allow the remaining portions to control the future of the cell" (Oertel, New York Medical Journal, lxxxvi, No. 1). Would not the primitive and dominant function of reproduction survive longer than the later acquired functions of specialization? The nucleus and its chromatin are rich in phosphorus. The bacilli require for their growth "suitable pabulum containing assimilable nitrogen and phosphorus." The nucleins comprise a special group of readily decomposed complex proteids containing phosphoric acid and form the chromatin substance of the cell nucleus

(whence the name), as well as the tangible constituents of the cell body and have a strongly acid character. A notable peculiarity about culture media for the tubercle bacilli is the high degree of acidity due to acid salts which is favorable for their growth. Nuclein has been extracted from tubercle bacilli and the decomposition of this sets free "nucleic acid or tuberculinic acid" containing from nine per cent. to eleven per cent. of phosphorus. The bacilli are found in the cells lying near the What agent other than the tubercle nucleus. bacilli could so well destroy the chemical integrity of the nucleus and bring about that "unequal loss of nuclear substance and chromatin" resulting in the loss of certain functions and allowing "the remaining portions to control the future of the cell?" Whether the facts given suggest the true explanation or not is of no great importance, but the fact that tubercle bacilli do set up cell proliferation, whether connective tissue, epithelial, or endothelial, in which they find lodgement, is of compelling significance in furnishing the solution of the cancer

problem. This theory of the ætiology of cancer is equally satisfactory when examined from the clinical side. Ballunce and Shattuck, quoted by Coley, go so far as to say that "there is no fact in the ætiology or life history of carcinoma or sarcoma that has not its counterpart in tuberculosis, and thus illustrate how near we may be to a great generalization and yet just miss it. Space will permit mention only of a few of the analogies: Both are hereditary in the sense of showing a family predisposition; both show an age incidence; both purely local at first; both may become general; both may result from trauma; both found not only in man, but in other vertebrates; both have location incidence in certain tissues; both show difference in appearance and structure, depending on tissue affected; both may have as predisposing cause depressing influences, as worry, grief, etc.; both have wasting and cachexia; both have race incidence; both have house and district incidence. These striking analogies are plain if we consider the conditions as different manifestations of one infectious agent, and the apparent antagonisms are also thus satisfactorily accounted for. Williams (Edinburgh Medical Journal, 1898, No. 10) found at autopsies old or arrested phthisical foci three times as often in cancerous as in other subjects, and concluded "that malignant disease seemed to exercise a retarding influence on pulmonary tuberculosis." We may accept his findings, but not his inference, for the findings prove rather that these persons in early life resisted the pulmonary form of tuberculosis only to succumb in later life to the cancerous form. The location incidence is very significant in the light of this theory: Tuberculosis of the lungs, pleura, and liver, for example, is very common, but primary cancer of the lungs, pleura, and liver is very rare. On the other hand, cancer of the mammary glands, stomach, and os uteri, for example, is very common, but tuberculosis of the mammary glands, stomach, and os uteri is very rare. Better diagnostic methods prove that tuberculosis of these organs is actually more frequent than formerly supposed, and we are told that tuberculosis of the os, for instance, "presents great

difficulties in diagnosis on account of the resem-

blance to carcinomatous growths. The age incidence of the two (?) diseases is most eloquent testimony to the soundness of this theory. Tuberculosis is essentially a disease of the first half of life and cancer of the last half of life. much as the lymphatic, meningeal, bone, and joint forms predominate in childhood and the pulmonary form in early adult life analogy would predicate some dominant manifestations in later adult In accord with this theory cancer is the predominant manifestation of tuberculous infection in advanced life exactly as scrofula is during childhood. Scrofula was considered a disease entity until proved to be a phase of tuberculosis. I believe we may safely assert whether tubercles or caucerous growths result lies with the efficiency or inefficiency of the lymphatic system to hedge in the proliferating focus. Physiologists tell us that "in adult and advanced life the glands (lymphatic) are usually somewhat atrophicd and darker in color.' The so called epithelioid cells we know may originate from either epithelial or connective tissue cells. and their appearance is the result of pressure and degenerative changes going on within the tubercle, but if there were no pressure or degenerative changes they would then show their origin by the type of cell dominating, as in malignant growth. Hence the varieties of cancer. It is self evident if this theory is correct that the more persons who survive the earlier forms of tuberculosis the more there will be left to succumb to the later forms. A decrease of mortality from pulmonary tuberculosis would predicate an increase in cancer mortality. For the State of New York the following figures are given by Park:

 IS87
 IS88
 1907

 Deaths from tuberculosis.
 11,009
 12,552
 13,000 (about)

 Deaths from cancer.
 2,363
 4,456
 7,000 (about)

This shows an increase in twenty years of eleven per cent. in tuberculosis and one hundred and ninety-six per cent. in cancer. The increase in population in the State from 1890 to 1900 was twenty-one per cent., and for twenty years would presumably be about forty-two per cent. In San Francisco the number of deaths from cancer in 1866 was at the rate of 16.5 in 100,000, while in 1898 it had risen to 103.6 in 100,000, or more than six times as many For the year ending June 30, 1908, there were 460 deaths from cancer, or a rate of 108.2 in 100,000, taking the board of health's estimate of the population as 425,000. For the same year there were 729 deaths from pulmonary tuberculosis, or a rate of 171.5 in 100,000. This indicates a low tuberculosis mortality, but a corresponding high cancer mortality.

Powers (Practitioner, 1899) says there seems tobe some relationship between malaria and cancer, which in many parts of the world makes them occur in inverse ratio to each other. This theory would account for this curious fact thus: Malaria directly predisposes to pulmonary tuberculosis, hence a corresponding low cancer mortality, because of the high phthisis mortality.

Bainbridge, in a review of recent cancer research, concludes thus: In addition to race, climate, to-

pography, age, and sex, the following factors seem to be more or less involved as predisposing causes of cancer: Heredity, cicatrices, traumatism, chronic irritation, and malnutrition. Taking these up seriatim we find that cancer is very rare in the negro Their susceptibility to pulmonary tuberculosis furnishes the explanation. But cancer is becoming more frequent among them, which is to be explained by their growing resistance to the pulmonary form. Climate and topography affect cancer incidence by their effect on pulmonary tuberculosis. As to age, as already stated, cancer is the predominant manifestation of tuberculosis during advanced life as scrofula is during childhood. Sex as a factor may be explained in the fact that the mammary gland and uterus are very susceptible to the cancerous process either by reason of anatomical structure or liability to traumatism, especially the uterus. Heredity plays exactly the same rôle in cancer as in the other forms of tuberculosis, a natural resistance or lack of it is the thing inherited. Cicatrices interfere with the lymph supply and thus predispose to cancer. It is stated that the resected or divided lymphatic trunks can never be traced across scar tissue, and their walls are found in a thickened and obliterated condition. Traumatism has exactly the same explanation as in the other forms of tuberculosis. Chronic irritation is a kind of continued traumatism. Malnutrition means a depleted and inactive lymphatic system and diminished resistance.

In the necessity for brevity this paper is little more than an outline, but it should be sufficient to convince even the most skeptical of the possible truth of the theory set forth. To the writer it seems only another instance of the most obvious truth being overlooked and largely because of the very fact that it lay right in the pathway.

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THE ANAMNESIS OF SUBJECTS OF EXOPH-THALMIC GOITRE.*

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It is difficult to find, in the entire realm of medicine, a more intricate or at the same time, more interesting subject than is the disease of exophthalmic goitre. Our minds are so constituted that the problems concerning which we are able to understand least possess for us the greatest attraction, and this is certainly true in medical science where we find the diseases of unknown or uncertain ætiology attracting the attention of both clinician and pathologist.

Despite all the attention paid this disease by trained workers in pathology it is questionable whether the present understanding as to the ætiology of the disease will remain accepted a quarter of a century hence. Whether this surmise is true or not it cannot but be helpful if each practitioner makes as careful a study as possible of each patient.

suffering from the disease who comes under his care and publishes those cases which seem out of the ordinary.

The very name exophthalmic goitre would seem to indicate that a diagnosis of the condition was easy. It would seem improbable, if not impossible, that one should overlook the presence of the swollen thyreoid gland as well as the protrusion of the eyeballs especially when in the great majority of patients with the disease we have our attention attracted by the tremor of the hands and often by the rapidity of the heart's action.

It seems but a very short time ago that the medical profession hesitated to make a diagnosis of pulmonary tuberculosis before the tubercle bacillus was found in the sputum, but since the more careful study of tuberculosis has been undertaken no physician hesitates to make a diagnosis of tuberculosis if the physical signs as well as the symptoms bear out such a diagnosis even though no bacilli are present in the sputum. In the problem regarding tuberculosis the early cases, that is those without softening and so without bacilli in the sputum, were regarded as the difficult cases to diagnosticate, and so it is in the early and undeveloped cases of exophthalmic goitre it is difficult to make the diagnosis. As an early and correct diagnosis is all important in the treatment of pulmonary tuberculosis so in exophthalmic goître the prognosis depends in a large measure upon the early recognition and treatment of the condition.

For two years it was the privilege of the writer to be associated with a physician who enjoyed a large practice at a prominent all year health resort where unusual opportunities were afforded for observing and in many instances studying a large number of health seekers. At a health resort, particularly a popular one, it is difficult to correctly estimate the relative frequency of certain diseases usually classified as rare, for, although a disease may be uncommon, in the sense that one physician even with a large practice observes but few cases in a life time, at a resort which has a floating population of health seekers it is not unusual to see such cases frequently. Particularly is this true of all nervous conditions, chronic in character, where change of climate is often advised, first, because of hoped for benefit to the patient, second, to afford a well earned rest to the overtaxed family of the patient, and, third and perhaps not least important, to give the family physician, whose patience as well as his therapeutic repertoire has been exhausted, a rest cure by "absent treatment"

Exophthalmic goitre was one of the diseases which often appeared either undiagnosticated or wrongly diagnosticated after months and even years of ill health for the patient, during which time the sufferer had often been under medical care.

A well marked case of exophthalmic goitre is as readily recognized as is a case of paralysis agitans, chorea, hemiplegia, or advanced pulmonary tuberculosis, but unfortunately all cases are not well marked. It is perhaps well that our mistakes in diagnosis live in our memories long after we have forgotten the successfully proved ones. I remember with chagrin a very bad slip up on my part in a case of by no means masked exophthalmic goitre.

Read before the Philadelphia County Medical Society, at its regular

Case, -The patient was a woman of forty-five years of age, who walked into the office complaining of difficulty in breathing and who gave a history of having spat up a small breathing and who gave a history of having spat up a small quantity of blood stained fluid following an unusual exertion. Superficial examination revealed slight edema of the ankles, the pulse was rapid, and on ausculation of the heart a systolic murmur was heard at the apex, which was transmitted toward the axilla. The patient was extremely nervous and was trembling, but I accounted for this by thinking that the trembling was caused by her, fright at register the blood in the expectated fluid. seeing the blood in the expectorated fluid.

On questioning the patient she stated that she always considered herself well, except for nervousness, for which complaint her family physician often saw and prescribed for her. I remember now that with the self assurance of

for her. I remember now that with the self assurance of a young and inexperienced man I was quite sure that an explanation of all her symptoms could be found in this hitherto undiscovered cardiac lesion.

The after history of the case is of interest, but is not a credit to my powers of observation. The patient was placed at rest in bed and visited and examined daily for three The heart condition was particularly studied, and although its action was still labored and rapid, despite the local application of cold as well as internal medication, as

local application of cold as well as internal medication, as the more troublesome symptoms disappeared I found, for a time, no reason to change my diagnosis.

Three weeks after my first visit I called just at dusk before the lights in the patient's room had been turned on and in the half light of the darkened room the telltale widening of the palpebral fissure was all too evident to my astonished gaze. An examination of the throat revealed the presence of a well marked goître which the patient had noticed off and on for twenty years, but she had never observed nor had she been told of any prominence of the

eyes.

This patient has been under my care for three years and during which time I have gathered from herself, her family, integrating history, which I am led to

and her friends an interesting history, which I am led to believe is not uncommon in instances of this disease.

The patient was born of healthy parents, her mother being still alive and healthy except for nervousness, the father dying of pneumonia in early adult life. The patient was periectly healthy until the birth of her second child, which was born a "blue baby." This occurrence so shocked the patient that she was very ill for some weeks, and she remembered that although the physicians were unable to deremembered that although the physicians were unable to de-termine the cause, she had a fever at this time and the swelling of the thyreoid gland made its appearance for the

first time.

Following this illness it was noted by her family and friends that the entire nature of the patient appeared changed. From a bright, happy woman she became morose and un-From a bright, happy woman she became morose and un-happy, and without apparent caused formed violent dislikes for those about her. She was under medical care for ner-vousness, etc., and at intervals of several months would become violently ill. The attacks of illness were usually preceded by psychic disturbances, during which time the patient would sometimes lock herself in her room and cry patient would sometimes lock herself in her room and cry for hours over some fancied insult or imagined neglect by her family. Vomiting, without apparent cause, and often difficult to control and frequently accompanied by diarrhoza, would suddenly occur. Other attacks were not so severe, and consisted of sudden feelings of dizziness, sometimes coming without warning, but more often produced as a result of fright, grief, or anger. One strange symptom noted all through the years of ill health of this patient was a fear of falling from a height. So marked and uncortaint a fear of falling from a height. So marked and uncontrollable was this fear that the patient was unable to take a journey either by carriage or railway without being in great distress, and often having what her friends called "nervous attacks." In the intervals of these many nervous seizures the patient considered herself a well woman, but was thought by all her friends, as well as her family, a victim "nerves

She consulted many physicians at various times and was treated for a variety of conditions, among them stomach trouble, organic heart disease, hysteria, neurasthenia, etc., but was looked upon by the majority of the physicians whom she consulted as a "very nervous woman." This patient's life for the past fifteen years had been anything but a desirable one to either herself or her family.

Looking backward on the history of the case, it is perfectly evident that during all these years the patient's physical and mental health had been poisoned by the pathological secretion of the thyreoid gland, but although the patient lived in a large eastern city and was under the care of men of reputation the cause of her difficulty was not discovered until the condition had existed for years and was far advanced.

It is the part of wisdom not to make the same mistake twice. I have taken a special interest in cases of exophthalmic goître since that first experience, and have taken care to ascertain as carefully as possible a history of the patient's life before the present illness began, and have been astonished in not a few cases to find that five, ten, and even fifteen years before the diagnosis of the condition was made these patients were under medical care for ills that in the light of subsequent events could have been due to nothing but the altered secretion of the thyreoid gland. I remember very well the case of a patient. wife of a western physician who was sent to the sea shore for the benefit of the climate and to be treated for a chronic gastric disturbance which had not yielded to treatment. Her history was that for several vears she had suffered from what she termed "nervous indigestion," which caused frequent and repeated attacks of vomiting. Examination revealed an enlarged thyreoid gland, a slight degree of exophthalmus, a slight tremor, and a persistent tachycardia. Love and the familiarity of close association had blinded the professional eyesight of the husband in this instance, but it is more difficult to understand why the patient could have been under the care of a well known internist for treatment of the stomach trouble without the true nature of the condition being discovered.

In private practice the reason why these partially developed cases are overlooked is without doubt careless methods of examination, but private practice is not the only place where this disease goes undiagnosticated. Through the courtesy of Dr. H. A. Hare, of the Jefferson Medical College Hospital, I was able to investigate the old histories of several patients who are now typical examples of Graves's disease and who appear at the out patient department of the hospital for treatment. In six of the histories of patients who afterward became typical cases of exophthalmic goître no suspicion of the true nature of the illness was recorded, but in five of the six the note was made that the patient was exceedingly nervous during the examination. three histories the diagnosis was marked exophthalmic goître followed by an interrogation mark. One of these patients returned nine months later with the characteristic facies, there having been no exophthalmus at the first visit. Another patient also returned after one year's absence, and now presents all the classical signs of the disease. Each of the last mentioned patients gave significant histories of previous ill health extending over a period of years, but although each patient was aware that at times the swelling in their throats accompanied their "bad spells" they did not consider the matter of sufficient importance to call the attention of their attending

In twenty cases of this disease of which I have complete records in only two did the symptoms begin abruptly. In one case a severe fright was the

physicians to this phenomenon.

apparent cause, and in the other the grief of a mother over the sudden death of her only daughter by accident. In both cases the symptoms appeared within a few hours following the mental strain. Of the eighteen remaining patients fourteen gave a history of over eight years of ill health before a correct diagnosis was made, while the symptoms of the four cases remaining have apparently developed within five years. Of the eighteen cases, twelve patients have been more or less continuously under treatment for gastric disturbances and nervousness. while six had been treated for organic heart trouble. It seems but reasonable to believe that in the ordinary case of exophthalmic goitre there is, as in other diseases, an incipient stage where only a very careful examination and a thoughtful consideration of the history make a positive diagnosis possible.

Certainly it is true that only in this early stage of the disease do we find our medicinal agents of value. That a certain percentage of the incipient cases never develop, while others remain latent until some severe strain upon the nervous system causes their

development is equally true.

During the past five years two very important aids to early diagnosis have been brought forward. The first suggestion is made by Emmerson, of Johns Hopkins Hospital, who advocates the administration, in these undeveloped cases, of five grains of thyreoid extract three times daily while careful notes are made as to any exaggeration of the symptoms. If the case is one of Graves's disease there is invariably an increase in the pulse rate and often an increase in the exophthalmus. The exaggeration of the symptoms soon disappears in cases of the disease, while no symptoms are noted in patients suffering from other diseases. I have had occasion to try this method three times in which there was a degree of doubt and found it most helpful.

The second aid to early diagnosis has been advocated by Kocher, who has found what he thinks to be a characteristic blood picture in Graves's disease. He states that in each of one hundred cases of the disease in which he studied the blood the leucocytes were below 5,000 to the c.mm., that the polymorphonuclear are decreased, while the lymphocytes are much increased. If this is found to be true in all cases the examination of the blood will be a very

important aid in the borderline cases.

Despite our advance in knowledge concerning the pathology of this disease, the treatment, whether by ordinary medical measures combined with rest, forced feeding, and change of climate, sera, or by the more recently advocated surgical measures, still leave much to hope for in the future. Of one thing we are all sure, and that is whatever our line of treatment the greatest hope for success lies in the hope for better results from treatment necessitates that we use every precaution to make our physical examination complete and educate ourselves to recognize the early and undeveloped cases of this disease. It is necessary for us to remember that in this disease, particularly in its early stages, we do not have the four so called cardinal symptomsthat is, goitre, exophthalmus, tachycardia, and treated. Air on and are the absent at some

stage of the disease, although there is in the great majority of cases tachycardia. Any of the other signs and symptoms may be absent, while perhaps as significant as any of the cardinal signs are the various nervous symptoms and mental irritability exhibited by the patient.

2030 CHESTNUT STREET.

H.EMORRHAGES INTO THE VITREOUS BODY IN THE ADOLESCENT.

With Report of Two Cases.

By Julien A. Gehrung, A. M., M. D., New York,

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The period of adolescence is probably the most important for both sexes, because of the awakening and growing desires, duties, and responsibilities pertaining to the rapid transition from childhood to adult life.

Hereditary tendencies are more pronounced at this period than at others and may render the individual more prone to a morbid state of health and

consequently to hæmorrhages.

Sex does not appear to exert any marked difference in the production of diseases of the eye during infancy and childhood. On the advent of puberty, with the accompanying menstrual losses in the one and the seminal emissions in the other, both of which are instrumental in lowering the strength and power of resistance, the difference becomes very marked. The individual is especially prone to hæmorrhages, with abnormal action of the heart and abnormal tension in the vessels, especially when combined with abnormal nutrition of the latter.

Causes: The causes of hæmorrhage into the vitreous in the adolescent, it seems to me, may be reduced to two, namely: 1, Defective nutrition; and

2, traumatism.

Defective nutrition consists in insufficient or improper supply in proportion to the demand, or improper assimilation and elimination, increased demand in proportion to quantity and quality of supply, whether from developmental or dyscrasic causes, and the improper elimination of toxic material. The dyscrasic causes of the morbid condition of the blood and tissues subsequent to diseases whereby their resistance is impaired may be inherited or ac-

quired.

Traumatism may be external or internal. External traumatism consists of injuries from blows or concussions, direct, and indirect; rapid changes in temperature, or prolonged exposure to extremes of temperature; occupations causing great fatigue and muscular strain, such as stooping, violent exercise, coughing, sneezing, etc. Internal traumatism consists in a, intraocular, diseased bloodvessels, and eye strain; b, general, fluctuations, depletion or congestion occasioned by sexual excitement, fright, hysteria, nervous shock, anger, cardiac disturbances, plethora, and anæmia—in short, any condition which can vary the blood pressure in the eye abruptly.

Suppressed menstruation is not de facto a cause

of haemorrhage. It may merely signify that the generative organs are anæmic, with a corresponding hyperanæmia or congestion elsewhere, e. g., the head.

Males are more liable to hæmorrhage than females. Von Gräfe noticed this fact in 1854.

In apoplectiform hæmorrhages alterations in the walls of the vessels are held to be the cause. Abadie denies this, and affirms that it is vascular distension which causes the rupture. Abadie also affirms that "it is very rare that at or before the age of thirty years the bloodvessels are degenerated." Bourgeois sides with Abadie because the pain of trigeminal shows an irritation of this nerve and its vasodilators, as the glaucomata are consequences of the vasodilation.

Simple increase of tension is not sufficient to produce hæmorrhage; if this was true almost every case of glaucoma would be hæmorrhagic. Neither is it necessary that the walls of the vessels be degenerated, as cases of faulty development seem only to require the exciting causes to rupture. Secondary glaucoma is not always present, and so cannot be the cause. The negative results of examination of the heart and vessels may simply mean that pathological conditions are not demonstrable.

Résumé of opinions as to predisposing causes of hamorrhages: Menstrual disturbances, anæmic contaction, constipation (Eales); gout (Hutchinson); hypertrophy of the heart (Goutard); toxæmia (Panas); acute anæmia (MacKenzie); azoturia and phosphaturia (Traneau); pernicious anæmia (Niedringhaus, Sargeant, Eales); leuchæmia (Steuben, Deutschmann); scorbuttus, malaria (cured rapidly with quinine) (Galezowski, Teillaio); renal, diabetic, and septic diseases, hereditary, also acquired, tuberculous, specific; indigestion, chlorosis, and diseases of malnutrition, imperfect development, incomplete development, overdevelopment, vascular disease neuroses, meningitis, fright, shock, injuries, trauma, etc.

Some hæmorrhages result from obstruction to the retinal circulation, endophlebitis obliterans of Wernemann. This obstacle may reside in any of the temporal or nasal branches of the retinal veins, and the obliteration may be caused by the ectasia of the posterior pole in progressive myopia.

Some deny that hæmophilics have hæmorrhages into the vitreous (Evenbuche, Valude, Abadie), but Vialet and Weber report one case in a hæmophilic, with hæmophilic parentage, having intraocular hæmorrhages which he attributed to the hæmophilia. Weber had a hæmophilic case with intraocular hæmorrages followed by optic atrophy. Eleven years later the other eye was affected; exophthalmus, with necrosis of cornea, finally phthisis bulbi resulted.

Lagrange does not agree with Abadie that hæmorrhage in these cases is due to dyscrasias of the blood or that hæmophilic blood is dyscrasic, but affirms that there is some dyscrasia of the deep membranes. He agrees that in adolescence hæmorrhage is due to alteration in the blood.

Symptoms: Prodromes are often wanting. Sudden blindness is frequently the first symptom noticed. Sometimes, however, there are repeated attacks of dimness of vision, menstrual vagaries, epis-

taxis, dizziness, bursting headaches, sense of fullness on stooping, eyes puffy in the morning, with rings around them, face pales or flushes easily, perspiration, cold extremities (circulatory disturbances), depressed and melancholy spirits, rapid growth, fatigue, nervousness, difficulty of using the eyes for near work, nocturnal seminal discharge, and epistaxis. Epistaxis is absent during hæmorrhagic áttacks. Often there is red color before the eyes. Sometimes suddenly on awaking in the morning the patient is blind in one eye, no pain, no apparent cause (the position of lying down is possibly an exciting factor).

Why is the eye peculiarly subject to hæmorrhages? Other organs are often the site of hæmorrhages, but in them they are not so noticeable to the patient or physician; they are of less consequence, more quickly resorbed, and interfere less with the functions than when in the eye. Hæmorrhages in the eye are painless, and would come and gradually disappear again unnoticed were vision not inter-

fered with.

The eye is intimately connected with the brain and subject to many of its variations of pressure and nutrition; and diseased conditions of all kinds are quickly manifested there. It is a veritable barometer of brain disturbances. No organ of comparative delicacy in the human economy is subject to such sudden, unremitting excursions, and such violent muscular action, and variations of pressure as the eyes.

On examination in cases of hæmorrhage the vitreous is found to be full of blood. The anterior portion of the eye is mostly clear from the posterior capsule of the lens forward; the conjunctival and ciliary region is as a rule not even congested. Dr. Kipp reports a case in which there was ciliary congestion, and Zieminski, a subconjunctival ecchymosis four weeks previous to hæmorrhage. morrhages into the anterior chamber are rare (see author's case). In the other articles these are conspicuous by their absence. Little tendrils of blood may be seen worming their way in the fissures of the vitreous in the early stages, increasing till the vitreous is filled, permitting no fundus reflex and obscuring vision. Sometimes there is a little light in the upper and outer parts of the retina above the hæmorrhage, probably on account of the gravitation of the effused blood. On oblique illumination the fundus shows a reddish brown reflex on the posterior surface of the lens. Later the iris may lose its lustre and color, and be marked with reddish brown streaks, the pupillary edge presents a brownish network due to absorption of blood pigment. The pupil is dilated and the eve tension is increased. The blood disorganizes, forming floating opacities or dustlike particles.

Treatment has given poor results in chronic cases, while in acute cases, after months of patient treatment, most of the detritus is absorbed, and if the destruction of the vitreous proper has not been too great, vision may be restored.

The hæmorrhages may be from the veins, burrowing along the sheaths of the vessels, forming filliform hæmorrhages, which may increase r appear as multiple ancurvsms.

Gräfe witnessed a hæmorrhage from the retinal veins which occurred while making an ophthalmoscopic examination. The blood poured slowly in a serpentine way into the vitreous. He cautions that the examination be not tedious nor unnecessarily prolonged. Hæmorrhages coming from the periphery may be sudden and copious. There may be a general exudation, an exosmosis, a diapedesis from all the veins or arteries, or possibly merely exudates of lymph. These pictures, as to number of foci, seat, disposition, and their extent, vary in different subjects.

Investigators disagree as to the origin of the hæmorrhages. Some writers, especially the Germans, think that they come from the sheath of the optic nerve, originating either from the papillary vessels or the intravaginal space, and so into the vitreous. This is improbable, as the blood could not pierce the lamina cribrosa, but would more easily invade the subarachnoid space, and course along the nerve. Others think they come from the retinal veins of the fundus. While still others say they come from the peripheral veins, from the vena vorticosæ, the ciliary body and neighborhood. The retina is merely a thin membrane, easily ruptured. The blood supply is great, and the parts subject to frequent and marked fluctuations. It seems most probable, therefore, that the majority of hæmorrhages are from the latter places. The ciliary body is very vascular, muscular, rich in nerves, and in almost constant activity, due to accommodative efforts. If the hæmorrhages have their origin from the retinal veins a clot may be just over a vein, and in later stages a filament of exudate may project into the vitreous, attached to the vein at the site of the rupture. The retina becomes thickened and white in patches, from which may radiate numerous streaks of exudate. This is known as the retinitis proliferans of Manz.

Abadie observed the beginning of a hemorrhage. Streaks of blood along the walls of the retinal vessels spread out in sheets and invaded the papilla and retinic zone, while others in form of spots in-

vaded the equatorial zone.

Hæmorrhages in the adolescent often form a sheet betwen the retina and vitreous without infiltrating the retina, e. g., subhyaloid hæmorrhages. Panas speaks of simple hæmorrhages of adolescents as "epistaxies intraoculaires."

The site of a lesion may be determined by perimetric examination. There may be other causes for the scotoma found, rendering the result doubtful.

Complications, aside from causative factors, may be secondary glaucoma, chorioretinitis, and iritis, to the extent of destruction of the eye from phthisis bulbi. Detachment of retina is rare. Bourgeois observed that small hæmorrhagic foci and some white spots were the only symptoms in a case where the urine showed diabetes. H. Jackson referred to one case of meningeal hæmorrhage in a young man, subject to epistaxis, in which a clot was found in the eye. Myopia (acquired) was noticed in a number of cases which were said to be normal, or nearly so, before the hæmorrhagic attack. In some cases hyperopia existed previously to the effusion (Zieminski). In cases in which glaucoma follows hæ-

morrhages into the vitreous or retina, or in hæmorrhagic retinitis, the eye is in all probability predisposed to glaucoma. While hæmorrhages which accompany or follow glaucoma indicate diseased bloodvessels, unless complicating operation, in which case it may be due to the too sudden release of tension.

Classification: Abadie classifies the hæmorrhages as follows: 1, Abrupt hæmorrhages with repetition. 2, The drastic hæmorrhages with rapid evolution, progressive but more insidious than the first. Instead of being resorbed in a short time, they suddenly reappear. Such cases develop slowly either toward disorganization of the eye or cure, according to treatment employed, etc. 3, Hæmorrhages dependent upon previous lesions of the deep membranes, e. g., chorioretinitis. The hæmorrhage then becomes a secondary consideration, as it is a complication of the previously existing disease. 4, Apoplectic form, due to rupture of retinal vessels not in sequence to the fragility of the vessel walls, but because of the excessive dilation.

LeGrange's classification: I, The eye is healthy and the subject is sick. 2, The eye is sick and the subject is healthy. 3, The eye is sick and the subject is sick. He objects to the classification adjective to dyscrasis, etc., as indefinite, and suggests the

preceding.

Bourgeois's classification: 1, Secondary hæmorrhages, e. g., chorioretinitis. 2, Apoplexies of the

retina. 3, Dyscrasic hæmorrhages.

To all these conditions we must add the disease "adolescence." We must admit that it is sometimes a diseased state producing marked tendency to hæmorrhage requiring only an extraneous exciting factor.

Treatment: 1. Prophylactic. Children with inherited diseases or tendencies must be carefully watched and properly treated. Any nervous manifestation or abnormal conditions in girls not directly attributable to some cause should direct the attention to the generative system, and any defect, however slight, should be properly corrected. Children of either sex rapidly attaining their growth should excite the alarm of the doctor and parent rather than admiration. They should be treated as convalescents, by diet, exercise, etc. By avoidance of exposure to rapid changes of temperature or prolonged exposure to heat or cold, overfatigue, hunger, exposure to disease, and infections. Errors of refraction should be corrected, and all occasion to eve strain avoided. Careful inquiry should be made as to cause of headaches, dizziness, epistaxis, etc. Mental and physical rest should be given during menstruation.

2. During hæmorrhage: Avoid unnecessary or prolonged ophthalmoscopic examination. Command absolute rest in a darkened, quiet room. Keep the howels open, and maintain free elimination. Give low but nourishing diet. Maintain even temperature. Deplete the head by cold applications, position, and pediluvia. Avoid recumbent positions, as it seems to be an exciting factor to intraocular hæmorrhages. Some recommend venesection, but this is objectionable. Leeches to the temple are necessary for immediate effect, as well as cold applica-

tions. There should be a light, gentle pressure bandage on eye, to act practically as a splint and hæmostat. Some give hypodermic injections of pilocarpine and eserine, also ergot and quinine, especially in malarial cases. These remedies should be used with great caution and tentatively, as they may produce a contrary effect. Ergotin, strychnine, belladonna are held by some to be of no value in these cases. Give bromides, small doses of iron (rational) as tonic; treat heart and all exciting factors. Do not excite or alarm patient, but console and encourage him.

3. Treatment of posthæmorrhagic state: Hot compresses on the eyes to hasten absorption and stimulate circulation; good food; potassium iodide, possibly combined with mercury. Treat all dyscrasias and exciting factors. Continue hygiene, quiet, etc. Abadie recommends extractum chinchonæ, ferri chloridum, sulphuric acid, acid lemonade ad libitum. He considers this better than potassium iodide or sodium salicylate. Vignes likes sodium iodide, by injections. Panas gives arsenic in the form of Fowler's solution. Bourgeois, in DeWecker's clinic, recommends injection of the salts of mercury into the buttocks.

The question of cerebral apoplexy must be considered and guarded against. Potassium iodide must be used cautiously, as it produces engorgement of

the head.

Glaucomatous conditions require very careful treatment. Operative treatment is dangerous, as the sudden lowering of tension may excite hæmorrhage, with grave results. Even rapid results from eserin

may be harmful.

If the intraocular vessels are diseased the congestion and ædema following iredectomy for glaucoma are likely to last longer, and retinal, choroidal. and neural changes increase, and the glaucomatous conditions become aggravated. Sometimes the tension becomes so great and painful as to necessitate enucleation. Hutchinson reports such a case.

Zieminski had a case with glaucomatous complication. Medical treatment and paracentesis was performed, which relieved the patient for twenty-four hours only. "The return of all the symptoms forced us to make an iredectomy with satisfactory results. The symptoms having disappeared, the

blood resorbed rapidly."

Prognosis: Prognosis is grave in proportion to the amount of hæmorrhage and location. The blood resorbs slowly; acts like a foreign body by its continuous presence in the vitreous, the aqueous becomes irritated and loaded with fibrinogen and provokes a proliferating inflammation, causing an afflux of leucocytes. Detachment of retina rarely occurs. Small hæmorrhages may remain between the vitreous and the retina and slowly resorb. The extravasated substance may become organized into white patches toothed and fringed, producing scotoma. The blood is resorbed in the vitreous more slowly in proportion as the effusion is more distant from the ciliary

The likelihood of a recurrence of the hæmorrhage makes the prognosis grave. However, many cases are reported, in which, even after several recurrences of extensive hæmorrhage, the vitreous clear-

ed and vision became normal.

The writer wishes to report two cases:

CASE I.—Patient was seen in Dr. Hunter's service of the New York Eye and Ear Infirmary. Subhyaloid hæmorrhage in a woman, twenty-eight years of age, tall, brunette, married, no children, no miscarriages, menses irregular, sometimes a week or more overdue, and quite copiregular, sometimes a week of more overduc, and quite coordinates outs. Patient stated that she had suffered considerably from "female weakness," backache, etc. There was no history of epistaxis nor specific trouble. She had had frequent attacks of rheumatism, was anæmic, poorly nour-ished, and nervous. Family history was negative.

One week before presenting herself at the clinic she awoke

in the morning, suffered no pain, but noticed that she could not see the face of the clock with the right eye. Peripheral vision good. Vos. 20/20+Fundus: In the mascular region there was a large hæm-

orrhage, perfect purse formation, as is beautifully depicted in Liebrecht's Ailas. Sharp upper border horizontally a little above the level of the disc. By playing the light over the edge of it a sharp shadow was cast on the retina. The lateral edges gradually curved, meeting each other below, and below the level of the disc. The transverse measure-ment was about four or five disc diameters, vertically about three. Several days later the hæmorrhage was the about three. Several days later the næmorrnage was the same size, slight extravasation into or over the retina, very thin layer towards temporal side. The main clot was still quite distinct. Vitreous was not invaded.

After two days most of the blood outside of the main purse clot had been absorbed, and purse formation was again complete. Where the extravasated blood had been

there was a slight, whitish mottling, rather stellate. A few whitish spots, quite small, seemed to be in the main clot. A large physiological cup existed absolutely free of blood. The origin of the hæmorrhage in this case must be in the

retinal vessels.

Patient was given potassium iodide, hot baths, bowels were kept freely open, good diet, quiet, dark, tonics.

Uranalysis showed faint trace of albumin, probably due

to presence of pus Since writing the report patient has almost entirely re-

This case seems to be one of adolescence, as the history given corresponds to cases reported by

others, and no other cause is patent.

The fields, shown in Fig. 1 and Fig. 2, were very kindly taken by Dr. Alexander Duane on his tangent plane at 30 inches from eye. Object, 10 mm. white ball. The field taken February 1, 1908, shows the absolute and partial scotoma, beautifully depicting the partially absorbed margin of clot, and the denser centre. Field taken April 27th shows only a partial scotoma, in harmony with picture of fundus, as clot is mostly absorbed and quite thin.

CASE No. II.-Hæmorrhages into the vitreous body following stab wound in temple, not touching eye; with the rare complication of hæmorrhages into anterior chamber. Case seen on Dr. P. A. Callan's service of the New York Eye and Ear Infirmary, who kindly permitted me to pub-

Mr. C. M., twenty-nine years of age, Finlander, carpenter. Patient was not well nourished. His right eye had been struck by a foreign body, eleven years ago, lodging in lower middle portion of iris and lens, producing traumatic cataract. Cataract and foreign body were removed seven mouths ago, no complications resulting.

On August 28th patient was stabbed in the left temple, one On August 20th patient was statober in the temperature inch behind margin of orbit and one quarter inch above median line. Wound probed, bone intact. There was a hearmorrhage into the vitreous body. Fundus was not visible. Vos = 6/200. Treatment: Rest, atropine, and cold

September 3rd. Patient was discharged, slightly improved, vitreous body still containing much blood.

Patient improved rapidly until October 3rd, awakened

with "fog over eye."

October 4th. Eye totally blind. Not even light perception. Vitreous body full of blood and marked hyphæmia. October 10th. Blood mostly absorbed.

Skiagraph, made by Dr. G. A. Dixon, was negative.

October 22d. Fresh hæmorrhage into the anterior chamber. V= barely light perception. T= slightly subnormal.

Injection not marked.

November 6th. Anterior chamber still cloudy, small amount of blood remaining, vitreous body very cloudy.

Fundus not visible. Patient had taken potassium iodide, and had subconjunctival injections of normal saline solution, and also of dionin. As absorbents quinine and iron, and suprarenal extract as tonic and reconstructant. Atropine locally. (Since this was written he has had recuirences.)

This is evidently a case of intraocular hæmorrhage of adolescence induced by the contre coup of the stabbing. The bloodvessels were in poor nutrition and unable to withstand the violence and sudden change in blood pressure. Later on, after lying down, with the corresponding increase of blood pressure, these vessels again gave way, with the resultant recurrent hæmorrhages. One interesting factor in this case is the repeated involvement of the vessels of the iris. This is a rare complication.

Conclusions: 1. Hæmorrhage into the vitreous body during adolescence is quite frequent, and owing to the danger of recurrence, and tissue changes in the eye, is a dangerous condition, worthy not only of patient, careful, and exhaustive treatment after the occurrence, but also of prophylactic measures.

2. The too rapid development of children should cause solicitude.

3. Rapid changes of temperature and prolonged exposures to heat or cold are ætiological factors.

4. Menstrual disturbances, undue sexual excitement and abuse, cardiac disease, dyscrasias, malnutrition, errors of refraction, all causes of eve strain, hereditary diseases and tendencies, vascular diseases, anæmias, abnormal (premature?) development, or malformations, all mental and physical causes of sudden and rapid fluctuations of the blood stream and tension are causative factors in intraocular hæmorrhages.

5. The origin of hæmorrhages may be from the retinal vessels or from the vessels in the region of the ciliary body, not from the sheath, etc., of the

optic nerve.

6. Glaucoma is rather the result than a causative

factor of these hæmorrhages.

7. The treatment should be medicinal if possible, the knife to be used only as a dernier resort.

8. Attacks in women usually follow menstrual disturbances

9. Where there is a tendency to epistaxis and this suddenly ceases we have a danger signal of hæmorrhage.

10. Males are more liable to intraocular hæmorrhage than women; normal menstruation is seemingly a safeguard.

11. The age from puberty through womanhood, or manhood, is a danger period.

12. Anæmic conditions are predisposing.

I desire to acknowledge my indebtedness to Dr. J. E. Weeks for suggesting the subject of this article and valuable advice in its preparation; to Dr. Alexander Duane for his kindness in making the "fields," and to Dr. P. A. Callan and Dr. Dwight Hunter for their courtesy in allowing me to publish these cases seen in their clinics.

II EAST FORTY-EIGHTH STREET.

LUMBAR PUNCTURE IN OTOLOGY.

By Seymour Oppenheimer, M. D.,

New York.

In the great majority of aural affections seen by the otologist, the admissibility of lumbar puncture as a diagnostic aid need not be considered, as it is neither indicated nor does it present any degree of usefulness. But in that group of cases where, coincident with or following suppurative changes either in the middle ear alone, or, more frequently, the middle ear and mastoid tissues, serious pathological changes are suspected in the intracranial structures, every diagnostic aid that can be made available must be considered, and in such instances this procedure may be the essential factor in clearing up the nature of the conditions present.

That lumbar puncture as a diagnostic agent in some of the intracranial complications of suppurative otitis has a decided value has been repeatedly demonstrated, not only in greatly aiding in the recognition of a meningitis, where it gives positive evidence of the condition present, but it is of value, as will be seen more fully later, in a negative aspect. While in some obscure cases one may be enabled by this procedure to determine the nature of the meningeal changes and to some extent their cause, by an analytical and bacteriological study of the cerebrospinal fluid, and thus obtain fuller information as to the advisability or not of operative procedures, it does not seem advisable that lumbar puncture should be employed indiscriminately in all cases of suspected intracranial complications from suppurative otitis, but its use for diagnostic purposes should be limited to such cases where serious doubt exists as to the presence or absence of meningitis, and in which it is impossible to obtain a satisfactory diagnosis without its use. While there is the possibility of added danger from its employment, yet it is trivial as compared with its value as a diagnostic agent in some instances, and as it is readily performed, it should always be remembered as a valuable aid to the otologist.

Its importance from a positive aspect is self evident, as when the withdrawn fluid shows changes from the normal varying in degree from marked turbidity, or possibly a purulent fluid, to that almost or but slightly altered, one can readily determine the nature of the intracranial changes and determine to a great extent the feasibility of operative procedures in the given case, and to a considerable degree, the prognosis. While, as has been demonstrated, the presence of but slight change in the fluid is not necessarily of grave prognostic import, even in the presence of serious local symptoms, as even in such cases, with the evidences of meningeal alterations thus obtained, operative procedures may be available, and at least in a small percentage of such in-

stances, be successfully accomplished.

The negative evidence obtained by lumbar puncture in otology also may possess great diagnostic value, for, as a rule, it indicates the absence of a meningitis of any extent, and thus eliminates this factor from the conditions suspected to be present. In a few recorded cases, however, this has seemingly been disproved, as a purulent meningitis has been found at autopsy, but it has been limited in extent and has not attained sufficient progress to infect the entire cerebrospinal fluid at the time at which the puncture was made. On account of this discrepancy in the pathological findings, it is undoubtedly the best practice to consider a normal fluid as of no diagnostic value for the time being, and if the case is such that twenty-four or forty-eight hours' delay may be safely considered, to again puncture, and if the fluid still remains clear, to consider that meningitis is not present; while other conditions being equal, operation would not be contraindicated. If delay is impossible, however, a normal fluid obtained at the first puncture would not necessarily contraindicate immediate operation, if other symptoms were present clearly indicating that the mastoid and possibly the cranium were the seat of morbid changes. It is not always, therefore, to insist in otological cases that no conclusion should be drawn from negative findings.

Quantitatively one may obtain some evidence of the presence of increased intracranial pressure by an excessive amount of fluid escaping through the cannula employed in making the puncture, but this evidence is of little or no value in the conditions met with as aural complications and for which lumbar puncture would be employed, although some value should be attached to the escape of the fluid under apparently high pressure, as undoubtedly indicating

increased tension.

To the color of the fluid one can attach no practical value, while the same may be said of its specific gravity, but the proportion of albumin present is of great diagnostic import, as an increase above the normal shows, with but few exceptions, the presence of meningeal inflammation. When numerous cells are present in the fluid, one may be sure that inflammation is the cause of the cellular exudate, while the finding of microorganisms leaves no doubt of the existence of an infectious meningitis, and this is especially so when tubercle bacilli are found, as under such circumstances a tuberculous meningitis alone can produce this condition.

The amount of fluid removed at any one time may vary from one to one and a half ounces, but for diagnostic purposes but a few drams are necessary to determine the conditions present, and the amount withdrawn is immaterial in this respect, but when this procedure is employed as a therapeutic measure the amount depends entirely upon its effect on the

patient at the time of the lumbar puncture.

While this procedure has not been employed in any large series of cases by otologists, yet it has been used sufficiently often for the diagnosis of some of the intracranial complications of suppurative of tits to form fairly definite conclusions as to its apparent harmlessness in this class of cases. It has been suggested, however, that there exists some danger of drawing infectious material from the

danger of drawing infectious material from the cranial cavity into the spinal canal in cases where the former is infected; that this may be a possibility it is impossible to deny, although in such instances no harm could arise further than that already present, as a purulent meningitis in itself would, in but a very short time, infect the spinal canal as a matter

of course.

As a basis for comparison with the varied morbid

products found in the fluid which has been withdrawn from a case of intracranial infection, it will not be out of place here to briefly state that the normal cerebrospinal fluid contains but a small trace of albumin, usually varying between 0.25 and 0.1 per cent., or at times even less than this, while it should be perfectly clear, depositing no sediment on standing. At the same time there is an entire absence of any cellular constituents, and fibrin should also not be present. It is not desired here to enter into any of the details of the methods by which the distinctive diagnosis of the various intracranial conditions is aided by a study of the fluid obtained by lumbar puncture, but it is essential to emphasize that not only should the fluid be studied microscopically, but that, with careful aseptic technique, cultures should be made to accurately determine the particular microorganisms present, and also that it is important in obscure cases to carry the bacterial tests still further, and as far as possible have inoculation experiments made when there exists any doubt as to the relations thus obtained and the associated aural changes. The importance of ascertaining the bacterial elements causing the meningitis, if such exists, being of the utmost value, especially in those cases of severe mastoiditis where the symptoms would seem to indicate a possible intracranial complication, and lumbar puncture shows conclusively the presence of a coincident tuberculous meningitis of low grade.

In the distinctive diagnosis of a possible brain tumor from that of a brain abscess, or extradural collection of pus limited in extent and thus circumscribed, little or no information can be obtained, and the withdrawn fluid is practically the same in both of these conditions. As a rule in such conditions, the cerebrospinal fluid remains unchanged from the normal, is clear, perfectly limpid, and contains from 0.4 to 0.8 per cent. of albumin, and if allowed to stand will not spontaneously coagulate. As long as the pus collection, irrespective of its location, remains circumscribed, and the arachnoid space is not invaded by the purulent process, practically nothing can be gained as an added diagnostic feature by lumbar puncture, but where the diagnosis from other conditions seems occult, one may gain some added negative information, as the fluid in these two conditions is frequently released under abnormally high pressure, and may also be more abundant than usual.

Between brain abscess alone and an abscess with meningitis, lumbar puncture is of great diagnostic value, as it enables one to determine the presence or absence of the latter, but at the same time, except for a possible increase of the intracranial pressure, definite information as regards the brain abscess will not be obtained. The distinctive value in these conditions is well illustrated by a case reported by Jacoby, where the diagnosis and important question of operative procedures lay between these changes, that is whether a brain abscess alone was present, or whether it was complicated with a meningitis. The puncture, however, showed pus in the cerebrospinal fluid, and operation could, therefore, not be advised; the autopsy later confirmed the correctness of this opinion, as it showed that there was an abscess of the cerebellum, and in addition a purulent meningitis was present.

Another aspect of this question will arise in those cases where the diagnosis lies between a diffuse meningitis or an abscess of the brain. Under such circumstances, lumbar puncture may be essential for the recognition of the particular condition present, and in this instance it is of the greatest service; as before shown, the meningitis may be readily recognized by this procedure, and thus a satisfactory answer will be obtained.

In the distinctive diagnosis between brain abscess and sinus phlebitis, the evidence obtained is usually negative, and lumbar puncture affords no help in distinguishing one condition from the other. In a small group of cases, however, when this condition arises and a high temperature is present, some additional information of value may be obtained by puncture, and in connection with the other symptoms will warrant one in giving a fairly definite opinion of the particular pathological changes present in the case.

It is especially with meningitis, however, that lumbar puncture presents its greatest diagnostic value, and not only may a purulent meningitis be recognized by this procedure, but so called pseudomeningitis may also be distinguished. This being well shown in a case reported by Knapp, where the radical operation was performed upon a girl of sixteen years. A few weeks following she became ill, with high temperature, delirium, vomiting, and rigidity of the cervical muscles, so that clinically the case presented all the evidences of a serious meningitis. Lumbar puncture was performed for diagnostic purposes, and while the fluid obtained was turbid, yet it was entirely free from microorganisms, so that a purulent meningitis was eliminated, and the subsequent restoration to perfect health showed the value of this procedure in such cases.

In true meningitis there is always an exudation of cells from the meninges, which produces a greater or less degree of cloudiness of the cerebrospinal fluid, so that a cloudy fluid obtained by lumbar puncture invariably predicates the presence of some degree of meningeal inflammation, and to a certain degree the extent of this turbidity is proportionate to the amount and character of the exudation. In addition to this and especially in otitic meningitis, the proportion of albumin present is of the greatest significance. To determine this, the albumin should be estimated by quantitative examination, and in meningitis one finds that this is increased from the normal ratio to 0.03 or 0.1 per cent., or even higher in some instances. When the albumin is in proportionately large amounts, such as 1.6 per cent. or more, the fluid will coagulate spontaneously, so that if one obtains a clear fluid in a case where the symptoms are suggestive of some meningeal inflammation, spontaneous coagulation is highly suggestive of an otitic meningitis, although it may possibly be of limited extent.

Where lumbar puncture demonstrates a concurrent meningitis in otitic cases it does not always indicate that surgical intervention is contraindicated, as the pathological changes may be of limited extent, and in such cases where the fluid is not markedly altered, operative measures should be proceeded with, other things being equal. Although if microrganisms are present to any degree, little can be gained by exposing the intracranial contents, a case

of Lichtheim's demonstrating this, as there was ofitis with cerebral symptoms, and lumbar puncture demonstrated the presence of streptococci, showing that a purulent meningitis was the cause of the cerebral symptoms, the correctness of this diagnosis being confirmed by autopsy.

The distinction of serous meningitis from the various intracranial complications of suppurative otitis is not materially enhanced by this procedure, as both the quantity and quality of the fluid present little or no distinctive changes in this variety, and when minor alterations are present they differ in no distinctive manner from those common to the intracranial morbid changes of otitis. The release of the fluid under increased pressure may signify increased intracranial tension, and therefore has no distinctive diagnostic value, and still further a purulent meningitis is not infrequently, in its early stages, accompanied with a serous exudate on the meninges, so that the findings at an early period

would be quite misleading.

The possibility of a tuberculous meningitis being associated with a nontuberculous mastoid suppuration may seriously render the recognition of the presence or absence of intracranial complications very difficult or practically impossible by the usual methods employed, and under such circumstances lumbar puncture is of great value in recognizing the tuberculous condition. While the finding of tubercle bacilli in the fluid is absolute proof that the meningitis is tuberculous, yet it is not always possible that these organisms will be found, and then repeated search should be made to demonstrate their presence. In some cases the cellular exudation is so small in amount that the fluid appears perfectly clear, and from its macroscopic appearances no suspicion will arise as to the serious changes in the meninges, but microscopical examination will demonstrate the organisms and render the diagnosis clear. This is shown in the cases studied by Furbringer, where tubercle bacilli were found in the fluid in twenty-seven cases, and in all the diagnosis was confirmed at autopsy, while in seven cases the exception to this was shown, as the fluid was negative, although the autopsy showed a tuberculous meningitis, thus giving a correct diagnosis in eighty per cent. of the cases.

While in general the degree of cloudiness of the fluid is to a great extent proportionate to the amount and character of the meningeal exudation, yet, as has been shown by Leutert, one may occasionally find a turbid fluid with numerous white blood cells present, and yet in such instances autopsy has showed the absence of meningitis, the condition apparently depending on the fact that at the time the puncture was made a transient and localized serous leptomeningitis was present, which resolved at a later period.

Cerebral pressure or irritation may be expressed by increased tension under which the spinal fluid escapes, and in this way lumbar puncture may be of considerable diagnostic aid when considered with other symptoms indicative especially of a cerebral or cerebellar abscess, or a localized epidural pus collection, but taken alone one cannot attach much significance to such a phenomenon.

Much importance must be attached to the nature of the abnormal cellular constituents of the fluid, in

the presence of symptoms suggestive of otitic intracranial complications and of these particular cell elements, polynuclear leucocytes predominate in purulent meningitis, so that when a turbid fluid contains a large number of these cells, with or without the presene of microorganisms, one should have little hesitation in considering the meningeal inflammation as purulent in character. When mononuclear lymphocytes predominate, or are found to the exclusion of other types, tuberculous meningitis is evidently present, especially if the fluid is clear, or but slightly clouded. Unless other symptoms indicative of this condition are also present to some degree, the lymphocytosis may be the expression of some old otitic lesion, such as a patch of chronic meningitis in relation to some carious process of the temporal bone, or it may also occur during the subsidence of an acute nonfatal otitic meningitis. The presence of red blood cells in the cerebrospinal fluid occurs in an entirely different class of otologic cases, as it bears no relation to the intracranial complications of aural suppuration, but may be mentioned here as indicative of serious traumatic injury to the labyrinth, but at the same time lumbar puncture affords little added information in such instances, as the ear symptoms alone are sufficient to make a diagnosis without subjecting the patient to this proce-

The great value, therefore, of lumbar puncture in otology presents mainly a diagnostic aspect, and the most important value is that it enables one to exclude the presence of a purulent meningitis or a tuberculosis of the meninges, and thus avoid operative procedures that would be of no benefit. Although from an otological standpoint the presence of meningeal symptoms in themselves do not contraindicate mastoid and intracranial operative procedures, unless the lumbar puncture shows that the cerebrospinal fluid is infected.

Finally, as a therapeutic application it is of no practical value at present in any of the conditions previously mentioned, except that it may possibly relieve intracranial tension in certain cases of serous meningitis. It may be briefly mentioned, however, that Gradenigo in four cases of otitic leptomeningitis employed lumbar puncture as a therapeutic agent and obtained three recoveries. In two cases the fluid withdrawn, being cloudy, contained leucocytes and staphylococci, and he believes that this procedure exerts a direct curative effect in such cases, while Thiell also believes that it is of some therapeutic value in serous and seropurulent meningitis. But the majority of otologists believe that its therapeutic usefulness is of but little moment, and, while it may be admissible in such otitic cases as are accompanied with increased brain pressure, one is not enabled to find any positive indications for its employment except for diagnostic purposes.

In labyrinthine disorders, Babinski has removed in this way from fifteen to twenty cubic centimetres of spinal fluid as a therapeutic agent, and asserts that it has a remarkable influence on the aural vertigo. He believes that it also acts favorably on the tinnitus and deafness, but not to the same extent, and alleges that it is more efficacious in pure labyrinthine lesions than in other pathological changes here. His contentions, however, have not been supported by other otologists, and Lombard and Caboche in study-

ing Babinski's method found in cases of dry adhesive otitis that there was no improvement in the hearing, although the vertigo was temporarily relieved more than the other symptoms.

45 East Sixtieth Street.

SCARLATINAL EPIDEMIC FROM INFECTED MILK BOTTLES.

By Harold B. Wood, M. D., Philadelphia.

The danger of the communicability of infectious diseases when the diagnosis is difficult and the possibility of bacterial transmission at the onset of a disease is apparent to all. It may seem troublesome and drastic to institute from the very beginning of an illness disinfection of all excreta, nasal sprays, partial isolation, or protection of the water supplies, but such action will often prevent subsequent illness and death. These measures are usually considered, but another channel through which bacterial transmission occurs is too frequently neglected by the householder-the conveyance of germs to another's food supply. Whenever a case of illness of any kind appears, particularly if among children with mild or obscure symptoms, the physician besides instituting all other protective measures should particularly instruct that all milk bottles should be carefully sterilized or at least entirely filled with boiling water. Every person upon leaving the house should thoroughly cleanse the hands with hot water and soap; particularly should this be done if any food, candy, fruit, or other store is to be visited. Since all bottles discarded with the ashes are liable to be collected and used for various pur-poses all such should be broken whenever coming from an infected household.

When the diagnosis of contagion is first made the origin of the infection must be immediately traced along those lines which are open to investigation: water, ice, milk, shellfish, ice cream, butter, or other food supplies, personal playmates or associates, house surroundings, drainage, flies, and the wanderings of pet animals. All these avenues should be thoroughly inspected to discover the presence of any uncontrolled latent case or carrier. which might become a chronic disseminator. The food and milk supplies of the respective families infected with contagious disease should be reported immediately to the health officer, who should be properly clothed with authority in every municipality, however small, that he may at once commence investigation. That such action is especially necessary was shown in a recent epidemic of scarlet fever

in Collingswood, N. J.

This epidemic of scarlatina probably originated with a child whom the physician saw but once, and could make a diagnosis of only tonsillitis; it was confined to the customers of a single milkman; it was transmitted by infected bottles; and it subsided completely and immediately after investigation had led the local health officer to personally sterilize all bottles used by that milk station. During the three weeks of activity of the epidemic there developed sixteen mild and uncomplicated cases in thirteen families, there being eleven children and five adults affected, the age limits being three and

about fifty years. Every person infected used milk from the same dairy, each using raw milk for drink-

ing or cereals.

Collingswood, a rapidly growing town of some four thousand inhabitants, obtains a good water supply from the Merchantville system, which is above suspicion. The town is supplied by four or five dairies. The suspected dairy, situated in a small cemented cellar, in a village a mile distant, was supplied by two dairy farms. One farm, a half mile distant, produced seventy quarts daily; from the other about one hundred quarts were transported fifteen miles. Both barns were of the common antiquated structure, but received attention in ordinary cleanliness. No cases of disease could be located in either farm, nor at the dairy itself. The dairy was conducted by a man and his wife. All milk was brought to the dairy cellar in cans and there bottled. The bottles were merely washed with warm water, no care being taken toward sterilization. For the collection, washing, and distribution of bottles three days were required.

The epidemic supposedly originated with a little girl who on July 4th was believed to have tonsillitis. Parental denial of scarlatinal symptoms was counterbalanced by neighbors declaring they noticed desquamation of the hands and face that occurred two weeks later. On July 20th the first diagnosticated case appeared a mile distant in a boy of nine. Two days later his playmate was taken sick. After eight days two cases appeared in Collingswood involving a three year old boy and a young man. The next day a sister of the young man became ill in the same house, probably not from contact. The baby was followed by his father four days later, probably by contact. Another case appeared this same day, August 1st. The subsequent cases were: August 6th, a boy, age nine; the 7th, small boy; 9th, one boy and three girls; 10th, man, age fifty; 11th, small girl who lived with one of the girls taken ill on the 9th; 12th, another little girl. The July 4th case was probably responsible for those developing on the 20th and 22d, and these in turn transmitting by bottle to the 28th, 29th, and one August 1st case. One of these later households returning bottles daily to the dairyman undoubtedly was indirectly responsible for the succeeding nine cases. Transmission could hardly have occurred through contact or association except in three instances, the cases of July 22d, August 1st, and 11th. If this was contact transmission it occurred at the onset of the disease, and had only two or three day incubational periods. An investigation finally being made, sterilization of the dairy utensils about the thirteenth of August yielded the desired result.

In a milk epidemic an explosive onset indicates rather an infected general supply; a germ carrier in the dairy would be more apt to give an epidemic of longer duration, considering the number of infected persons, and without intervals of quiet before the early cases. The universal habit of returning to the dairy one bottle remaining in the house when the fever or rash appeared accounted for the early cases; the time in each instance giving three days for delivery of the infected bottle, and five latent days for incubation. The daily returning of infected bottles from one household accounts for the

more rapid later development of the epidemic. The results of sterilization add weight to the bottle hypothesis. Epidemics of scarlatina being transmitted through infected bottles rather than an infected supply are in the minority of those investigated, according to Trask, but three out of fifty-one epidemics being traced to this origin. In the compilation of Busey and Kober only three out of one hundred and seventy-seven scarlatinal milk epidemics were traced to bottle infection. The ratio is probably far from correct.

Such results show the necessity of at once controlling avenues of bacterial escape, the danger of permitting bottles to go from any household where illness occurs among children, the value of habitual sterilization by both householder and dairyman, and the necessity of competent sanitary officers with

legal authority.

5038 PINE STREET.

THE EFFECT OF MAMMALIAN PITUITARY ON TETANY AFTER PARATHYREOIDECTOMY AND UPON THE PUPIL.

By Isaac Ott, M. D., and John C. Scott, M. D., Easton, Pa.

Preliminary Note from the Physiological Laboratory, Medico-Chirurgical College of Philadelphia.

Pogowitsch found alterations in the pituitaries of thyreoidectomized dogs and rabbits of the nature of an increase of certain elements. Various other observers have also found changes in the pituitary in the disease of the thyreoid. Herring has shown that the posterior lobe of the pituitary furnishes a secretion which passes through the nervous portion to enter the infundibulum and ventricle of the brain. The secretion has a colloid appearance. Herring has also found definite histological changes in the pituitary body after thyreoidectomy. The most striking changes were in the nervous part of the posterior lobe, granular, hyaline, or colloid bodies becoming very numerous. Gley has shown that tetany is produced by removal of the parathyreoids, and MacAllum has confirmed this.

We performed parathyreoidectomy in several cats, which in about forty-eight hours was followed by tetany. We then injected five to ten grains of pituitary extract subcutaneously, which in the course of two hours stopped the tetany and acted as a tonic to the neuromuscular apparatus, replacing an awkward gait with trembling limbs by one of steadiness and normal movement. We also used the pituitary extract in injections by the jugular

vein with the same result.

Meltzer has shown that adrenalin dilates the pupil after removal, twenty-four hours previously, of the superiocervical ganglion. We have found in rabbits that when we excised the superior cervical ganglion on one side that after twenty-four hours' local applications of pituitary, or using it in injections into the jugular vein, or subcutaneously, a dilation of the pupil ensued. In the normal eye no effect ensued by local applications of a saturated solution.

These facts indicate a relation between the pituitary and the parathyreoids.

Correspondence.

LETTER FROM LONDON.

The General Medical Council.—The Annual Meeting of the Royal College of Surgeons.—The Feeding of Poor Out Patients.—An Interesting Legal Case.

LUNDON, December 1, 1908.

The winter session of the General Medical Council was opened last week, and this occasion is of special interest as it marks the fiftieth anniversary of its foundation. The jubilee was celebrated by a dinner at which the present members entertained their predecessors in office, and the president, Sir Donald Macalister, was in the chair. The General Medical Council was founded in 1858 with the object of enabling persons requiring medical aid to distinguish qualified from unqualified practitioners. Its function was to safeguard the public by insuring that the Register should be trustworthy. end the Council was intrusted with twofold powers. It had authority to supervise the admission tests whereby the "qualification" of practitioners was ascertained, and it had authority to remove from the Register those who after qualification had proved themselves unworthy. From these two powers the manifold activities of the Council as they are exercised to-day have slowly but inevitably been developed. It had at first to contend with grave difficulties, internal and external, and its judicial functions were often challenged and had to be sustained in the general courts of law. The decisions of the courts have declared the nature and extent of its jurisdiction and have upheld its judgments when they were contested. It has now developed into a body of some power and has done much to increase the prestige of medicine. The criticism and cooperation of the various licensing bodies have enabled it to formulate a standard of "qualification" which is generally accepted, not only within the United Kingdom, but in many other parts of the British Empire.

The president in his address mentioned some of the work the Council was undertaking relating to unqualified practice. By the assistance of the Colonial and Foreign Offices a large mass of authoritative information had been obtained respecting the laws regulating the conditions of obtaining medical and other degrees and the restrictions imposed on unqualified practitioners throughout the Empire and in foreign countries. This information, which reached the Council's office in various forms and in numerous languages, has been carefully analyzed and digested by the registrar and his staff for the use of the Committee on the Prevention of Unqualified Practice. As it is entirely derived from official sources, the digest will be of value to the public, and when it has served the immediate purpose of the committee it will be issued as one of the Coun-

cil's publications.

The annual meeting of the fellows and members of the Royal College of Surgeons of England was held at the college on November 19th. Mr. Henry Morris, the president, was in the chair and fifteen other members of the Council were present. The meeting was much larger than usual. The president was asked if any steps were being taken in

reference to the proposed cooperation between the two Royal Colleges and the University of London. In reply the president said that negotiations were proceeding and that if they arrived at any arrangement the future holders of the diplomas of M. R. C. S. and L. R. C. P. would also have the degrees of M. B. and B. S., but the arrangement would not be retrospective. Mr. Joseph Smith then moved the first resolution, "That this meeting thanks the Council for having for the first time in its history taken a poll of the members of the College, but regrets that the Council found itself unable to abide by the result." The poll referred to by Mr. Smith was with reference to the admission of women. The result of the poll showed a majority against their admission, but in spite of that the Council decided to admit them. This resolution was seconded by Dr. Sidney C. Lawrence and was carried. After other resolutions had been passed, the president stated that, with regard to the admission of general practitioners to the Council, at the last election a fellow of the college in general practice was a candidate and received a large measure of support.

The governors of the Westminster Hospital have. owing to the munificence of Lady Campbell Clarke, been enabled to make a practically new departure in hospital administration. It is the unfortunate experience of the physicians and surgeons who work in our large London hospitals that too many of the out patients stand in need, not only of medical treatment, but of extra food, which many of them are by reason of limited means unable to provide for themselves. It is to meet this difficulty that the Lady Campbell Clarke Fund has been formed by her at the Westminister Hospital. The object of the fund is to provide food in such necessitous cases under the direction of the visiting staff. The meals are to be given in the hospital itself, but provision is made which will enable such things as milk to be taken away for the benefit of children and others who may require it frequently. There is no doubt that such a fund is badly needed in London and

will fill a decided want.

An interesting case came before the courts last week. Action was brought by Dr. A. E. Neale against the Bartitsu Light Cure Institute (Limited) to recover damages for breach of contract to employ the plaintiff as consulting medical superintendent of the institute. The company had agreed to employ the plaintiff on terms approved by the Ethical Committee of the British Medical Association. He now alleged that the defendants had rendered it impossible for him to fulfil his agreement with them by reason of their breach of these provisions. The defendants denied this and counterclaimed for damages for breach on the plaintiff's part of the agreement caused by his alleged incompetence and want of skill. To this the plaintiff replied that, if any injury had been caused by his treatment of certain diseases, it arose from the impossibility of curing such diseases with the defendant's machinery and appliances. It was proved that the institute had caused a large number of pamphlets to be printed and distributed advertising the institute, and that this was done without the consent or knowledge of Dr. Neale. Dr. George Bateman, secretary of the Medical Defense Union, one of the witnesses. stated that the contents of the pamphlet in question were such that if it had been issued with Dr. Neale's consent he would have rendered himself liable to removal from the *Medical Register*. The result of the case was that Dr. Neale was awarded £600 damages. It comes rather as a surprise that the Ethical Committee of the British Medical Association should under any circumstances allow a medical man to associate himself with such an institute.

Therapeutical Aotes.

Marginal Blepharitis.—This affliction, which is characterized by redness of the edge of the lids of the eyes and the formation of crusts or scales at the roots of the lashes, and usually affects young children at school, is commonly associated with a slight degree of myopic astigmatism, which makes it essential that the refraction should be tested, and proper glasses ordered, if necessary. In mild cases, according to The Hospital for November 14, 1908, the glasses alone are almost sufficient to insure a cure, but if there is much redness and incrustation of the edges of the lids it is advisable to wash these crusts off with a warm alkaline borated lotion. The following formula is the most usual:

| \mathbf{R} | Sodium bica | arbonat | e, | | | | | | ٠ | .gr. | V11 |
|--------------|--------------|----------|----|------|------|------|------|--|---|----------|-----|
| | Sodium bor | ate, | | | | | | | | .gr. | VII |
| | Sodium chlo | oride, . | | | | | | | | .gr. | VII |
| | Refined sug | | | | | | | | | | |
| | Water, | | | | | | | | | | 311 |
| M. | Ft. solutio. | | | | | | | | | | |

As alternatives to the foregoing prescription ointments may be ordered as follows:

| ment | s may be ordered as follows. |
|--------------|------------------------------|
| \mathbf{R} | Ammoniated mercury,gr. ss; |
| | Lead acetate,gr. xlv; |
| | Expressed oil of almond, |
| | Petrolatum,3x. |
| M. | |
| P, | Salicylic acid, gr. xv; |
| | Zinc oxide |
| | Pulverized starch, |
| | White petrolatum,3v. |
| 7.7 | , |

The author of the article cited reiterates the necessity of first correcting any error of refraction that may be found. Without this precaution other treatment is "merely ploughing the sand."

For Fissures of the Tongue.—The application to the surface of the fissures of the following solution by means of a camel's hair pencil is recommended in Annales de thérapeutique dermatologique et syphilioraphique:

| | 1 | | | | | |
|-----|-----------|------------|----------|------|---------|----|
| R | Carbolic | acid, crys | stals, . | | gr. xl | ; |
| | Tincture | of iodine | , | | | |
| | Glycerin, | | | | āā 3iii | i. |
| 3.1 | | | | | | |

The Treatment of Acne.—The general treatment should consist, according to Jeanselme (Bulletin général thérapeutique, November 8th, 1908), of the administration of laxatives, charcoal, and magnesia. Intestinal antiseptics should not be used. The food should be simple, sauces and condiments being interdicted. Fruits and vegetables should be partaken of freely as well as pure water and weak tea. The fat of pork, eggs, sea fish, canned foods, fermented cheeses, etc., should be avoided. Lymphatic

patients should bathe freely and be treated with arsenic and codliver oil. Anæmic patients should be treated with preparations of iron and arthritic patients with alkalies.

Every evening an ointment should be applied consisting of a mixture of eighty parts of cold cream with from one to three parts of precipitated sulphur, or gauze moistened with the following lotion may be applied:

| | piica. | | | | | | | | | | | | | | |
|---------|-----------|-----|-----|-----|----|------|------|------|------|--|------|------|----|--------|--|
| P_{i} | Precipita | ted | sul | phy | ٢, | | | | | | 31 | to | n. | 3iv | |
| | Glycerin, | | | | | | | | | | | | .3 | Siiss | |
| | Spirit of | 731 | nph | or. | | | | | | | | | | 3i | |
| | Water, | | | 4 | ٠. | | | | | | | | | . žiss | |

This should be washed off with hot water the following morning.

An ichthyol ointment containing from five to ten per cent. of ichthyol may be used.

If the local application of sulphur causes excessive irritation, the following ointment may be applied alternately with the sulphur cream:

| R | Zine oxide, | | | | | | | | | | | , | | | |
|------|-------------|--|------|--|--|--|--|--|--|--|--|-----|--|---------|--------|
| | Talc, | | | | | | | | | | | . } | | .āā | 3iiss. |
| | Petrolatum, | | | | | | | | | | | -) | | | |
| TAT. | | | | | | | | | | | | | | | |

In acne punctata the comedones are expressed and the surface is thoroughly washed with either Castile or green soap, taking proper precautions in the latter case to prevent undue irritation. In pustular acne a teaspoonful of yeast is given before each meal and the face steamed with boiling water for five minutes morning and evening. If this treatment fails the pustules may be opened with a fine galvanocautery, or with a scarificator. Hypertrophic acne should be treated surgically, the diseased tissues being removed. The results of the treatment of keloid acne are always uncertain. Scarification is sometimes helpful, but if the improvement is very slow it should be discontinued. The keloids are sometimes absorbed spontaneously, if not irritated. The simple zinc oxide plaster sometimes proves effective.

For the Pain of Uterine Cancer.—Lutaud prescribes the following:

| | O . | |
|---------|---|-----|
| P_{i} | Tincture of thuja, | |
| | Solution of potassium arsenite, | 3; |
| | Syrup of acacia, | |
| | Water, | ii. |
| M. | et Sig.: One teaspoonful thrice daily before meals. | |

The Local Treatment of Coccygodynia.—The local medical treatment of the painful affection of the coccyx and the surrounding parts which is termed coccygodynia, and which is a symptom almost peculiar to women, consists, according to *The Practitioner* for December, 1908, in the application of ointments, suppositories, blisters, cauterization, or electricity. It is observed that a sedative ointment rubbed into the skin of the coccygeal region sometimes gives relief. The following ointment is said to be efficacious:

| $\mathbf{P}_{\!\scriptscriptstyle E}$ | Tincture of | aconite, . | ٠. | | | | | | | | . 3 | is: | ; ; |
|---------------------------------------|-------------|------------|----|--|------|------|--|--|--|--|-----|-----|-----|
| | Belladonna | omtment, | | | | | | | | | | | i. |

M. ft. unguentum.

The application of the actual cautery is said to constitute the most certain remedy. A Paquelin cautery is used to cauterize the skin over the sacral foramina on each side the skin being burnt deeply, and the resulting eschar is then treated as an ordinary granulating wound.

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NEW YORK, SATURDAY, DECEMBER 19, 1908.

ANAPHYLAXIS.

A Harvey lecture was delivered by Dr. M. J. Rosenau on Saturday evening, December 5th, on a subject with which his name has been intimately associated, namely, anaphylaxis. Those who were present heard, not a long, wearisome recital of laboratory experiments or of opposing theories, but a concise exposition of our present knowledge of anaphylaxis. supersusceptibility, supersensitiveness, or Allergie, as the condition has variously been

With the vast amount of scientific research done on the various phases of immunity during the past twenty-five years, it is strange that the phenomenon which is now known by these terms should have escaped attention. It is true, the rashes sometimes produced by injections of diphtheria antitoxine have been studied, but their cause has generally been believed to be some toxic substance, probably a globu-The reason for the long period of incubation has not been understood. Practically all of our present knowledge of this subject has been gained in the past three or four years. The term anaphylaxis was introduced by Richet, who intended to express by it a condition the opposite of prophylaxis. Working with the poison of the sea anemone, he found that when dogs were injected with this poison the first injection produced such changes in the dog's organism that a much smaller subsequent dose produced rapidly fatal symptoms. He found that this

result was only produced if at least a certain interval had elapsed between the two injections.

It has since been found that the condition is in no sense anaphylaxis, but is merely a quickened response on the part of the body so injected. Von Pirquet therefore prefers to use the term Allergie (altered energy), and this is the term in common use in Germany. The condition is very well illustated by what takes place in vaccination. an individual is vaccinated for the first time, the well known vesicle surrounded by the inflammatory areola appears after a distinct period of incubation. When a vaccinated individual is revaccinated, there appears to be no response whatever, but careful observation will show that this is not the case. There is a response, but the changes occur so rapidly after the revaccination that they usually pass unnoticednot anaphylaxis, therefore, but Allergie,

When, in 1906, Rosenau and Anderson published their well known study on the Cause of Sudden Death Following the Injection of Horse Serum, few realized that this should mark a most important contribution to our conceptions of immunity. These authors found that guinea pigs which had once been injected with a small dose of horse serum were liable to an acute fatal poisoning when again injected with horse serum some time later. The original injection, it was found, could be as small as a millionth of a cubic centimetre. The interval between the injections was very important, not less than about ten to twelve days being necessary.

While he was visiting this country, in 1903, Ehrlich's attention was drawn by Theobald Smith to the fact that the guinea pigs which had been used for testing toxine-antitoxine mixtures were exceedingly susceptible to subsequent injections of horse serum, the second injection often proving fatal. Returning to Frankfort, Ehrlich gave this problem to his pupil Otto, who, almost simultaneously with the American investigators, published a paper containing conclusions entirely in accord with those of Rosenau and Anderson. Otto therefore speaks of the "Theobald Smith phenomenon."

It is gratifying that most of the important contributions concerning anaphylaxis have come from this country. Shortly after Rosenau's publication a masterly article appeared by Gay and Southard, and these authors were the first to describe pathological lesions occurring as a result of the intoxication. According to Gay and Southard, horse serum contains a substance which they term "anaphylactin," which acts as an irritant to the bodily cells. As a result of the irritation, after some days, the cells are in such a condition that a second injection of horse serum may easily produce fatal results. Subsequent investigations showed that this action was not confined to horse serum, but that the condition was apparently a fundamental fact in almost all kinds of immunity. Rosenau and Anderson, in particular, showed that an animal could be sensitized to three different proteids at the same time, and would then be in a condition to react to a subsequent injection of each of these.

There is still some question whether the substance which sensitizes the animals is the same as that which subsequently poisons them. Most observers think that different substances are involved. though Rosenau and Anderson believe that the substances are identical. The latter observers also noted the interesting fact that animals could be sensitized by feeding them with the proteid. Thus, guinea pigs were fed with raw beef and thus sensitized to a subsequent injection of ox serum. meat must be given raw, as cooking destroys the sensitizing substance. In view of this fact, one might expect that in countries where raw horse meat is consumed (smoked sausage or raw chopped horse meat) serum accidents would be more frequent in connection with the use of diphtheria antitoxine. So far as is known, however, this is not the case, though it is not easy to gather statistics on the subject. It is not certain that man is sensitized in the same way as guinea pigs. It is well known that a number of sera, such as the antistreptococcus sera and the antituberculous serum of Maragliano, are constantly being administered in repeated injections, and thus far no such conditions of anaphylaxis have been observed. In this connection, it is well to remember that the interval between the injections, as well as the size of the dose, is highly important in producing the conditions in animals.

The investigations in anaphylaxis are perhaps destined to play an important part in a number of other directions. Thus, it is possible that some light may be thrown on a number of obscure disorders, such as eclampsia and epilepsy. Furthermore, a considerable change has already been effected in our views concerning endotoxines. It is well known that in the absence of demonstrable extracellular toxines, we have assumed that certain bacteria, such as typhoid, cholera, meningococcus, etc., must needs possess toxines closely bound up with their protoplasm, i. e., endotoxines. Now that we know that a harmless proteid can sensitize the bodily cells to a subsequent injection with the same proteid, leading to severe symptoms of intoxication and death, we no longer need to assume the existence of these endotoxines. Rosenau and Anderson found that this supersensitiveness could be transmitted from parent to young, though only through the maternal side. The male parent does not transmit this quality.

Rosenau suggests that there may perhaps be a transmitted supersensitiveness to tubercle bacillus substance in the cases in which tuberculous disease is said to run in families. Certainly all who have investigated the subject admit that environment will not explain all the instances of family tuberculous disease.

In connection with the use of antitoxine, it is interesting to note that the cases of sudden death following the administration of serum have several times been in asthmatic individuals. Just what their peculiar susceptibility is due to is not known, but the point is well worth remembering. The same is true of persons who have ill defined feelings of distress when in the vicinity of horses.

These investigations have also modified our views concerning the nature of the period of incubation. In most of the infectious diseases it has been assumed that the period of incubation represents the time necessary for the virus to increase sufficiently to be able to produce symptoms. Ehrlich long ago showed that toxines also produced their symptoms only after a period of incubation, and yet a multiplication of the virus was out of the question. In view of what has been said, it will be seen that the views of Gay and Southard furnish an adequate explanation of the incubation period, even of poisonings by proteids that are not poisonous.

THE TARIFF ON SCIENTIFIC BOOKS AND INSTRUMENTS.

In regard to a revision of the tariff, the average man understands by that term a lowering of duties. Already, however, there is a rumor that certain interests are endeavoring to have a duty placed on foreign medical books and to have this duty payable by libraries and other institutions as well as by individuals. At present medical books printed in languages other than English may be imported free of duty. Books printed in English, however, may be imported only upon the payment of a duty of twenty-five per cent., but libraries may import such books free of duty. Scientific instruments also may be imported only upon the payment of a duty of from forty-five to sixty per cent. ad valorem. Scientific men as a rule pursue their studies largely for the purpose of contributing to the sum of the world's knowledge and for the purpose of improving the conditions under which the individual lives. They are not generally ambitious for a large return for their very important contributions to the advancement of civilization. We have a right to expect that the government will assist these men in the performance of their work by placing the instruments and books necessary for their use ready to their hands at the lowest possible figure. We should like to see the duty removed from scientific books printed in the English language, to see the duty left off scientific books published in foreign languages, and to see the duty removed from scientific instruments. In order that there shall be no ambiguity about the meaning of the schedule, we should like to see the words "medical and surgical" added to the word "scientific" as applied to books and instruments. Medical, surgical, and scientific books and instruments should, in our opinion, be admitted to this country absolutely free of duty.

At the December meeting of the College of Physicians of Philadelphia, the matter was brought up by Dr. W. W. Keen, and a resolution was adopted authorizing the president of the college to appoint a committee to prepare a suitable resolution or resolutions opposing the proposed abolition of the present exemption from duty of books in other languages than English, and the abolition of the exemption of libraries from the payment of duty on imported books. We should advise other medical, surgical, and scientific societies to adopt similar methods, so that the members of the Congress of the United States may know in unmistakable terms that scientific opinion is unanimously opposed to increasing the duties upon these articles.

A PROPOSED MEDICAL RESERVE CORPS OF THE NAVY.

The Bureau of Medicine and Surgery of the Navy Department has not been slow in perceiving the advantages of the new Army Medical Reserve Corps. In his last annual report, for the fiscal year 1908, Surgeon General Rixey remarks that it is hoped that the naval militia bill may receive the favorable consideration of the Sixtieth Congress during its second session, and he adds that "it is the intention of the bureau to submit to the department for approval the draft of a bill providing for a reserve corps." There ought to be no doubt, we should say, of the favorable action of Congress with regard to such a bill, for certainly the navy as well as the army always finds itself in pressing need of additional medical officers whenever the immediate prospect of hostilities arises.

So far as we can see, no mistakes have been made in the organization of the Army Medical Reserve Corps, so that there is no error to deter the naval Bureau of Medicine and Surgery from organizing its proposed reserve corps on the principles that have been followed in the army, regard being had, of course, to the peculiarities of the naval medical service. As at present constituted, the Bureau of

Medicine and Surgery of the navy is remarkably efficient, and we may be sure that any bill framed by it will be thoroughly entitled to enactment by Congress.

THE ACTING ASSISTANT SURGEONS OF THE NAVY.

The present acting assistant surgeons of the navy are not on the footing of the old contract surgeons of the civil war. They are appointed officers, and their appointment is dependent upon their passing a physical and professional examination satisfactorily. This has been the case for the last ten years. The examining boards, consisting of medical officers of the navy, are in practically continuous session at New York, Philadelphia, Washington, Chelsea, Mass., and Mare Island, Cal. Consequently, as Surgeon General Rixey states in his last annual report, for the fiscal year ending June 30, 1908, "no candidate is discouraged nor likely recruits sacrificed by deferred examination."

On the recommendation of the Bureau of Medecine and Surgery, the Secretary of the Navy issued a notable order on October 8th of this year. The order cancels the permits for examination of those candidates for appointment as assistant surgeon who had not reported for examination, and provides that "hereafter candidates for admission to the Medical Corps of the United States Navy will be examined only for and will enter as acting assistant surgeons, and on the 1st day of October following they will be ordered to the Naval Medical School for a period of six months' instruction. At the expiration of this tour of duty the whole class will be examined for the position of assistant surgeon." Thus, it will be seen, provision is made for a very desirable probationary service, and, since conditions so favorable for candidates have been established, the bureau is abundantly warranted in its intention of requiring from successful candidates a contract to serve for a certain length of time.

H. EMORRHOIDS IN CHILDREN.

A curious example of the disagreement of experienced men concerning a very simple matter of observation is afforded in an article by Dr. Denis G. Zesas, published in the Archives générales de chirurgie for October 25th. It was in 1873, in the Gazette des hôpitaux, says Zesas, that Lannelongue asked the question, Do children have hæmorrhoids? Bouchut replied that hæmorrhoids did not exist in children, and that any diagnosis of them in childhood was erroneous. Gosselin was of the same opinion, and he said: "Whenever children said to

have hæmorrhoids have been brought to me, I have found nothing but a rectal polypus." Giraldès, however, wrote as follows: "Hæmorrhoids, very rare in the child, form bluish tumors due to dilatation of the veins, and are readily to be seen if we separate the folds of the verge of the anus." Jobert de Lamballe and Dupuytren were more uncertain, the former declaring that hæmorrhoids were so rare in children that some authors denied their existence. Lancereaux called them exceptional, and Curling rare. Other authors are cited to the same effect.

On the other hand, a writer called "Ernka" in the text and "Truka" in the bibliography (neither of which names we find in the Index Catalogue) is said to have reported thirty-nine cases, and Potain, speaking of the heredity of hæmorrhoids, relates the case of two children of the same parents who were born with hæmorrhoids. Henoch is cited as having met with only three cases in his long career, in children aged three, six and seven years respectively, and Houzel as having found but four instances among about 500 children examined, though he speaks of a "hæmorrhoidal state" which he regards as likely to end in the formation of true hæmorrhoids. Reinbach is inclined to believe that hæmorrhoids would oftener be found in children if the region of the anus was more frequently examined.

THE SERUM TREATMENT OF HAEMO-PHILIA.

In our issue for December 12th, on page 1137, we commented on a recent article by Dr. Dejardin, of Liège, from which it appeared that injections of normal serum were efficacious in the treatment of hæmophilia. Dr. F. L. Wachenheim, of New York, has been kind enough to call our attention to an article of his, entitled The Hæmorrhagic Diseases and their Allies in the Light of Modern Pathology, that appeared in the Medical News for January 16, 1904. Dr. Wachenheim thinks that this article of his anticipated Weil and others in the matter of the treatment of hœmophilia with "any serum."

Dbituary.

JOHN T. WHEELER, M. D., of Chatham, N. Y.

Dr. Wheeler died after a brief illness, from pneutionia, on December 3d. He was in the prime of life at the age of fifty-eight. His life had been exceedingly useful. In his profession he was a leading man of his part of the State. In his community he was, moreover, a citizen of public spirit, and in educational work especially was instrumental in establishing a village school and public library of high

character, while in varied ways his loss to the public will be felt. In public health his interest culminated more recently in his being placed in charge of the Division of Communicable Diseases of the State Department of Health. In his professional work he was always ready to bear his part and filled the position of president of the third district branch of the State medical society when it was first organized, and had this year been vice-president of the State society. He was a gifted writer and wrote with clearness and elegance. He had a pleasing presence, a winning manner, and a good heart. On the day of his funeral all business places were closed and there was a large gathering of saddened friends to pay the last tribute.

JOHN SUTHERLAND, M. D., of Bedeque, P. E. I.

On the morning of October 5th Dr. Sutherland was found dead in his bed in Montreal, where he was making a short stay on his return from a visit to Chicago. Up to that time he had appeared to be in good health. He was a native of Stanley Bridge, P. E. I., and was sixty-two years old. He was a graduate of the Medical Department of the University of Pennsylvania, of the class of 1876, and had been a successful practitioner in Bedeque for more than thirty years.

Hews Items.

Changes of Address.—Dr. Paul Bartholow, to 23 West Thirty-sixth Street, New York.

The Toronto Free Hospital for Consumptives.—Subscriptions to the H. C. Hammond Endowment Fund for this hospital so far received amount to \$41,740.

The Society of Physicians of Canandaigua, N. Y., held a meeting on Thursday, December 10th. The paper of the evening was read by Dr. D. A. Eiseline on Status Lymphaticus.

"Tag Day" in San Francisco,—A tag day was held recently in San Francisco, which added \$28,000 to the Children's Hospital Fund. Of this amount \$12,000 was collected by school children.

The Philadelphia County Medical Society's committee on public policy and legislation consists of the following members: Dr. James B. Walker, Dr. L. Webster Fox, Dr. William S. Higbee, Dr. James M. Anders, and Dr. John Ruoff.

The New York Academy of Medicine.—A meeting of the Section in Obstetrics and Gynacology will be held on Thursday evening, December 24th. After the presentation of specimens by Dr. L. J. Ladinski and Dr. Leonard S. Rau, Dr. J. Van Doren Young will read a paper entitled A New Operation for the Correction of Retrodeviation of the Uterus.

The Buffalo Association for the Relief and Control of Tuberculosis is the name of a society formed in Buffalo recently. At a meeting of prominent men and women who are interested in the establishment of a hospital for consumptives, at which Dr. Matthew D. Mann presided, a committee of fifteen was appointed to effect permanent organization.

The Buffalo, N. Y., Academy of Medicine.—A meeting of the Section in Obstetrics and Gynacology was field on Tuesday evening. December 15th. The programme included two papers, one entitled Manual Dilatation of the Parturient Canal, by Dr. P. W. Van Peyma, and the other entitled Education of Women Relative to Diseases Incident to the Menopause, by Dr. De Witt G. Wilcox.

The Medical Society of the County of Kings, N. Y.— The mnety-second regular meeting of the Section in Padiatrics was held on Friday evening, December 18th. The principal feature of the scientific programme was a paper entitled The Care of the Rheumatic Child, by Dr. Le Grand Kerr.

The Northern Medical Association of Philadelphia held a stated meeting on Friday evening, December 11th. Dr. David Reisman read a paper on the Ætiology and Pathology of Cirrhosis of the Liver. Dr. Judson Daland read a paper on Symptomatology and Treatment of Cirrhosis of the Liver.

The Philadelphia Academy of Surgery held a stated meeting on Monday evening, December 7th. Dr. Gordon J. Saxon gave a demonstration of an apparatus for the continuous administration of saline by the rectum. The remainder of the programme consisted of the presentation of patients and the reports of cases.

Contagious Diseases in Chicago.—During the week ending December 5, 1908, there were reported to the Department of Health 778 cases of contagious diseases, as follows: Diphtheria, 192 cases; scarlet fever, 183 cases; measles, 102 cases; chickenpox, 93 cases; whooping cough, 9 cases; pneumonia, 28 cases; tuberculosis, 93 cases; typhoid fever, 52 cases.

The Society of Medical Jurisprudence, New York, held its two hundred and seventeenth regular meeting on Monday evening, December 14th, Officers for the ensuing year were elected as follows: President, Dr. Robert A. Murray; vice-president, Mr. Alfred E. Ommen; treasurer, Mr. John C. West; recording secretary, Mr. Charles P. Blaney; corresponding secretary, Mr. John S. Durand.

The Rochester, N. Y., Academy of Medicine.—The regular monthly meeting of Section III (Obstetrics, Gynacology, and Padiatrics) was held on Wednesday evening, December 16th. Cæsarean section was the topic selected for consideration. Dr. William M. Brown presented reports of interesting cases, and Dr. Edward W. Mulligan opened the general discussion.

The Medical Society of the County of Chautauqua, N. Y., held its annual meeting in Jamestown, N. Y., on December 9th, and elected the following officers for the ensuing year: President, Dr. Morris N. Bemus, of Jamestown; first vice-president, Dr. Edgar Rood, of Westfield; second vice-president, Dr. E. A. Scofield, of Bemus Point; secretary and treasurer, Dr. H. A. Eastman, of Jamestown. The Philadelphia Neurological Society held a meet-

The Philadelphia Neurological Society held a meeting on Friday evening, December 18th. After the exhibition of a number of patients, the following papers were read: Association and Reinforcement in Aphasia, by Dr. F. X. Dercum; Encephalitis, by Dr. S. D. Ingham; Tumors of the Lateral and Third Ventricles, by Dr. T. H. Weisenburg and Dr. W. F. Guilfoyle; Disease of the Optic Nerve as the Earliest Symptom of Multiple Sclerosis, by Dr. Alfred Gordon.

Medals Awarded by the Royal Society.—Announcement is made that the president and council of the Royal Society have awarded medals for 1008 as follows: The Copley medal to Dr. Alfred Russel Wallace; the Rumford medal to Professor H. A. Lorentz; Royal medals to Professor John Milne and Dr. Henry Head; the Davy medal to Professor W. A. Tilden; the Darwin medal to Professor August Weissman; and the Hughes medal to Professor Eugen Goldstein.

The Section in Otology and Laryngology of the College of Physicians of Philadelphia met on Wednesday evening, December 16th. Dr. Walter Roberts reported a case of temperosphenoidal abscess, and presented the patient. Dr. S. Mac Cuen Smith made a few remarks on mastoid pain. Dr. Joseph S. Gibb read a paper on the treatment of recurring attacks of lacunar tonsilitis, and described the method of removing submerged tonsils by dissection and snare.

Officers of the Richmond, Va., Academy of Medicine and Surgery.—At the monthly meeting of the Academy, which was held on the evening of December 8th, the following officers were elected to serve for the ensuing year: President, Dr. McGuire Newton; first vice-president, Dr. Marvin E. Nuckols; second vice-president, Dr. Manfred Eall, Jr.; third vice-president, Dr. Allen Freeman; secretary, Dr. Wark W. Peyser, reelected; assistant secretary, Dr. W. Brownley Foster; librarian, Dr. G. Paul La Roque; treasurer, Dr. W. A. Sheppard.

The Norwegian Hospital Alumni Association, Brooklyn, held its ninety-ninth regular meeting on December oth, at the residence of Dr. Arthur Longstreet. Dr. Robert E. Coughlin was elected president; Dr. John H. Ohly, vice-president; and Dr. Louis Stork, secretary and treasurer. The one hundredth meeting of the association, which will be held in January at the home of Dr. Sewell Matheson, will be celebrated in a manner fitting to the occasion.

Charity Ball Beneficiaries.—The Philadelphia Charity Ball will be held on January 27th, in the Academy of Music, Philadelphia. The beneficiaries selected by the committee having the ball in charge are the Children's Orthopædic Ward of the Hospital of the University of Pennsylvania, the Children's Ward of the Jefferson Hospital, the Kensington Hospital for Women, and St. Christopher's Hospital. The German American Charity Ball will be held in the Academy of Music, Philadephia, on Monday evening, February 18th. The beneficiaries are the Rush Hospital for Consumptives and the Samaritan Hospital.

Scientific Society Meetings in Philadelphia for the Week Ending December 26, 1908:

Monday, December 21st.—Medical Jurisprudence Society; Medical Society of the Woman's Hospital; Ornithological Section, Academy of Natural Sciences.

Wednesday, December 23d.—Philadelphia County Medical Society.

THURSDAY, December 24th.—Pathological Society; American Entomological Society and the Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute; Philadelphia Botanical Club.

Alumni Association of the New York Skin and Cancer Hospital.—At a meeting of this association, which was held on Wednesday evening, December 16th, under the presidency of Dr. H. H. Whitehouse, the following papers were read: Lupus and Epitheliomata, their Treatment by Excision and Paste, by Dr. B. Merrill Ricketts, of Cincinnati; Influence of Gravity on Lesions of the Skin, by Dr. R. M. Vermilye; The Practical Physician versus the Para Pathologist, by Dr. J. Francis Airken; The Conjunctival Tuberculin Reaction in Certain Diseases of the Skin, by Dr. Jerome Kingsbury; Anæsthesia for Plastic Operations on the Face, by Dr. James T. Gwathmey.

The American Physiological Society will hold its twenty-first annual meeting in Baltimore during convocation week, beginning December 20, 1908. Joint sessions will be held with the American Society of Biological Chemists, with the Section in Physiology and Experimental Medicine of the American Association for the Advancement of Science, the Society of American Bacteriologists, and the Association of American Anatomists. According to the preliminary programme, which has just been received, the meeting promises to be one of great interest and value. Further information regarding the meeting may be obtained from the secretary of the society, Dr. Reid Hunt, Twenty-fifth and E Streets, N. W., Washington, D. C.

The Hospital Ship Relief Declared Unseaworthy.—
The hospital ship Relief, which suffered so severely in the typhoon on its way to Manila, has been declared unseaworthy, and will be used as a floating hospital somewhere in the Philippines, probably at Olongapo. The Solace will be fitted out for active service at the Brooklyn Navy Yard, and assigned to duty with the Atlantic fleet when that fleet arrives in home waters in February. It will probably accompany the fleet to the Cuban drill grounds. It is reported that the Surgeon General of the Navy will recommend the construction of two additional hospital ships, to cost \$1,000,000 each. The need for these ships was referred to in President Roosevelt's message to Congress.

The Southside Virginia Medical Association.—The twenty-third meeting of this association, which was held in Emporia, Va., on Tuesday, December 8th, was one of the most successful in the history of the organization. The attendance was large and the programme unusually good. Officers for the ensuing year were elected as follows: Dr. C. W. Astrop, of Surry, president; Dr. T. M. Raines, of Wakefield, first vice-president; Dr. E. M. Parker, of Emporia, second vice-president; Dr. R. H. Sims, of Powellton, fourth vice-president; Dr. O. C. Wright, of Jarratt, treasurer; and Dr. E. F. Reese, of Courtland, secretary. The next meeting of the association will be held in Petersburg in March, 1909.

The Medical Association of the Greater City of New York.—A stated meeting of the association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, December 21st, at 8:30 p. m. Dr. John B. Deaver, of Philadelphia, will read a paper on Gastric Neuroses. Dr. Anthony Bassler will read a paper entitled Indications for Surgery in Gastric Disease. Among those who will participate in the general discussion are Dr. Robert F. Weir, Dr. George E. Brewer, Dr. Joseph B. Bissell, Dr. Max Einhorn, Dr. Robert Coleman Kemp, and Dr.

The Mortality of Chicago.—During the week ending December 5, 1908, there were reported to the Department of Health of the City of Chicago 520 deaths from all causes, as compared with 520 for the preceding week and 546 for the corresponding period in 1907. Of the total number of deaths 142 were of children under five years of age. The principal causes of death were: Apoplexy, 5 deaths; Bright's disease, 41 deaths; bronchitis, 7 deaths; consumption, 49 deaths; cancer, 23 deaths; diphtheria, 20 deaths; heart diseases, 57 deaths; measles, 2 deaths; intestinal diseases, acute, 38 deaths; measles, 2 deaths; nervous diseases, 20 deaths; pneumonia, 87 deaths; scarlet fever, 9 deaths; suicide, 4 deaths; typhoid fever, 6 deaths; violence (other than suicide), 25 deaths; whooping cough, 1 death; all other causes, 124 deaths.

The Tri-Professional Medical Society of New York held a stated meeting at the Hotel Astor on Tuesday evening, December 15th. Interesting cases and specimens were presented by Dr. J. M. Rector, Dr. J. Monroe Lieberman, and Dr. Augustin H. Goelet. Dr. Edward D. Franklin read a paper entitled Reproduction Shortens Life, which was discussed by Dr. B. S. Talmey, Dr. W. J. Lederer, and Dr. Augustin H. Goelet. Dr. Harold D. Corbusier read a paper on Some Effects of the Sun upon the Body, and the discussion which followed was opened by Dr. G. Morgan Muren, Dr. J. Monroe Lieberman, and Dr. J. Carlisle De Vries.

Vital Statistics of New York.—During the week ending December 5, 1908, there were reported to the Department of Health of the City of New York 1,213 deaths from
all causes, as compared with 1,430 for the corresponding
period in 1907. The annual death rate in 1,000 population
was 14,31 in the whole city, and in each of the five boroughs it was as follows: Manhattan, 13,65; The Bronx,
15,61; Brooklyn, 14,68; Queens, 13,68; and Richmond, 23,13.
The total number of deaths of children under five years of
age was 309, and of these 208 were under one year of age.
There were 87 violent deaths, of which 23 were due to suicide, 7 to homicide, and 57 to other accidents. There were
121 still births. Eight hundred and ninety-eight marriages
and 2,465 births were reported during the week.

An Opening for a Woman Physician in the Government Service.—The United States Civil Service Commission announces that an examination will be held on January 13, 1909, to secure eligibles from which to make certification to fill a vacancy in the position of medical interne (female) in the Government Hospital for the Insane, Washington, D. C., at a salary of \$500 per annum, with maintenance. The commission has experienced considerable difficulty in filling this vacancy, and properly qualified persons are urged to enter this examination. Unmarried women only will be admitted to the examination. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application Form

cants should at once apply to the Onted States CIVII Service Commission, Washington, D. C., for application Form 1312, or for further information regarding the examination.

The Mortality of the State of New Jersey.—During the mouth ending November 15, 1908, there were 2,602 deaths reported to the State Board of Health, as compared with an average of 3,030 for the previous twelve months. Of the total number of deaths 762 were of children under five years of age, and of these 558 were under one year of age. The principal causes of death were as follows: Typhoid fever, 40 deaths; meales, 6 deaths; claptheria, 41 deaths; malarial fever, 3 deaths; tuberculosis of the lungs, 275 deaths; this cancer, 118 deaths; cerebrospinal meningitis, 25 deaths; diseases of the nervous system, 202 deaths; diseases of the respiratory system (pneumonia and tuberculosis excepted), 133 deaths; pneumonia, 183 deaths; infantile diarrhea, 160 deaths; diseases of digestive system (infantile diarrhea, 160 deaths; diseases of deaths; Bright's diseases, 182 deaths; suicide, 25 deaths; all other the control of the c

The Society of Normal and Pathological Physiology, Philadelpnia, held its third meeting for 1908-1909, on Monday evening, December 14th. The programme consisted of the following papers: Streptothrix Infection of the Tonsil, by Dr. N. Gildersleeve; Some of the Zymogenic Activities of Bacteria, by Dr. D. H. Bergey; The Central Nervous System in the Albino Rat Compared with that in the Wild Mus Norwegicus, by Dr. Shinkishi Hatai; Protozoan Parasites of Man, with microscopic demonstration, by Dr. John M. Swan.

The Brooklyn Pathological Society.—The four hundred and eighty-ninth regular meeting of this society was held on Thursday evening, December 10th. Dr. Adolph Bonner reported a case of ruptured uterus, and exhibited a specimen. Dr. Burton Harris reported a case of hæmatoma, due to infection by the distoma hæmatobium. A case of tuberculosis of the breast was reported by Dr. William Lintz, who presented a specimen. Dr. J. Eddy Blake read a paper on the Bacteriological Diagnosis of Diphtheria, in which he recounted some recent experiences with the laboratory reports of the New York City Department of Health. Dr. Le Grand Kerr read a paper on the Diagnosis of Rheumatism in Children, and Dr. Charles Dwight Napier read a paper on the Diagnosis of the Rheumatic Joint.

Infectious Disease in New York:

If c are indebted to the Bureau of Records of the Department of Health for the following statistics of new cases and deaths reported for the two weeks ending December 12, 10.08.

| | D | ec. 5- | De | C. 12- |
|--------------------------|--------|---------|--------|---------|
| | Cases. | Deaths. | Carri. | Deaths. |
| Tuberculosis pulman, lis | 574 | 153 | 493 | 143 |
| Diphtheria | 305 | 39 | 381 | |
| Measles | | 10 | | 10 |
| Scarlet fever | | 7 | 22_ | 10 |
| Smallpox | | | | |
| Varicella | | | - 32 | |
| Typhoid fever | | | 0.4 | 1.3 |
| Whooping cough | | | 25 | 2 |
| Cerebrospinal menuerti- | 5 | I | r, | 7 |
| | _ | | | |
| Totals | 1.749 | 222 | 1.877 | 227 |

The Health of Philadelphia.—During the week ending December 5, 1908, the following cases of transmissible diseases were reported to the Bureau of Heath of Philadelphia: Typhoid fever, 43 cases, 7 deaths; scarlet fever, 45 cases, 4 deaths; chickenpox, 105 cases, 0 deaths; diphtheria, 100 cases, 13 deaths; measles, 67 cases, 0 deaths; whooping cough, 13 cases, 0 deaths; tuberculosis of the lungs, 130 cases, 0 deaths; puerperal fever, 4 cases, 6 deaths: ruumps, 11 cases, 0 deaths; cancer, 21 cases, 20 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 11 deaths; tetanus, 1 death. The total deaths numbered 524 in an estimated population of 1.532.738 corresponding to an annual death rate of 17.71 in 1.000 population. The total infant mortality was 97; 70 under one year of age, 18 between one and two years of age. There were 37 still births: 21 males, 16 females. The total precipitation was 0.01 inch.

The American Röntgen Ray Society will hold its ninth annual meeting in New York on Monday. Tuesday, and Wednesday, December 28th, 20th, and 30th. The scientific meetings will be held in the New York Academy of Medicine, and an interesting exhibit of x ray apparatus will be held in the Engineers' Society Building. Thirty-ninth Street, between Fifth and Sixth Avenues, which will be open for inspection during the three days of the meeting. All professional men who are interested in Röntgenology are invited to attend the meetings and to inspect the exhibits. At a special meeting to be held on Tuesday evening, December 20th, Dr. John A. Wyeth, president of the New York Academy of Medicine, will preside and deliver an address. Dr. Henry Hulst, of Grand Rapids, Mich, will read a paper entitled Examination of the Lungs by the Röntgen Rays, which will be discussed by Dr. A. Alexander Smith and Dr. Eghert Le Fevre. Dr. Percy Brown, of Boston, will read a paper entitled The Röntgenologist and His Specialty, which will be discussed by Dr. Reginald H. Sayre. Dr. George C. Johnston, of Pittsburgh, will read a paper on the Present Status of Röntgen Therapy. Dr. William Allen Pusey, of Chicago, will open the discussion. Dr. E. W. Caldwell, 480 Park Avenue, New York, is president of the society, and Dr. George C. Johnston, 611 Fulton Building, Pittsburgh to the corretary

The Section in Laryngology and Rhinology of the New York Academy of Medicine will meet on Wednesday evening, December 23rd. The subject which has been chosen for consideration at this meeting is Eruptive Conditions Manifested in the Nose and Throat. Dr. John A. flows Manifested in the Nose and Throat. Dr. John Fordyce will read a paper dealing with the subject from a dermatological standpoint, Dr. Louis Fischer will take up the subject from a pædiatric standpoint, and Dr. Feltx Cohn will treat the subject from the point of view of the laryngologist. A general discussion will follow, which will be opened by Dr. Max G. Schlapp and Dr. George H. Fox.

be opened by Dr. Max G. Schlapp and Dr. George H. Ton-The Health of the Canal Zone.—During the month of October, 1908, there were 292 death the Canal Zone in brospinal meningitis; I from tetanus; 2 from bronchopneumonia; 15 from pneumonia; 15 from diarrhœa and enteritis under two years of age, and 2 from puerperal septichæmia. The morbidity rate for the month among the employes of the Canal Commission was 26.66 in a thousand. The malarial rate was 41.79 in a thousand. The last case of yellow fever in the Canal Zone was discovered in May, 1906. The last case of plague in August, 1905.

Society Meetings for the Coming Week:

Monday, December 21st.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

Tuesday, December 22d.—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetries and Gynæcology); New York Medical Union.

Wednesday, December 23d.—New York Academy of Medicine (Section in Laryngology); New York Surgical

Society.

Society.

Thursday, December 24th.—New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brooklyn Pathological Society; Hospital Graduates Club, New York; New York Celtic Medical Society.

Friday, December 25th.—New York Society of German Physicians; New York Clinical Society; Academy of Pathological Societoe, New York.

Saturday, December 26th.—New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society; Harvard Medical Society, New York.

Donations and Bequests to Charitable Institutions. By the will of Dr. William J. Earhart, who died recently in Philadelphia, the following Philadelphia institutions will receive \$5,000 each; The Woman's Homecopathic Hospital; the Children's Homecopathic Hospital, to endow a bed to be

receive \$5.000 each; The Woman's Homeopathic Hospital; the Children's Homeopathic Hospital, to endow a bed to be known as the Jacob R. Earhart, M. D., bed; the Hahnemann Hospital, for a surgical ward; the Woman's Southern Homeopathic Hospital, which will also receive an additional \$5.000 to endow a bed to be known as the Anna May Memorial; and St. Luke's Homeopathic Hospital.

The auditor of the estate of James Hamilton, late of Downingtown, reports that she has paid \$7.292 to each of the following institutions: The Presbyterian Hospital of Philadelphia, the Chester County Hospital, of West Chester, Pa., the Presbyterian Home for Aged Couples and Aged Men, of Bala, Pa., and the Home for Aged and Infirm Colored Persons, of Philadelphia. She also reported that she had paid \$3.604 to the Presbyterian Orphanage of that she had paid \$3,646 to the Presbyterian Orphanage of Philadelphia

By the will of Mrs. Mary E. Ives, who died recently in New Haven, Conn., the General Hospital Society of New Haven receives \$5,000; Grace Hospital receives \$5,000; the New Haven Orphan Asylum receives \$1,000; and the Home

for the Friendless, \$1,000.

By the will of Sarah E. Ward, who died in Boston re-By the will of Sarah E. Ward, who died in Boston recently, the following Boston institutions become residuary legatees: The Cullis Consumptive Home, the Home for Incurables, the Free Home for Aged Women, and the Boston Society for the Relief and Control of Tuberculosis.

The Milwaukee Sanatorium for Tuberculosis has received a gift of \$500 from Mrs. W. T. Cushing

Mr. George Eastman, of Rochester, N. Y., has donated to the Homeopathic Hospital of that city the sum of

Bith of Current Miterature.

BOSTON MEDICAL AND SURGICAL JOURNAL. December 10, 1908.

- The Subcutaneous, Cutaneous, and Conjunctival Use of Tuberculin in Diagnosis. Technique. Reliability. Results of Animal Experimentation,
- By FREDERICK T. LORD. A Clinical Study of the Transmission and Progress of Tuberculosis in Children through Family Associa-
- By CLEAVELAND FLOYD and TENAN A. Chronic Intestinal Catarrh, (To be Continued),

 By LESTER C. MILLER. By CLEAVELAND FLOYD and HENRY I. BOWDITCH.
- By LESTER C. MILLER

 On Certain Evil Tendencies in Medicine and Surgery
 (Concluded), By Maurice H. Richardson.
- 1. The Subcutaneous, Cutaneous, and Conjunctival Use of Tuberculin in Diagnosis.-Lord believes that reactions with any one of the three tests, when properly performed, indicate tuberculosis somewhere in the body. It may not be where our clinical data led us to suspect it, and reactions may occur in the presence of latent, inactive as well as active, foci. This must be constantly in mind in applying the results of the test to individual cases. In patients suspected of tuberculosis a positive test is only one more factor to be considered in establishing the diagnosis, while a negative test is of much greater value and goes far toward disproving the tuberculous character of the disease in question. Of the three tests, von Pirquet's cutaneous method appears to be quite harmless and reliable. It is probably more delicate than the conjunctival and subcutaneous tests, and hence more often responds to latent, inactive, and unimportant foci. So far as can now be judged, there need be no hesitation in its application.
- Transmission and Progress of Tuberculosis in Children through Family Association.-Floyd and Bowditch are of the opinion that, while the educational movement is rapidly making progress in regard to tuberculosis among all classes of people, the full realization of our duty to children has not been appreciated. No adequate provision has vet been made to place these children in good environment that they may regain their health. The work of removing the infected member of the family is being well worked out, but until we can care for all the ignorant and careless consumptives our problem in regard to children will continue to be a large one. Much, however, can be done through isolation, education, and cleanliness. A considerable number of children have been under observation in day camps and in the country. The results have exceeded the expectations. Not only has the general improvement been rapid, but a number of active lesions have become quiescent after a few weeks' treatment. would seem that the child at its receptive age is peculiarly open to ideas in regard to hygienic living, and the recuperative power of the body at this stage in development gives great promise of successful results in treatment. In order, then, better to protect our children, several measures are important. Early notification of all births; better inspection and control of the cities' milk supply; systematic school inspection; housing reform; segregation of advanced cases; required notification of the disease; provision for the care of pulmonary tuberculosis in children; education of all school children on matters of general

hygiene. Nearly all these measures are being enforced in Massachusetts, and, as the forces of sanitation and education advance, the solution of the problem of tuberculosis is nearer.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION December 12, 1908

- The Pharmacopæia as the Standard for Medical Pre-The Need of More Intimate Knowledge of the United
- States Pharmacopæia and the National Formulary among Physicians,

 By James M. Anders.
- among Physicians,
 The Pharmacopeia as a Legal Standard,
 By H. W. WILEY and L. F. KEBLER.
 Responsibility of the Medical Profession for the Use
 of Nostrums,
 By C. F. WAHRER.
- A Further Contribution to the Histopathology of Paraffin Prosthesis, By M. L. Heidingsfeld.

 The Relation of the Character of the Syphilitic Initial
 Lesion to the Secondary Constitutional Period,
- By A. RAVOGLI.
- The Influence of the Discovery of the Spirochæta Pallida on the Treatment of Syphilis,
- By JAMES F. BREAKEY. Hæmolysis with Special Reference to Cancer and
 Tuberculosis. Further Observations on its Clinical
 Aspect, By George W. Crile.
- The Value of Routine Physical Examination,
- By Edwin W. Gehring.

 A Plea for the Prompt Evacuation of the Uterus in the Treatment of Eclampsia, By Henry D. Fry.
- Mixed Infections in Tuberculosis, By MAZYCK P. RAVENEL.
- Air Infection of Minor Importance,
- By Charles V. Chapin.
 By J. N. Hurty. Uniformity of Vital Statistics,
- A New Method for the Quantitative Estimation of Albumin in Urine
 - By EDWIN H. GOODMAN and SUZANNE STERN.

Syphilis.—Ravogli says of the treatment of syphilis that it is difficult to foresee whether it will be possible to find an antisyphilitic vaccine which, by increasing the opsonic index, will render the organism capable of disposing entirely of the treponema. One thing is sure, that in the mercurial preparations we have a remedy which directly attacks the spirochætæ and improves the general condition of the system, rendering it able to cope with the virulence of these germs. In the meantime we can find the means to attack the treponema directly on the initial lesion where it is developing. We can either destroy it in the locality or at least succeed in modifying syphilis to such a point that it may have a mild course. The local and the general action of atoxyl has been greatly praised by Salmon and Hallopeau. A salve containing 50 per cent. of atoxyl has been used on the initial chancre and at the same time there have been given injections with an atoxyl solution from 10 to 20 per cent. with satisfactory results. The action of the atoxyl on the syphilitic pathological products has been recognized by Hoffmann not only on man but also on the animals. Hoffmann and Uhlenhuth have found in the application of atoxyl a preventive action against syphilis in the animals, and this was later confirmed by Metchnikoff. But it seems that the atoxyl treatment does not protect the patient from the relapses of syphilitic manifestations. In the author's practice the atoxyl injections in cases of severe symptoms did not give him the results which the mercurial preparations have afforded. It can be said then that to-day there has been found another remedy which has true antisyphilitic action. Time and

experience will show whether it is to replace mercury, whether it is to be given in conjunction with mercury, or whether the greatest of all antisyphilitic remedies will still be mercury—Breakey observes that atoxyl must be admitted to an equal footing with mercury as a specific in syphilis, and as an abortive in the disease it is much more reliable. As a remedy it is preferable in all stages and possibly can be depended on to destroy all spirochætæ if used even after the primary manifestation. It is of special service in the graver and more malignant types of the disease. It is not contraindicated in the parasyphilitic manifestations, but even ameliorates many of the symptoms, such as pains and neuralgia in tabes and paresis. Syphilis may be aborted by the prophylactic use of atoxyl adminstered as late as from one to two weeks following inoculation. The failures of previous investigators along these lines have largely been due to insufficient doses of atoxyl. That atoxyl administered by injection. proves to be a true prophylactic is demonstrated by the fact that a typical chancre developed in an animal in which syphilis had been aborted by atoxyl, and which was later again inoculated with syphilis. The same experiment goes to show that prophylaxis does not carry with it an enduring immunity. In the use of the remedy, during any of the stages of syphilis, more rapid improvement than one gets from the use of mercury usually followed. When the disease has become disseminated—that is to say, at any time following the appearance of the primary lesion-constitutional treatment, be it with atoxyl or mercury, must be carried on for a prolonged period, and, while the improvement of particular syphiltic maniiestations is more rapid with atoxyl than with mercury, recurrences appear on the cessation of the treatment. The explanation of the action of mercury or atoxyl on the spirochætæ must still be found. It is probably through the effects of the drugs in attenuating the germs or in stimulating phagocytosis. Beyond a certain dose, the amount given has no further effect on the destruction of the microorganisms. The small doses are ineffective and useless, while large ones produce toxic effects, varying from slight headache, nausea, vomiting, colic, and possible ocular effects and subsequent paresis. ordinary dose should be 50 centigrammes. This should be given hypodermically at intervals of one or two days and repeated from four to eight or ten times, after which an interval of rest should be observed, or treatment may be continued by one of the other specifics of mercury or iodine. Very good results have been observed in the alternation of these remedies, or even in using them together at the same time. At present, atoxyl, as a remedy, promises much. In unusual dermatoses of uncertain character, the recovery of the Spirochæta pallida establishes a positive diagnosis and indicates the necessary treatment. The failure to find spirochætæ, however, proves nothing and we are thenno better off than we were years ago. In such cases, the Wassermann test may be used as a necessary diagnostic resort. Outside of the larger medical centres, such diagnostic measures are quite impracticable, and in the hands of the general practitioner impossible. The fact remains that in many cases a diagnosis must and will depend entirely on the clinical picture presented. To the attending physician still remains the necessity of recognizing syphilis from the symptoms manifested by the patient.

12. Air Infection of Minor Importance.—Chapin states that the theory of the aerial transmission of disease was developed as the most reasonable way of explaining the phenomena of infection, but contact inefection with carriers and mixed cases affords a better explanation of the phenomena. The best medical thought has been steadily restricting the supposed sphere of aerial transmission, and only a few authorities now assert that disease is carried by the atmosphere outside of dwellings, and this assertion is made only with regard to smallpox. Bacteriology teaches that former ideas in regard to the manner in which diseases may be air borne are entirely erroneous; that most diseases are not likely to be dust borne, and they are spray borne only for two or three feet, a phenomenon which after all resembles contact infection more than it does aerial infection as ordinarily understood. Tuberculosis is more likely to be air borne than is any other common disease. Animal experimentation indicates that tuberculosis may be air borne, and that plague and some other diseases are not, but pathology has not determined, as is sometimes alleged, that even pulmonary consumption is an air borne disease. There is no good clinical evidence that the common diseases are air borne, but there is considerable clinical evidence that scarlet fever, diphtheria, smallpox, measles, whooping cough, typhoid fever, and plague are not easily transmissible through the air.

14. A New Method for the Quantitative Estimation of Albumin in Urine.—Goodman and Stern have made use of the solution of Tsuchiya-phosphotungstic acid in ninety-six per cent. alcohol and hydrochloric acid—as a basis for a titration method. They dissolved I gramme of crystallized albumin in 100 c.c. of distilled water (solution A). Of this they took I c.c. and diluted with 9 c.c. of distilled water (solution B), so that in the 10 c.c. there was 0.01 gramme of albumin, in 1 c.c. 0.001 gramme, and in o.I c.c. 0.0001 gramme. They put in a test tube 5 c.c. of the following solution: Phosphotungstic acid, 1.5 grammes; hydrochloric acid (cone), 5 c.c.; alcohol, ninety-five per cent., q. s. ad., 100 c.c. They found that if the solution of albumin (solution B) was added with a pipette graduated in 0.1 c.c. it took o.1 c.c. to cause a cloudy precipitate with the phosphotungstic acid; in other words, o.1 c.c. of the albumin solution contained 0.0001 gramme albumin. To prove the delicacy of this test they took I c.c. of solution B and diluted it with 9 c.c. of distilled water, so that in the 10 c.c. there was 0.001 gramme albumin, in 1 c.c. 0.0001, and in 0.1 c.c. 0.00001 gramme, and they found that it required exactly I c.c .or 0.0001 gramme albumin to cause a precipitate. Having established the fact that the acid solution precipitated exactly 0.0001 gramme albumin, they applied their method to urine. First the Heller test was made, and if much albumin was present the urine was diluted I in 10; if not, undiluted urine was used. Five c.c. of the phosphotungstic acid solution was put in a test tube, and then with a 2 c.c. pipette graduated in tenths of a cubic centimetre, the filtered urine was added to this, shaken after the addition of each tenth, and urine added until a whitish cloud appeared. The number of tenths of a cubic centimetre was read and expressed in terms of 100 c.c.

For example, if it takes I c.c. of diluted urine (I in IO) there is 0.0001 gramme albumin in 0.1 c.c. of undiluted urine, or in 100 c.c. there is 0.1 gramme albumin, or I gramme in 1,000 c.c. On the other hand. if 0.7 c.c. diluted urine (I in IO) is used, then 0.07 c. c. diluted urine equals 0.0001 gramme albumin, 7 c.c. undiluted urine equals 0.01 gramme albumin, and 700 c.c. equals I gramme albumin. The following equation gives the percentages: 700:1.0= 100: X or 0.142 per cent, or 1.42 gramme per thousand. The authors state that their method for determining the amount of albumin by titration is to be recommended on account of its simplicity, accuracy, and the rapidity with which one obtains results. It is applicable to urines containing but faint traces of albumin, such as those in cases of febrile albuminuria, which are not suitable for the Esbach method. The method is also accurate for large quantities of albumin. So far they have been unable to find any sources of error in their method such as must be taken into consideration with the Esbach albumin-

MEDICAL RECORD

December 12, 1908.

- The Physiological Significance of that First Lesson, By STEPHEN SMITH.
- A Statistical Study of Renal Colic and Hepatic Colic, By Brandreth Symonds.
- The Ileocolic Circle, By BYRON ROBINSON.
- The Tuberculosis Problem in the Philippines and the Elimination of Intestinal Parasites as the First Step in Its Solution,

 By Victor G. Heiser.
- Neuroses of the Nose,

By CHARLES PREVOST GRAYSON.

The Ileocolic Circle.—Robinson observes that the ileocolic circle is formed by the bifurcation of the injejunal artery into the ileocolic artery and ileal artery and completed by their distal inosculation. In other words, the jejunal artery divides into the ileocolic and ileal arteries which reunite some five inches distalward forming a constant mesenteric vascular circle—a constant fixed primordial circular vascular landmark. The ileocolic circle is located in the ileocolic angle and is a constant struc-It may be accompanied by mesenteric apertures, from insufficient vascular nourishment, which may serve for hernial strangulation. The ileocolic circle is frequently divided into compartments by arteries of varied dimensions, which are destined to nourish the mesentery within the circle or are bifurcated loops, branches of the main circle. The clinical significance of the ileocolic circle is that its right circumference—96 per cent. (i. e., the ileocolic artery)—is the main source, or the origin of the arteria appendicularis. The ileocolic circle, existing in the form of an oval, measures practically 2x6 inches. The dimension of the ileocolic circle depends upon the location of the bifurcation of the jejunal artery and the length of the ileal artery. The jejunal artery may bifurcate proximal, on a level or distal to the origin of the distal mesenteric artery, i. e., in the region of the third lumbar vertebra. The ileocolic circle may possess, imposed on its periphery, a series of minor vascular arches. It is a primordial vascular landmark destined to nour-

ish the ileum and cæcum (with appendix as an ancient stomach). The ileocolic circle is associated and in relation with the right psoas, distal ileum, cæcum, right ovary, right oviduct, ureter, common

iliac, and the treacherous, dangerous appendix to which it primarily, chiefly, and directly emits the vascular supply. It is directly associated with the ileocolic arches. By placing it mesenteron on a leftward tension one may view plainly the "ileocolic circle" though not injected. By the aid of the ileocolic circle the anatomist can unfold with greater practicality the vascular relations of the ileum and cæcum, but especially those of the appendix. The ileocolic circle is an important practical physiological vascular landmark. The base of circulation is anastomosis, which is here indicated in its typical form—that of a circle; collateral anastomosis is complete, perfect. Our chief means to control the blood current for therapeutic purposes is through the "inosculating circle," e. g., the uteroovarian circle. Physiologically the ileocolic circle is supplied with such numerous radiating branches of marked dimensions that if it were ligated ample collateral circulation would preserve tissue nutrition and furnish sufficient blood volume for function of the tractus intestinalis (sensation, absorption, secretion, peristalsis). The ileocolic circle presents practical pathological conditions. Apertures of the peritonæum within the ileocolic circle may produce (atrophic) peritoneal apertures from lack of blood supply, sufficient to allow intestinal coils to become strangulated. Arterial sclerosis of the ileocolic circle may occur to sufficient degree to interfere with nutrition of tissue and enterocolonic function (sensation, absorption, peristalsis, secretion), particularly that of the appendix. Should an embolus appear in any segment of the ileocolic circle the collateral circulation is sufficiently abundant to preserve tissue and function and reestablish collateral circulation. The ileocolic circle is one of the most important vascular landmarks, especially in relation to the dangerous and treacherous appendix-dangerous because perityphilitis kills, and treacherous because its capricious course cannot be prognosticated.

4. The Tuberculosis Problem in the Philippines.-Heiser says that in tropical countries, where tuberculosis and hookworm diseases are coexistent, the elimination of the hookworm will produce better results in diminishing the mortality from tuberculosis than any measure that has as yet been tried upon a large scale; at the same time the general mortality can be markedly reduced. The annual mortality among 3,000 prisoners in Manila was reduced from 75 to 20 by the elimination of intestinal parasites; 50 per cent. of this number formerly died of tuberculosis. This was accomplished after the measures heretofore recommended by good authorities had been faithfully but unsuccessfully offered. Increasing the resistance of an individual to tuberculosis by the elimination of intestinal parasites has proved very effective in reducing the incidence of the disease. As a result of a campaign of education and by providing more hygienic houses, the number of cases among the general population of Manila was apparently reduced from 15.6 to 13 per cent. of the total mortality.

LANCET.

November 18, 1908.

I. Pathology and Treatment of Diabetes Mellitus, Viewed by the Light of Present Day Knowledge (Lecture II), By F. W. Pavy.

The "Effective Periods" of Typhoid "Carriers." By D. S. Davies and I. W. Hall.

The Common Cold: Its Pathology and Tunatment.
With Special Reference to Vaccine Therapy (To be
Continued), By R. W. Allen.

A Case of Lichen Planus Pilaris in which the Spinous Element Predominated, By A. F. SAVILL.

The Sterilization of Potable Water by Means of Calcium Hypochlorite, By J. C. Thresh.

Motoring Notes: The Olympia Motoring Exhibition, By C. T. W. Hirsch.

I. Diabetes Mellitus .- Pavv, in his second lecture on diabetes mellitus, discusses the question of the fate of the sugar taken in with the food, where it is metabolized, etc. Everything points to a disappearance of the sugar at the seat of absorption into the intestine. Nowhere else do we find such activity of protein formation. Quiescence prevails at a period of fasting, but after food ingestion, extremely active bioplasmic growth starts into operation, the newly formed bioplasm flowing in the shape of lymphocytes, through the chyliferous vessels into the circulatory system and giving rise to the digestive lymphocytosis which is observed to follow the ingestion of food. The main disposal of the absorbed sugar is effected by the assimilative action occurring within the mucous membrane of the intestinal canal, and what escapes being disposed of here, passes through the portal vein to the liver, which exerts a supplementary action in checking its flow into the general circulation by producing transformation into glycogen. Food that has been broken down and placed in a fit state by digestion for absorption is at once dealt with at the seat of absorption and rebuilt into an elaborated form. Dextrose and peptone are alike recognizable at the seat of obsorption, but both thereafter disappear. At the same time, and at the same spot, there is an active bioplasmic growth taking place, and bioplasm is known to feed upon dextrose and upon peptone. The lymphocytes, which constitute the growing material, can be followed from the villi into the absorbent vessels, and thence through the thoracic duct into the vascular system. Concurrently during the digestion period there is a large accession of lymphocytes-a digestion lymphocytosis. The next event in the life history of the lymphocyte is lymphocytolysis. There can be no doubt that production and disappearance constitute a routine procedure, and the disappearance is attended with a melting down and transformation into the protein constituents of chyle and blood plasma, thus bringing this tissue pabulum into direct relation with the food. Looked at in this way, the tissues draw their nutrient supply from material elaborated from the digestion products at the seat of absorption, instead of the digestion products being conveyed as such through the circulatory system to the tissues, an event that, on account of their small molecular nature should, but does not, make itself evident by their running off with the urine. The breaking down of protein material into utilizable and nonutilizable portions may very consistently take place within the lymphocyte through the instrumentality of intracellular enzyme

action. This view is in harmony with the fact that the period at which the increased elimination of urea shows itself after the taking of food, about corresponds with that of maximum activity of lymphocyte autolysis. Impermeability of the kidney to sugar is a pure fiction based upon the false conception of healthy urine being free from sugar. The urine stands in very sensitive relationship to the blood with respect to sugar. It is an indicator of the state of the blood as regards sugar, no matter whether the amount existing is large or small, and if sugar is reaching the circulation, as is contended for under the glycogenic theory, it can not escape being rendered evident by the urine, just as, indeed, happens in connection with diabetes.

2. Typhoid "Carriers." - Davies and Hall have studied a series of cases of typhoid "carriers" with special reference to their "effectivity"-i. e., the times and seasons of the year when they transmit the infection. A most interesting point brought out is the almost uniform absence of "effectiveness" of the carriers during the early months of the year. It is now known that typhoid bacilli may live for considerable periods in the gallbladder and hepatic bile passages, and that the carrier harbors the typhoid bacillus continuously. What is the meaning of the "ineffective" period? It may be due to periodicity in the virulence of the bacillus, the organism living a hibernant existence in the intrahepatic and extrahepatic biliary passages during these months, and becoming actively parasitic on reawakening for the remaining months of the year. The period of effectiveness, again, may be dependent upon the type of food taken, the general tissue metabolism, or the condition of the heat regulation apparatus. This seasonal effectivity may offer an explanation of the waves of endemic typhoid fever, the May revival starting the supply of fresh infections which subsequently develop by extension into the autumnal outburst. The writers hold that where typhoid fever is endemic there should be systematic examination of the fæces of convalescents or suspected carriers, made day by day and extending over long periods. The marked excretion of the typhoid bacilli during the later weeks of the acute attack does not appear to have its parallel in the carrier. The agglutinating properties of the blood may afford evidence of the "effectiveness" of the carrier. In conclusion are given an excellent set of instructions for typhoid convalescents to be given the patient when discharged from a hospital.

3. The Common Cold .- Allen asserts to have placed the bacteriology of the common or catarrhal cold upon a sounder footing, indicated means whereby a distinctive diagnosis of the causal organism or organisms may be made in any given case from a consideration of the clinical features, and to have demonstrated the utility of vaccine therapy not only in shortening acute attacks, but also in curing chronic cases and in securing immunity, more or less complete, from further attacks, acute or chronic, in those susceptible to this troublesome and common complaint. He defines a cold as a local inflammation of any portion of the respiratory tract, from the mouth and external nasal meatus to the bifurcation of the bronchi, together with the sinuses attached thereto. Inflammations due to the ordinary pyogenic cocci are excluded. The acute cold exhibits the following stages: I. Local anæmia of the mucous membrane. This is followed by local hyperæmia. 2. After infection there is a period of incubation, during which the hyperæmia increases, and there is dryness and tickling of the throat and nose, and general malaise. 3. The third stage, or "catarrhal plateau" is characterized by greatly increased mucous secretion, with sore throat, cough, and general malaise. 4. In the subacute stage, the mucous discharges become thick and vellow in color, containing leucocytes and lymphoid cells. 5. The last stage is one of true chronicity, and is marked by continuous excessive secretion of thick mucous. The most common causative organisms are the bacillus of Friedländer, the bacillus septicus, the influenza bacillus, and the micrococcus catarrhalis. Their relative frequency varies widely in different epidemics. Each organism produces a more or less distinct type of cold. True chronic nasal catarrh is usually due to the bacillus of Friedländer, while the micrococcus catarrhalis is largely responsible for chronic tracheitis. Subacute colds appear to be due to either the bacillus of Friedländer, to the micrococcus catarrhalis, or micrococcus paratetragenus. The persistent hacking tracheal or "winter" cough is probably due to one of the two latter organisms. The mode of onset and condition of the throat are helpful in the distinctive diagnosis. If the fauces and pharynx are first affected, either the micrococcus catarrhalis or the bacillus septicus is certainly present; if the larynx and trachea become speedily involved the former of these or micrococcus paratetragenus is indicated; to hear a patient cough is sufficient for a diagnosis if m. catarrhalis or m. par-The constitutional symptoms of the atragenus. bacillus septicus are but slight, those of the micrococcus paratetragenus are moderate, while the general malaise in the cases of the three others may be extreme. The temperature is high only in the case of influenza. The prognosis in cases of infection with Friedländer's bacillus should be very guarded, as there is risk of ear and accessory sinus involve-The same is true of the micrococcus catarrhalis and the influenza bacillus where extension downwards is also to be feared. A good prognosis can be given in the case of the bacillus septi-

LA PRESSE MEDICALE. October 28, 1908.

The Method of Having the Patient Lie on his Right Side in the Diagnosis and Treatment of Atonic Gastrectasia, By PAUL CARNOT.

Lying on the Right Side in the Diagnosis and Treatment of Atonic Gastrectasia.—Carnot recommends to test a patient in whom atonic gastrectasia is suspected in the following way: In the morning the stemach contents are evacuated with the stomach tube and then half a litre of water is introduced. The patient then maintains an upright position, or is seated, for an hour, when the stomach tube is reintroduced to ascertain whether any water remains accumulated in a pouch below the level of the opening of the pylorus. The second test is in the same manner except that, after the introduction of the water, the patient is caused to lie on his right side for an hour, so that the opening of the pylorus

is on a lower level than the rest of the stomach. If the pylorus is permeable there will remain at the end of an hour at most only an insignificant quantity of water. By the maintenance of this position after meals he asserts that it is possible to give such a patient sufficient alimentation without exposing him to the ill effects of gastric surcharge or increasing the ptosis. He says that every one of his patients treated in this manner was relieved and underwent a rapid amelioration.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 20, 1908.

Complement Binding in Hereditary Syphilis, Scarlet Fever, and Other Infectious Diseases,
By L. HALEERSTÄDTER, E. MÜLLER, and A. REICHE.
A Combination of Congenital and Acquired Cardiac Trouble,
By DIETRICH. Blood Pressure and its Measurement in Chronic Ne-

By ENGEL. By A. SCHANZ. phritis. Insufficientia Vertebræ and Scoliosis, Allosan, the Allophanate of Santalol,

By Georg Schwersenski.

Studies Concerning the Relations between Human Tu-berculosis and Tubercle Bacilli and the Tuberculosis and Tubercle Bacilli of Cattle (Continued), By Johannes Fibiger and C. O. Jensen. Elementary and Colloidal Sulphur (Sulfidal), (Concluded),

1. Complement Binding.—Halberstädter, Müller, and Reiche assert to have demonstrated that hæmolysis may be checked by serum from patients with scarlet fever in conjunction with alcoholic extract from a syphilitic liver. This checking of hæmolysis is not usually as marked as when syphilitic serum is used, but yet under certain circumstances it may be indistinguishable even quantitatively from the reaction induced by syphilitic sera.

3. Blood Pressure in Chronic Nephritis .- Engel says that the high systolic blood pressure is truly a symptom of atrophic kidney, while, on the contrary, uncomplicated inflammations of the kidney, either wholly or mainly parenchymatous in character, so long as they are compensated, exhibit absolutely no increase of blood pressure, and that therefore the theory that ascribes nephritic hypertension in chronic parenchymatous form of renal disease rests upon confounding it with cardiac hyperten-

7. Elementary and Colloidal Sulphur.-Nevinney says that the absorption of precipitated sulphur varies, and that an increase of the neutral sulphur is to be observed, while, on the contrary, the absorption of sulfidal always remains the same, and all of the sulphur appears to become oxidized in the organism. He recommends sulfidal as preferable in all cases in which sulphur is indicated.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT October 27, 1908

1. Concerning the Function of the Placenta,

By Bergell and Falk. Concerning the Resistance of Bacilli of the Type Para-typhus B in Dry Human Fæcal Matter, By MAYER. Contribution to the Fulguration Treatment of Malig-nant Tumors,

Dangerous Results of Calmette's Ophthalmoreaction, By SCHRUMPF

Signs of Strangulation in Fat Herniæ, By SACHS. Treatment of Hydrops Genus Traumaticus

Atropine in Incarcerated Hernia, By I Early Diagnosis and Treatment of Bronchiectasis. By RABL.

9. A New Apparatus (Urethrotelescope) for the Endo-scopic Examination of the Urethra, 10. Concerning the Icterus Gravis of the Newly Born

By PFANNENSTIEL. (Concluded), 11. Johann Hermann Baas, By BIEDERT

12. Medical Poems of the Early Part of the Eighteenth By STÖCKER.

2. Resistance of Bacilli of the Type Paratyphus B.—Mayer has shown by his investigations that under certain circumstances paratyphus bacilli can maintain their vitality for years in dried human fæcal matter protected from the light, and points out the importance of this fact in the explanation of certain epidemics.

3. Fulguration Treatment of Malignant Tumors.—Schultze reports twelve cases of malignant tumors in which he employed the fulguration treatment without material benefit. He condemns

the method as unsatisfactory.

4. Calmette's Ophthalmoreaction.—Schrumpf reports a case in which permanent injury to the eye resulted from the application of Calmette's test, and concludes that when every precautionary measure has been observed Calmette's ophthalmoreaction may cause permanent injury to the eye, and that therefore it should be used with great circumspection, and the patients should be informed beforehand of the danger.

7. Atropine in Incarcerated Hernia. - Rabl reports four cases of hernia irreducible by taxis in which spontaneous reduction took place after subcutaneous injection of atropine. An interesting point in connection with these cases is the disparity of ages of the patients. One was three years old. one twelve, one thirty-five, and the fourth eighty-

Icterus Gravis of the Newly Born .-- Pfannenstiel concludes his very elaborate paper with these considerations concerning the nature of this disease. It has been very often met with repeatedly in children of the same parents, between whom may have been born other children who were healthy or only slightly affected by icterus. There appears to be no difference between the mild form and the so called physiological icterus of the newly There are transition forms between the mildest and the most rapidly fatal forms of icterus neonatorum. The ætiology is unknown. Syphilis has been demonstrated in no case. Other infections are improbable. The apparent causes found in solitary cases are mentioned. For treatment he recommends the promotion of diuresis, subcutaneous infusions of salt solution, warm baths with cold sprinkling, enemata of camomile tea, and anything else indicated by the symptoms.

ARCHIVES OF PÆDIATRICS.

November, 1908.

The Cutaneous and Ophthalmic Tuberculin Test in Infants, By H. L. K. Shaw.

Congenital Hypertropic Stenosis of the Pylorus,
By E. W. MITCHELL and J. C. OLIVER.

Present Knowledge of Whooping Cough,

By H. H. Donnally,
The Leucocyte Count of Normal "Institutional" Chil-

The Leucocyte Count of Normal Institutional Condition.

By H O Mosenvillal.

A Case of Empyema in a Subject Suffering from Purpura.

By F. Huber.

A Simple Method of Circumcision in the New Born.

By W R. Wilson.

A Case of Contractures following Epidemic Cerebro-By H. C. CARPENTER. spinal Meningitis,

Otitis Media Propagata. Mucopurulent Aural Discharge,

By P. FRIDENBERG. Diphtheria following Tonsillectomy and Adenectomy,

By I. S. WILE By C. C. RUSH 10. Sarcoma of the Kidney,

1. The Cutaneous and Ophthalmic Tuberculin Test in Infants under Twelve Months of Age .-Shaw believes that a working knowledge of clinical and laboratory aids to diagnosis is necessary to practise medicine conscientiously. An early diagnosis of tuberculosis is especially necessary in young children. The earlier it is made, with proper treatment, the greater the chance of recovery. Von Pirquet found a characteristic reaction after cutaneous vaccination with tuberculin and established the cutaneous tuberculin test. Wolff-Eisner obtained a reaction on the conjunctival mucous membrane after instilling a drop of weak tuberculin solution. Both he and Calmette found it constant in tuberculous subjects. In a large number of reported cases of the cutaneous in young infants no reaction has been reported. The author could find no detailed account of the ophthalmic test in young infants. He personally used the ophthalmic test on eighty-one infants under twelve months without reaction. The cutaneous test in the same infants gave reaction in one case. The cutaneous test is simple and without danger, and is preferable to the ophthalmic test.

3. Present Knowledge of Whooping Cough .-Donnally states that recent statistics show that the mortality of whooping cough in children under five years of age is greater than that of any other disease except diarrhœa, enteritis, pneumonia, convulsions, meningitis, and diphtheria. Its mortality is chiefly due to its complications. The disease is more protracted and its complications more frequent during raw and inclement weather. The sputum of the disease in its paroxysmal stage contains a minute hæmophilous bacillus almost indistinguishable from the bacillus of influenza. This is obtainable in pure culture only on hæmoglobin media. The disease is contagious during its entire course, one attack usually gives immunity for life, and the incubation period is indefinite. The examination of the chest in an uncomplicated case shows nothing abnormal. Examination of the blood shows increased leucocyte count with lymphocytosis. Tuberculous infection is

one of the frequent accompaniments.

4. The Leucocyte Count of Normal "Institutional" Children and those Suffering with Pertussis .- Mosenthal offers the following conclusions: 1. The average normal leucocyte count of "institutional" children is higher than is usually given. The normal count in such cases varies between 29,600 and 7,000. 2. The percentages of the different varieties of leucocytes show diminished polymorphonuclear cells, and increase of mononuclear. The percentage of the former increases with age as in other normal children. The percentage of eosinophiles is within normal limits. 3. In the catarrhal stage of pertussis the leucocytes are doubled, the mononuclear cells increased by 5.5 per cent. In the convulsive stage the changes in the blood count are similar. 4. In cases in which there is only an afrebile cough there may be overleucocytosis. The polymorphonuclear elements are increased at the

expense of the mononuclear. 5. Overleucocytosis with increased percentage of mononuclear cells at the expense of the polymorphonuclear aids the diagnosis of pertussis in the catarrhal stage.

THE PRACTITIONER. November, 1908.

Home Treatment and Nursing of Pulmonary Tuberculosis in Dublin, By Sir W. J. Thompson.

Infective or Ulcerative Endocarditis, By N. Tirard.

Adherent Pericardium, By W. J. Fenton.

Adherent Pericardium,

An Account of the Theory and Employment of Bier's

Method of Treatment by Passive Congestion in

Cases of Rheumatoid Arthritis, Tubercle, Sepsis,

Cases of Kheumadul Arion And Various Other Conditions By A. W. Wakefield.

By A. W. Wakefield.

By L. H. L. Mackenzie. Gastric Ulcer, By L. H. L. M. Some Recent Work in Diseases of Children,

The Stomach. A Review of Some Recent Work. By F. C. MOORE.

The Medical Inspection of School Children,
By R. P. WILLIAMS.
A Case with Comments. Neoplasm of the Kidney, Presenting Certain Unusual Features,
By R. PARNELL and R. GOMPERTZ.

Home Treatment and Nursing of Pulmonary Tuberculosis in Dublin.—Thompson be-lieves it is now admitted that early cases should be treated in sanatoria, if possible, both for the immediate effect upon the patients and the educational effects upon others, and that advanced cases should be cared for in homes of rest, these cases being the ones which do most to spread the disease. The great frequency of tuberculosis in Ireland stimulated the formation of a Hospitals' Tuberculosis Committee. After six months this committee reported 157 patients treated and nursed at their homes. Of this number forty-seven were greatly improved, eleven being able to resume their work. Forty-one were placed in suitable institutions, eight families were removed to more healthy surroundings. Rooms were disinfected and sputum flasks distributed, food and clothing supplied, children sent to the country for convalescence, etc. The nurses instruct patients and their friends as to ventilation, as to the proper utilization of the available supply of food, proper methods of cooking, and as to the way to keep themselves thoroughly clean. The committee proposes to erect platforms and shelters to enable patients to be out of doors as much as possible, and is encouraged to feel that the method has obtained a firm foothold in

2. Infective or Ulcerative Endocarditis .-- Tirard thinks the diagnosis of this serious disease is often very difficult. As seen in practice it does not always correspond with the description in books. In a series of narrated cases the most prominent symptem was oscillation of the temperature, with rigor or evidence of infarction. Other symptoms were petechiæ of the extremities, vomiting, ashy discoloration of the skin, and heart murmurs. A murmur is not always present; when present it may be loud and persistent if added to preexisting chronic valvular lesion, or it may be soft and finally become inaudible. Attention is called to the fact that the deposits upon the heart valves are invariably on the side over which the blood passes in its onward flow, and that the vegetations are soft and spongy. As they do not prevent closure of the valves an absence of cardiac

murmur is not necessarily strange. The vomiting and retching, which may follow a succession of rigors, without any discoverable gastric, hepatic, or cerebral change, may be considered as analogous to the vomiting of uræmia or of cholæmia. The septic cerebral, and typhoid types of symptoms are probably due to the presence of a toxine in the circulation

Adherent Pericardium.—Fenton finds (1) 3. that there are two types of adherent pericardium at different periods of life. The first or grave form occurs under the age of thirty; the second, which has little clinical significance, after that age. (2) That a history of rheumatism is usually associated with the former, and is absent in the latter. (3) That the former is usually accompanied with valvular disease, but not the latter. In some of the former class of cases valvular disease is absent, the morbid phenomena being produced solely by the condition of the pericardium. In some of the latter there may be coincident valve disease. The cardiac enlargement may be due to the following: 1. Obstruction to systole leading to hypertrophy, subsequent dilatation, and failure. 2. That the effects owe nothing to the pericardial adhesion, but are explained by the valvular incompetence. 3. By degeneration of the cardiac muscle, occurring with the initial attack of pericarditis and permitting dilatation. The chief diagnostic points consist in a recognition of the possibility of the lesion in any case in which, in early life, the cardiac symptoms are grave, but the signs slight, or in which excessive enlargement of the heart exists in the absence of aortic disease.

4. Bier's Method of Passive Congestion .-Wakefield states that as a means of treatment for rheumatoid arthritis this is far from a panacea, but is as valuable as any means we possess. If the disease is due to microorganisms congestion should act remedially by causing autoinoculation. It may usually be depended upon to relieve the pain of the disease. The bandage should be applied when the pain comes on and removed when it has disappeared. In active tuberculosis Bier's direction is that the bandage should not be used more than one or two hours daily. As improvement occurs the bandage should be used with diminished frequency. In joint tuberculosis immobilization should be avoided, as it may cause ankylosis. Contraindications to conservative treatment by congestion are (1) commencing amyloid disease and advanced phthisis; (2) large abscesses filling the entire joint cavity and demanding operation; (3) faulty position of the joint so that cure would give a less useful result than resec-

5. Gastric Ulcer .- Mackenzie states that the position of this lesion would indicate its probable relationship to the gastric juice. Ulceration or its sequels is probably, however, a cause rather than a consequence of the excessive secretion of gastric juice, or of juice of excessive acidity. Einhorn is quoted to the effect that chlorosis, anæmia, and amenorrhoa, frequent concomitants of gastric ulcer, are also associated with hyperacid gastric juice. The sharp angle in the lesser curvature of the stomach determines the frequent location of ulcers in this vicinity. Bad teeth and constipation have also been noted as frequent attendants of this disease, also it occurs more frequently among the poor than among

those who can always have a liberal diet. One of the principal essentials in treatment is rest in bed. fluid or soft diet is important, and rectal feeding may be necessary for a time. Hæmorrhages are not necessarily of serious importance unless they are of frequent occurrence, when operative interference will be required. It must not be forgotten that the latter is a very serious step.

EDINBURGH MEDICAL JOURNAL.

No. ember, 1908.

- Some Points in the Evolution of Surgery in Edinburgh, By F. M. CAIRD. 2. Uterine Fibroids,
 By Sir Alexander Russell Simpson.
- Case of Rapidly Growing Fibroadenoma of Mamma, By Sir George Thomas Beatson
- Vaccine Therapy in Tuberculous Disease with Mixed Infection, By D. P. D. WILKIE.
- Congenital Diaphragmatic Hernia in an Old Man, By ALEXANDER DON.

Vaccine Therapy in Tuberculous Disease. -Wilkie reports his observations on the opsonic ex-

amination and vaccine treatment of patients with mixed infections in tuberculous lesions, who all had undergone, at some time, a surgical operation to eradicate the tuberculous disease. He found that the healing of the wound after a radical operation for the removal of tuberculous disease with mixed infection depended (a) partly on the nature of the secondary organism, e. g. with Staphylococcus albus much more favorable than with Staphylococcus aureus or streptococcus, and (b) partly on the opsonic index of the patient for the invading organism. One can with advantage raise the patient's opsonic index for the invading organism previous to operation by cultivating the organism from the wound, making a "personal" vaccine and injecting this into the patient. Operation must be delayed till the negative phase following the vaccine injection is over, and if possible one should operate during the positive phase. With staphylococcus the negative phase is generally over in thirty-six hours. In cases where after operation sinuses have persisted, improvement in both general and local conditions follows treatment with a suitable vaccine. The local action can be greatly enhanced by combining, where possible, the vaccine treatment with the application of passive congestion by an elastic bandage (Bier), or by the use of suction cups (Klapp). Our author concludes that in the great majority of cases of localized infective lesions vaccine treatment may be carried out with little or no risk, and often with great advantage to the patient, without making regular opsonic examinations; such examinations, unless made very frequently, are apt to be misleading, and no one should be deterred from employing vaccine therapy because of the difficulty or impossibility of having such examinations made.

AMERICAN JOURNAL OF SURGERY.

December, 1908.

The Treatment of General Peritonitis Complicating Appendicular Inflammation,

By Daniel N. Eisendrath.
Rational Spinal Support. By Henry W. Frauenthal.
Vations Clinical Types of Acute Dilatation of the
Stomach, with Experimentatal Researches,

By Robert Coleman Kemp.
Acute Perforating Gastrie and Duodenal Ulcer, (Con-By ELLSWORTH ELIOT, JR.

By J. C. LESTER.

2. Rational Spinal Support.—Frauenthal remarks that unless a brace rests upon the pelvis, by collar across the crest of the ilium, it is ineffectual and harmful. When disease occurs above the seventh dorsal vertebra, either the patient should be treated in the recumbent position for months or vears, or a brace or jacket applied, with jury mast attached, that will take off the superimposed weight above the point of disease. Children under three years of age with tuberculosis of vertebræ should be treated in the recumbent position in bed or on a portable cuirass. Recognized fundamental principles of applied mechanics have not been made use of in the application of the braces now generally in use in tuberculous disease of the spine. results made manifest in hideous deformities are due to failure to apply such scientific principles of mechanics in the fitting of braces, as would be applied in other mechanical endeavor. In the mechanical treatment of tuberculous joints we must decide which is best, viz., (1) fixation, (2) fixation with traction (thus trying to separate the inflamed surfaces and prevent the absorption produced by muscular and ligamentous contraction), (3) traction with motion.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

December, 1008.

Treatment of Tetanus with Subarachnoid Injections of Magnesium Sulphate, By R. T. MILLER, Magnesium Sulphate, Traction in the Treatment of Hip Disease.

Traction in the Treatment of Hip Disease,
By E. H. Bradford and R. Soutter,
The Heart in Pulmonary Tuberculosis. The Heart
Itself not Diseased,
By L. Brown,
The Heart during the early Period of Convalescence
from Acute Infectious Disease,
By B. Robinson,
Nonfatal Coma in the Course of Diabetes,

By C. N. B. CAMAC. The Pathological Changes in the Thyreoid Gland, as Related to the Varying Symptoms in Graves's Disease, Based on the Pathological Findings in 294 Cases,

By L. B. WILSON.

Lases, By L. B. WILSON.
Inferior Polioencephalitis in a Child of Four Years, with
Recovery, By C. F. Judson and H. Carriches.
The Googcoccus as a Factor in Infections Following
Abortion or Full Term Delivery, By F. B. Gurd.
A New Method of Staining the Diphtheria Bacillus,
By W. H. Buhlig.

I. Treatment of Tetanus with Subarachnoid Injections of Magnesium Sulphate.-Miller reports fourteen cases which were treated with magnesium sulphate. Of the eleven patients who received injections five recovered. Of the three who were treated by infusion all recovered. The cases in the first group were mostly of a severe type; those in the second group were mild cases. thinks it can be affirmed that by the use of magnesium sulphate we can obtain complete muscular relaxation in almost all cases of tetanus. From the reported results there is distinct benefit to the patients with this disease, the rapid exhaustion due to convulsions being prevented, and ability to take food restored. While there is as yet comparatively little clinical evidence upon which to base general statements, it does, however, seem possible to avoid the dangerous effects of an overdose of magnesium salts, while it is likely that when the technique has been thoroughly worked out the treatment will offer the possibility of saving a great many patients with tetanus who at present are given up as hopeless at first sight.

Traction in the Treatment of Hip Disease. -Bradford and Soutter affirm that the surgeon has several methods for the treatment of hip disease under his control. He can protect the joint with crutches, and can aid the patient in obtaining means for increased activity and fresh air. He can prevent deformity and limit bone destruction by exaggerated bone pressure, thus checking the process and promoting bone healing. The test of success will be the degree of resulting deformity, the object being a cure without distortion or disability. Traction can be employed without using expensive or elaborate apparatus. It does not demand unusual skill from the surgeon or nurse, nor more attention in its management than is easily possible. It meets a pathological indication in the stage of muscular spasm, it should be applied to check undue bone crowding, it furnishes a satisfactory measure of fixation of the joint when efficiently applied, and it enables one to obtain better results in hip disease than by measures which dispense with it.

3. The Heart in Pulmonary Tuberculosis .-Brown emphasizes the importance of study of the heart in this condition with reference to diagnosis, prognosis, and treatment. The heart itself may be diseased or not diseased in a given case of pulmonary tuberculosis. In considering the latter situation the author regards (1) the position of the heart; (2) its size; (3) dilatation with the area of cardiac dulness; (4) auscultatory phenomena; (5) the pulse, including blood pressure; and (6) palpitation. The position of the heart in patients with pulmonary tuberculosis depends directly upon the pathological changes that have taken place in the lungs; in other words, it may be displaced upward, downward, to right or left. In size the heart, with tuberculous lungs, may be large, small, or normal. Dilatation of the heart occurs far less frequently than would be supposed, and then only late in the disease. Careful auscultation of the heart reveals in a certain portion of patients with pulmonary tuberculosis accentuated second pulmonic sound, functional murmurs, etc. The frequency and tension of the pulse are changed early and often permanently. Palpitation is an accompaniment at puberty and the menopause; it may precede hamoptysis, and accompany dyspepsia.

4. The Heart during the Early Period of Convalescence from Acute Infectious Disease.--Robinson thinks the importance of this subject has long been recognized and has been elaborated in textbooks, but too often in an insufficient manner. No organ requires such care during convalescence as the heart, the prevention of dilatation defining in many cases the hope of future vigor and well being. This is especially true in convalescence from typhoid fever, diphtheria, influenza, pneumonia, scarlet fever, and acute articular rheumatism, for in these diseases there is cloudy change and fatty degeneration of heart muscle and nerve fibre. The heart is soft and may contain thrombi, and there may be endocarditis. This means that one should not get up and out of bed from an infectious disease until sufficient time has elapsed after the disappearance of the disease for the heart to recuperate. Still less should one resume any ordinary duties until the heart has regained its normal tonus. Failure to observe these precautions is responsible in many instances for the sudden dilatation of the heart, with fainting and collapse,

and perhaps with death.

5. Nonfatal Coma in the Course of Diabetes.— Camac reports such a case, which was under observation nine months. The coma was recovered from, but the patient died four months later with hemiplegia. The conclusions are that the case was one of syphilitic arteriosclerosis, with involvement of the pancreas, kidney, and brain. The sclerotic changes in the pancreas led to the diabetes, those in the kidney to the chronic nephritis, and those in the brain to the softening with hemiplegia, to the feeble mentality, and possibly to the coma. The author states that the only coma clinically defined in diabetes is the dyspnotic type, and the only coma chemically defined is that due to acidosis and acid intoxication. The nephritis and brain condition are most important in the consideration of the coma, but in the absence of any clear knowledge of the origin of coma in uræmia or brain softening the mere statement of their presence is not sufficient to exclude other factors resulting from disturbed metabolism, which subsequent investigation may disclose.

6. The Pathological Changes in the Thyreoid Gland as Related to the Varying Symptoms in Graves's Disease.-Wilson feels warranted in the following statements from the clinical point of view: 1. Very early acute cases show pathologically hyperæmia and cellular hyperplasia in more or less of the gland, if the more enlarged lobe has been removed. 2. Later acute cases show greater parenchyma increase and increased absorbable secretion. The increase in parenchyma is in proportion to the severity of the symptoms. 3. Cases in which there is remission of toxic symptoms show evidence of decreased function, or of probably decreased absorption. 4. Those who have recovered from toxic symptoms, but still suffer from heart or nerve lesions, or from myxœdema show exfoliated epithelium and thick nonabsorbable colloid. 5. The mild cases, of long duration, show increase of parenchyma by the multiplication of alveoli, but no increase of functional power of the individual parenchyma cells. 6. Simple goîtres should be regarded as multiple retention cysts, filled with nonabsorbable secretion, cell detritus, etc.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of May 18, 1908.

The President, Dr. ROBERT T. MORRIS, in the Chair.

Carcinoma of the Cheek Treated by Means of the X Ray, Thyreoid Extract, and Thiosinamine.

—Dr. C. Am Ende presented, at the request of the president, a case of cancer which developed from an accidental injury received two years ago. Although the sore was immediately cauterized and then variously treated, it failed to heal. About a year ago a small whitish spot made its appearance. This continued to grow larger and larger, and, Dr. Robert T. Morris having been consulted, he referred

the case to Dr. Am Ende. When it was first seen by him, on December 29, 1907, he found an erosion on the inner side of the cheek somewhat larger than a silver dollar and covered by an adherent whitish mass of necrotic tissue. A similar necrotic streak lined the neighboring gum, which below it was inflamed and swollen, and the submaxillary gland was enlarged, indurated, and firmly attached to the bone. Scrapings from the erosion were found to be sarcomatous, and several experts had considered the case hopeless. The treatment consisted, besides some local applications, of x raying twice a week and the internal administration of three teaspoonfuls daily of the speaker's thyreoid fluid extract, together with two grains of thiosinamine twice daily. In addition, one grain of thiosinamine was given hypodermically, at first three times a week, and later twice a week. The mutually supporting activity of the x ray and the thyreoid fluid extract upon deep seated neoplasms, he said, had been demonstrated before, and the thiosinamine appeared to extend the effect to more indurated growths. Under this treatment the gum became normal in about four weeks, which indicated that the invasion was superficial as yet, and at present the erosion was nearly healed over, although the new mucous membrane did not yet feel normal. The metastatic induration was considerably smaller also, so that its disappearance' would seem only a question of time. Whether or not the prolonged use of thiosinamine and kindred drugs might affect normal connective tissue was a question which Dr. Am Ende thought should be taken into consideration.

The patient himself expressed the complete relief from the agonizing suffering previously experienced which had resulted from the treatment described.

The Ultra Violet Ray, High Frequency Currents, and Tabes.-Dr. HENRY G. PIFFARD said that in the discussion on tabes at the March meeting of the association there had seemed to him to be displayed a lack of knowledge about some of the agents employed in physical therapeutics, especially violet rays and high frequency currents. He gave a history of the discoveries regarding the spectrum from the time of the promulgation of Fraunhofer's lines, and said that all the rays beyond the ultrared on the one hand and the ultraviolet on the other required for their recognition some other medium than the unaided eye, various devices being employed for rendering them visible. A peculiarity of the violet rays was that, while they passed readily through water, quartz, and rock salt, they would not pass through most kinds of glass. The speaker then gave a demonstration of the fluorescence of various substances which responded to the ultraviolet ray, and stated that there were many which did this which failed to respond when exposed to x rays or radium. Thus, there was not a single fluid which would fluoresce under the x ray. One experimenter had alleged that as a result of administering fluorescent solutions internally, and then applying x rays or radium, the tissues are bathed with fluorescent light; but that fluorescent light was developed in the tissues under given conditions, even if a fact, would be exceedingly difficult to demonstrate, and it certainly had not been demonstrated by physical means. Two years ago he had

what their real nature was.

made the discovery of some additional rays. They had been designated by some as the "Piffard rays," but he was free to confess that he did not know

Tesla was entitled to the credit of discovering high frequency currents, but d'Arsonval was the first to devise means for utilizing them in the treatment of disease. It was to be borne in mind that we could have no high frequency currents either from a static machine or a coil without the addition of the Leyden jar. The oscillations of the d'Arsonval currents amounted to fifty millions or more in a second. Having referred to the derived, or shunt, current, the autoconduction, the autocondensation, and other currents, the speaker described the hyperstatic transformer which he himself had devised. In this the d'Arsonval condenser and solenoid were employed, with the addition of a fine wire coil concentric with the solenoid. By means of this current a small malignant growth might be cured instantaneously. The application was intensely painful, but the pain lasted but the fraction of a second.

As to the matter of locomotor ataxia, Dr. Piffard said that there appeared to be a tabes and a pseudotabes, and he did not understand how to tell which was which. The neurological authorities were not agreed as to what the symptom complex of the disease really was.

Dr. LEONARD WEBER said he had found that the present practice at Berlin, Munich, Heidelberg, and other German medical centres in the case of operable cancers was to remove the affected parts as thoroughly as possible with the knife, and then to apply the high frequency current. An intense cedematous reaction followed this, and much necrosed tissue was carried away. As to the question, What is tabes? he had had a good many cases in his practice, and in Germany had seen many hundreds cross sections of spinal cords from tabetics. The sclerosis of the posterior roots and the posterior columns was a metasyphilitic lesion. When an early case presented itself we had to ask ourselves, Is this going to be a classical case of tabes or is it one merely of tabes syphilitica? If the latter, antisyphilitic treatment would be of service, but he had never seen a case of true, classical tabes affected in the slightest degree by such treatment. During the last three months he had been trying some new remedies in tabes, thiosinamine at first and fibrolysine later. These were administered hypodermically, and while the injection of thiosinamine caused some pain, that of fibrolysine did not. He had been induced to employ thiosinamine in this disease by the effects which he had noted from it in old cases of urethral stricture. Thus, in one case of twenty-four years' standing, in which only a filiform bougie could be passed with great difficulty, he was able in two weeks after beginning the hypodermic use of the drug to pass a large sound-No. 26, French. It had occurred to him therefore to endeavor to check the onward march of tabes by these remedies, which seemed to have such a marked effect on cicatricial tissue. Thus far his experience was limited to three cases, all of them instances of classical tabes and of from five to ten years' standing. Up to the present time, no appreciable results had been noted in two of them, but in the third there had been a gratifying improvement. After the sixth injection the lightning pains stopped, and this was for the first time in five years.

Dr. AM ENDE said that he had not found the hypodermic injection of thiosinamine to produce any

Dr. PIFFARD said that what he had desired to find out was how to make a diagnosis before the patient While the pathological lesions were plain enough after death, tabes appeared to be a disease about the origin and nature of which we really knew very little. Neurologists were not at all agreed as to what constituted its essential features. While one would state that the Argyll Robertson pupil was the prime characteristic, another would say that the abolition of the reflexes was, and so on. Then, we wanted something which would check the progress of the disease. While such measures as the Frankel exercises were of much benefit, they were of no value in this respect. It was true, however, that here, as elsewhere, Nature provided a path of safety. We had two kidneys, and two lungs; so that, if one became incapacitated, the other might be depended upon. If, therefore, the progress of this disease could be checked in any way, we could draw to a considerable extent upon our path of safety. effort should be made, he thought, to determine what the essence of tabes really was; and then we should be able to treat it more intelligently.

Diseases Conveyed by Insects.—Dr. John B. Huber read this paper. It would appear, he said, that in the intestines bacteria did not as a rule penetrate the uninjured mucous membrane, but with the aid afforded by certain animalcules which burrowed into the mucosa, and thus made a portal of entry for them, they were enabled to find ingress to the various tissues and organs and produced their characteristic effects. Mord had found that typhoid fever and cholera might be caused in this way. A century ago the whip worm (trichuris), on account of its abundant presence being noted in epidemics of the disease, was looked upon as the cause of typhoid fever; but we know now that its rôle was an intermediary one, though the part that it played in the ætiology was a very important one. Metchnikoff had suggested that appendicitis might originate through the penetration of bacteria into tissues made permeable by intestinal parasites. The intermediaries with which we were at present concerned were insects, and their agency was varied. Thus, the germs might adhere to their bodies, or these might be swallowed by them and either ejected from their mouths or deposited in their fæces upon human food and drink. Or, again, the insects, after eating the germs, might die, and their bodies either fall into food or be disseminated as dust, to be inhaled or swallowed by human beings; or the insects might inject into man disease permeated blood which they had previously sucked from an infected animal.

He spoke first of the common house fly and the way in which it transmitted tuberculosis, the intestinal diseases of infancy, typhoid fever, cholera, and probably tetanus. He had been especially interested in the work done in connection with this subject by Dr. Daniel Jackson in behalf of the Merchants' Association of New York, as presented in their report to Governor Hughes, and also in Dr. Jackson's paper

in the Long Island Medical Journal. Having recapitulated some of the results of these investigations, the speaker said that, while we had long looked upon the house fly simply as a sort of necessary nuisance, it was only recently that we had come to regard it as a dangerous pest. The bacillus of typhoid fever had been found in lice from typhoid patients, and J. P. Mackie had reported an epidemic of relapsing fever in which the pediculus corporis seemed to be a causative factor. This occurred in a mixed settlement of boys and girls living in separate buildings. A very much higher percentage of cases was noted among the boys, who were largely infested with lice, than among the girls, who were almost wholly free from them, and a very considerable proportion of the insects taken from the wards occupied by the boys contained living and multiplying spirilla, the stomach being the chief seat of proliferation. Moreover, with the increase of the epidemic among the girls body lice became more in evidence, while with its subsidence among the boys the percentage of infected lice fell. Mackie noted that in general relapsing fever was commonly met with in poverty stricken, overcrowded, and half starved communities, where lice were apt to be abundant, and that when it occurred in mixed communities the disease seemed to select principally the poor and dirty for its subjects. In the Philippines it had been found that plague might be transmitted from rats to man by means of lice.

He spoke next of the bedbug as a conveyor of disease, especially smallpox. Tubercle bacilli had also been found in the blood of the bedbug, and Metchnikoff believed that the insect formed an intermediate host, or at least an agent, for the trans-

mission of malarial fever. In the acute febrile disease encountered in Montana and neighboring States, known as Rocky Mountain fever and spotted fever, the organism described as its specific germ appeared to be transmitted by the tick, the insect which was the agent of the propagation of the Texas, or cattle, fever. Weber, in a paper in the New York Medical Journal, had described small insects known as psocidæ, which were found in great profusion in barns and outhouses where animals were kept. When a tuberculous cow deposited sputum swarming with bacilli mixed with meal over the woodwork of her stall, these insects would consume this. Weber found microscopic specimens harboring tubercle bacilli, and tuberculous lesions were developed in the peritoneal cavity of guinea pigs as the result of the injection of the material in which the bacilli were found. Possibly typhus fever, leprosy, and other diseases which pre-vailed among squalid and vermin infected people might be transmitted by fleas. Filariasis, a disease somewhat resembling leprosy, had been known to be conveyed to human beings by the mosquito, and the same was true of elephantiasis. Anthrax might be transmitted by means of gadflies or horse flies. Cancer might possibly be an infectious disease, and Webb in a second paper entitled Do Fleas Spread Cancer? had described a case from which he made the following conclusions: 1. The patient was bitten by fleas from the bed of a cancer patient. 2. There followed an inflammation (though not necessarily propter hoc). 3. After about a fortnight a definite growth developed, ending in duct carninoma. The principal charge against the flea, however, was that it was the partner of the rat in the propagation of bubonic plague. The Bacillus pestis existed in rats which were infested with fleas, and the latter conveyed the infection to healthy rats. When the rats died the fleas deserted the bodies for other rats or for human beings. Fleas were really the essential factors in conveying the plague virus to man, and possibly they carried it from sick persons to the well without any intermediate part being played by the rat. The remainder of the paper had to be omitted for lack of time.

Dr. Daniel Jackson said that the curve of typhoid fever in New York differed from that in other places, where the disease was principally due to drinking water, etc., in regard to the time of greatest prevalence. Here this time was in the autumn, two months after the period when flies were most numerous and when the greatest mortality from diarrhœal diseases occurred. His investigations had shown that a large proportion of the cases of typhoid and of summer diarrhœa in infants was attributable to the agency of the fly, and he was convinced that if this cause of transmission could be done away with, a great saving of life would be effected. The flies were propagated principally along the river front, whence they made their way to the neighboring restaurants, and in the centre of certain tenement blocks where the most unsanitary conditions regarding water closets prevailed. The responsibility for the conditions affording such facilities for the multiplication of flies appeared to be more or less divided between the Health, the Tenement House, and the Dock Departments, and he thought that the remedy should be sought in legislative enactment. It would thus be possible to relieve the sewage conditions materially and to do away entirely with the unsanitary conditions in the tenement blocks referred to.

The President said he found that a good many of the phlegmons which were met with at his clinics had their beginning in the bites of fleas or bedbugs.

Book Rotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Applied Physiology. A Manual Showing Functions of the Various Organs in Disease. By Frederick A. Rhodes, M. D., Professor of Physiology and Embryology, Medical and Dental Departments of the Western University of Pennsylvania; Late Physician in Charge to the Reineman Hospital and the Kaufman Clinic; Formerly Assistant to the Chair of Clinical Medicine, West Penn Medical College, etc. Pittsburgh: Medical Press. Pp. 206.

The author has succeeded in making a fairly comprehensive compilation of the leading facts in physiology in their relation to practical medicine. He has been a diligent reader of the works of Krehl, Bunge, Leube, Figerstedt, Hall, von Neusser, and other recent authorities, and has presented the results of his studies in a synoptic form, which may be useful to the beginner if used in connection with, but not to the exclusion of, the larger textbooks

treating the same theme. The difficulty in all books of this class is that most of the facts of medicine and physiology do not admit of such unqualified and categorical presentation, especially the intricate subjects of metabolism, secretion, fever, and the pathology of the central nervous system. There are many evidences of careless proofreading which mar the appearance of the volume and even make the text almost unintelligible at times. The curious definition of digestion as including "those changes which occur in the food from the time that the food is thought of until it is prepared for absorption' would make it appear that the author regards as digestive processes the preparation of food in the kitchen and the unhappy changes it frequenly suffers in cold storage or in the hands of a bad cook.

Ophthalmic Surgery. A Handbook of the Surgical Operations on the Eyeball and its Appendages as Practised at the Clinic of Prof. Hofrat Fuchs. By Dr. Josef Meller, Privatdocent and First Assistant, k. K. II., University Eye Clinic, Vienna. The Translation Reviewed by WALTER L. PYLE A. M., M. D. Member of the American Ophthalmological Society, Ophthalmologist to Mount Sinai Hospital, etc. With 118 Original Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xiii—202 (Price, \$300)

As indicated in the subtitle, this volume considers only the operations of choice, as it were, in the various surgical diseases of the eye. Accordingly we note that a large number of ophthalmic operations are, naturally, not described at all. The work is, however, an excellent guide, and is a welcome addition to the literature on the subject. is a good teacher and demonstrator, and the style of the work, both in a literary and a scientific sense, is very good. The illustrations in half tone after very artistic wash drawings are unusually fine and on such a scale that every step of the various eye operations is made clear. Meller also considers a number of recent innovations in ophthalmic surgery, and concludes with an extremely interesting and instructive chapter on minor operations, anæsthesia, and the duties of the assistant.

The Executive Practice in Diseases of Children By WILLIAM NELSON MUNDY, M. D., Professor of Pædiatrics in the Eelectic Medical Institute, Cincinnati, O. Second Revised Edition, Illustrated, Cincinnati: The Scudder Brothers Company. Pp. 512. (Price, \$3.)

The arrangement of this work is similar to that of most books on pædiatrics, but the classification is in some respects peculiar. Pharyngitis, adenoid growths, and amygdalitis are considered under diseases of the digestive apparatus, while larvngitis is included under diseases of the respiratory apparatus. Diabetes is classed as a disease of the genitourinary organs, and curvature of the spine as a disease of the nervvous system. The grammar leaves much to be desired. Future editions would be improved by consultation with an expert grammarian. While treatment receives important attention, the book is a genera! work on the diseases of children. In the chapter on diphtheria, the uses of aconite, belladonna, gelsemium, and thirteen other drugs are described in detail. "Diphtheria being a disease of the blood," says the author, "the treatment will in all cases be general, with attention to local treatment in severe throat complications. The primary objects are to sustain the strength of the patient so as to enable

him to combat the effects of the toxæmia, and to limit the production and extension of the exudation." Six lines are devoted to antitoxine, which, the author says, has revolutionized the treatment of diphtheria. Nothing whatever is said as to its use, administration, or dose. The illustrations, though not numerous, are good, but are borrowed in almost every instance from other textbooks. The sections on infant feeding are also borrowed largely, the works of Holt, Rotch, Koplik, and Chapin being largely drawn upon. Less than a page is devoted to maternal nursing, and the section on artificial feeding is inadequate. In fact, the same may be said of the book as a whole as a working guide upon pædiatrics for the general practitioner.

A Textbook of Discases of Women. By Charles B. Penrose, M. D., Ph. D., formerly Professor of Gynæcology in the University of Pennsylvania, etc. With 225 Illustrations. Sixth Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 550.

The new edition of this standard treatise will be welcomed alike by specialists, general practitioners, and students. The revision has been interstitial, but the book has been well brought up to the teaching of the present time. Dr. Penrose's textbook is sure to maintain its popularity with the profession for many years to come.

Lehrbuch klinischer Untersuchungsmethoden für Studierende und Aerzte. Von Dr. Theodor Brugsch, Assistent der II. mediz. Universitäts-Klinik in Berlin, und Dr. Alfred Schittenhelm, a.o., Professor der inneren Medizin in Erlangen. Mit emem Beitrag: Klinische Bakteriologie, Protozoologie und Immuno-Diagnostik, von Dr. J. Citron, Berlin. Mit 341 Textabbildungen, 5 schwarzen und 5 farbigen Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1908. Pp. 939.

The many branches of medical science have made such progress during the last twenty-five years that an up to date book on diagnostics must necessarily be of great volume. There are so many major and minor details which have to be taken into consideration, not only in simple, but also in distinctive diagnosis, and the methods for determination are so manifold, that diagnostics has become a science of its own

The authors have taken all this into consideration and have compiled a very valuable book, which somewhat deviates from the current textbook, as Dr. Brugsch and Dr. Schittenhelm base their clinical diagnosis upon researches of the pathological physiologist. It begins with a description of the general examination of the patient, his own statement, his appearance, the external condition of his body, such as the skin, the thyreoid, the temperature, topography, etc. This is followed by percussion and auscultation, manual and instrumental examination of the heart and the bloodvessels, and the detailed examination of the organs of respiration. Examination of fluids obtained by paracentesis and puncture and the use of Röntgen rays for diagnostic purposes are mentioned next. Then follows the physical diagnosis of diseases of the heart, vessels, and lungs. The next chapters contain the diagnosis of the apparatus of digestion, of the kidney and urine, and of the pathology of metabolism. The technique of the examination of the blood is well treated. Dr. Citron is the author of the chapter on diagnosis from the point of view of bacteriology, protozoology, and

immunization. The nervous system is treated of in the last chapter. From this short synopsis it may be seen that the authors have treated the subject thoroughly.

Guide to the Clinical Examination and Treatment of Sick Children. Second Edition, Greatly Enlarged and Rewritten. By John THOMSON, M. D., F. R. C. P. Ed., Physician to the Royal Edinburgh Hospital for Sick Children, etc. With 160 Illustrations. Edinburgh and London: William Green & Sons, 1908. Pp. xxviii-629. (Price, 128. 6d.)

This edition of Dr. Thomson's work is more than twice as large as the first one, and it is very comprehensive. It deals eminently with practical matters, the clinical aspects of children's diseases being given prominence and questions of pathology subordinated so far as is compatible with satisfactory treatment from the practitioner's point of view. We regard it as among the best of the less bulky treatises on pædiatrics. It evinces on the part of the author great experience, exceptional powers of observation, and the wisdom and kindliness of the ideal physician. It deserves to maintain a high place in the esteem of the profession. The illustrations are particularly effective, and the entire mechanical appearance of the book is most creditable to the publishers.

Diet in Infancy. The Essential Introduction to the Study of Disease in Childhood. By A. DINGWALL-FORDYCE, M. D., F. R. C. P. Ed., Extra Physician to the Royal Hospital for Sick Children, Edinburgh. Edinburgh and London: William Green & Sons, 1908. Pp. x-174. (Price, 3s. 6d.)

In the preface the author says of his little book: "It pretends to no heights of eloquence and no profound depths of scientific information. It aims at being of practical utility to practical men working among children." We think he has succeeded in making such a book as he thus indicates. Much of its teaching is in a line with what our American pædiatrists have inculcated for years. We commend the book to students and young practitioners.

Cancer. Par P. MENETRIER, Professeur agrégé à la Faculté de médecine de l'Hôpital Tenon. Avec 114 figures intercalées dans le texte. Paris: J. B. Baillière et Fils, 1909. Pp. 662.

The author reviews briefly the history of cancer, which he defines as characterized clinically by a local tumor, superficial or deep, according to the organ in which it is developed, and which progressively invades and poisons the entire organism. It is not a disease, but a morbid process-that is, a process of autoinfection of the organism by the cells of the organism, proliferating cells, invading and destroying the normal elements with which they come in conflict. All the cellular elements of the organism are eventually capable of such pathogenic activity, exactly in proportion as they are capable of regenerative, irritative, or compensatory proliferation, and hyperplasia, which are normal functions from which the cancerous process represents a pathological deviation.

He gives a careful general description of the cancerous process, the cancer cell and its modes of multiplication, its morphology and general biology, its functions, secretions, and degenerations, its chemistry, and its experimental biology. He reviews the morbid states antecedent to the development of can-

cer, its beginning, growth, and primary extension, its metastasis, its regression, its general action on the organism, and its clinical evolution and diagnosis

He adopts the simple classification of cancers that develop at the expense of the epithelial tissues; cancers that develop at the expense of the vasculoconnective tissues; and tumors from several tissues and their neoplastic derivatives. Each of these classes is described in detail, as are the several theories of the pathogenesis of cancer and the various methods of treatment. There are excellent illustrations of microscopical sections, and the volume affords an admirable presentation of our knowledge of cancer.

The Law in General Medical Practice. Some Chapters in Every Day Forensic Medicine. By STANLEY B. ATKINSON, M. A., M. B., B. Sc., of the Inner Temple, Barrister at Law, Justice of the Peace for the County of London, Member of the Central Midwives' Board, Hon. Secretary of the Medicolegal Society (London). London: Henry Frowde and Hodder & Stoughton, 1908. Pp. viii-239.

This book can hardly be called a treatise on the law, as its title suggests. In eight entertaining chapters the author offers much of fatherly advice to young doctors and some very practical suggestions which might prove of value to the experienced practitioner. The book is written mainly for English circulation, and the chapters on Medical Certificates and Reports, and on Cases Arising in the Coroner's Court, are based wholly upon the English statutes, but the law quoted here and there by the author as to medical evidence, medical witnesses, negligence, and malpractice is generally the law of the United States as well as of the United Kingdom, decisions of the courts of our various States being quoted in numerous instances. The author's style is breezy-almost jocular.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Taber's Pocket Encyclopædic Medical Dictionary. Edited by Clarence W. Taber, Author of Taber's Medical Dictionary for Nurses, etc. Associate Editor, the late Nicholas Senn, M. D., Ph. D., L.L. D., C. M. Chicago: C. W. Taber, 1908. Pp. x to 13-418.

On Infantilism from Chronic Intestinal Infection. Characterized by the Overgrowth and Persistence of Flora of the Nursing Period. A Study of the Clinical Course, Bacteriology, Chemistry, and Therapeutics of Arrested Development in Infancy. By C. A. Herter, M. D., Professor of Pharmacology and Therapeutics, Columbia University. New York: The Macmillan Company, 1908. Pp. 118. (Price, 90 cents.)

Arteriosclerosis: Ætiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By Louis M. Warfield, A. B., M. D., Instructor in Medicine, Washington University, Medical Department, etc. With an Introduction by W. S. Thayer, M. D., Professor of Clinical Medicine, Johns Hapkins University. Eight Original Illustrations. St. Louis: C. V. Mosby Medical Book Company, 1908. Pp. xvii-105.

Gonorrhœa in Women. By Palmer Findley, M. D., Professor of Gynæcology in the College of Medicine of the University of Nebraska, Omaha, etc. St. Louis: C. V. Mosby Medical Book and Publishing Company, 1908.

A Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science. By Henry S. Munro, M. D., Americus, Ga. Second Edition. St. Louis: C. V. Mosby Medical Book and Publishing Company, 1908. Pp. 360.

Bellevue and Allied Hospitals of the City of New York. Sixth Annual Report. January 1, 1907, to December 31, 1907 Pp. 416.

The Electrification of Railway Terminals. A Report Prepared under the Auspices of the Mayor and Committee on Local Transportation of the City Council. Chicago: R. R. Donnelley & Sons Company, 1908. Pp. 353.

The American Society of Tropical Medicine. Papers Read before the Society and Published under its Auspices. Volume III, 1907-1908.

Miscellany.

William Whitfield Miller .- While stationed at the Hygienic Laboratory in Washington, D. C., Assistant Surgeon William W. Miller contracted typhoid fever and died in Providence Hospital, November 24, 1908, after an illness of eight weeks.

William Whitfield Miller, son of William Whitfield and Mary Mebane Miller, was born at Water Valley, Miss., June 26, 1880. When he was five years of age his parents moved to Memphis, Tenn. Here he attended private schools, and later completed his preliminary education in the University of Virginia, where he won the Miller scholarship for excellence in biology. He then studied medicine in the Medical Department of that institution, and received the degree of doctor of medicine in 1901. After graduation he took a special course in pathology at Harvard University. Later he went to New York and was assistant in bacteriology in Columbia University, and assistant pathologist in Roosevelt Hospital. Subsequently he served for two years on the resident staff of that hospital. In 1905 he returned to Memphis, engaged in private practice, and was demonstrator of pathology at the College of Physicians and Surgeons in that city

After passing a brilliant competitive examination, Dr. Miller was commissioned an assistant surgeon in the United States Public Health and Marine Hospital Service September 4, 1906, and assigned to duty at the Immigration Station, Ellis Island, New York. In August, 1907, he was relieved from Ellis Island and assigned to the Hygienic Laboratory of the Public Health and Marine Hospital Service, Washington, D. C. At the laboratory he made examinations of such pathological specimens as were

sent in for diagnosis.

In connection with the investigation of the origin and prevalence of typhoid fever in the District of Columbia he made many of the bacteriological examinations of water and milk, and during the last summer made over a thousand bacteriological examinations in the search for bacillus carriers. His training and equipment for research work enabled him to take up original problems. He discovered a pathogenic hæmogregarine in the blood of white rats, described its life cycle and the mechanism of infection by the digestive tract. A preliminary note of this discovery was published in the weekly Public Health Reports, July 24. 1908. The completed work forms Hygienic Laboratory Bulletin, No. 46.

Dr. Miller was married in 1906, and leaves a widow and infant daughter. Personally he was modest, had an exceptionally winning and lovable disposition, and commanded the respect and affectionate regard of those with whom he was intimately associated. His untimely death terminated a career which had already given promise of a bril-

liant future.

Official Mews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and figure have been reported to the surgeon general. United States Public Health and Marine Hospital Service,

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Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commis-sioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending

BILLINGS, W. C., Passed Assistant Surgeon. Bureau orders of November 3, 1908, detailing him for duty on the Revenue Cutter Itasca, amended, detailing him for duty at the Revenue Cutter School of Instruction, Arundel Cove, Md.

COBB, J. O., Surgeon. Granted fifteen days' leave of absence from December 22, 1908. Cofer, L. E., Passed Assistant Surgeon. Directed to report to Director Hygienic Laboratory for temporary

duty.

Cofer, L. E., Passed Assistant Surgeon. Granted four days' leave of absence from December 1, 1908 under paraggraph 191, Service Regulations.

CORPUT, G. M., Passed Assistant Surgeon. Granted ten
days' leave of absence from December 8, 1908.

DUKE, B. F., Acting Assistant Surgeon. Granted twenty-three days' leave of absence from November 23, 1908. FOSTER, ALBERT D., Passed Assistant Surgeon. Relieved from duty on the Revenue Cutter Thetis; directed to proceed to Angel Island, Cal., and report to command-

ing officer for temporary duty.

Gustetter, A. L., Acting Assistant Surgeon. Granted six days' extension of leave of absence from November

26, 1908.

LAGRANGE, J. V., Pharmacist. Granted thirty days' leave

of absence from November 3, 1908.

LANZA, A. J., Assistant Surgeon. Relieved from duty on the Revenue Cutter Rush; directed to report to com-Relieved from duty on manding officer of the Revenue Cutter McCulloch, for duty.

OLESEN, ROBERT, Assistant Surgeon. Upon being relieved by Assistant Surgeon A. J. Lanza, directed to proceed to Marine Hospital, San Francisco, Cal, and report to commanding officer for temporary duty.

Stoner, J. B., Surgeon. Directed to proceed to Louisville,

Ky., Cairo, Ill., and Memphis, Tenn., upon special tem-

Ky., Carro, Hi., and Assistant Surgeon. Leave of porary duty.

Thompson, W. R. P., Acting Assistant Surgeon. Leave of absence for thirty days from November 23, 1908, granted November 11, 1908, revoked November 27, 1908.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., December 2, 1908, for the reexamination of a cadet of the U. S. Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon J. W. Schereschewsky, recorder.

Casualty.

Assistant Surgeon W. W. Miller died in Washington, D. C., November 24, 1908.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 12, 1908:

Brewer, I. W., First Lieutenant, Medical Reserve Corps.
When relieved from duty at Fort Warren, Mass., ordered to San Francisco, Cal., and thence to sail for service in the Philippine Islands.
Byrne, C. B., Colonel, Medical Corps. Ordered to report before an Army retiring board at Washington, for ex-

W., First Lieutenant, Medical Reserve Corps. TOHNSON, C. Ordered from Fort Des Moines, Ia., to Fort Meade, S. Dak., for temporary duty. KENDALL, W. P., Major, Medical Corps. Granted leave of

KIERSTED, H. S., Captain, Medical Corps. Granted leave of absence for one month, to take effect about December 15, 1908, with permission to apply for an extension of fifteen days.

KULP, JOHN S., Major, Medical Corps. Retired from active

service on account of disability.

18, W. F., Major, Medical Corps. Relieved from duty at Fort Sill, Okla., and ordered to Fort Thomas, Ky., for duty.

MOUNT, J. R., First Lieutenant, Medical Reserve Corps.

Leave of absence revoked.

Nichots, H. J., First Lieutenant, Medical Corps. Granted leave of absence for two months, upon arrival in the

United States.

PIERSON, R. H., Captain, Medical Corps. Ordered from Fort Niagara, N. Y., to Fort H. C. Wright, N. Y., for

PINKSTON, O. W., First Lieutenant, Medical Corps.

PINKSTON, O. W., First Lieutenant, Medical Corps. When services are no longer needed on the transport Crook, ordered to Hot Springs, Ark., for duty at the Army and Navy General Hospital.
 SMITH, R. D., First Lieutenant, Medical Reserve Corps. Relieved from further duty in the Philippines Division, Sparkenberger, F. H., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Washakie, Wyo., and ordered to Fort Warren, Mass., for duty.

TRUBY, A. E., Major, Medical Corps. Detailed a member of an examining board at San Francisco, Cal., vice Colonel G. H. Torney, relieved.

WORTHINGTON, J. A., First Lieutenant, Medical Corps. Assigned to duty on the transport Thomas, instead of the

transport Crook.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 12, 1908:

CARPENTER, D. N., Surgeon. Ordered to the Naval Acad-

Casto, D. H., Assistant Surgeon. Detached from the Sup-ply and ordered to continue duty at the naval station, Guam, M. I.

Downey, J. G., Assistant Surgeon. Detached from the Relief and ordered to the Charleston.

EYTINGE, E. O. J., Assistant Surgeon. Detached from the

EYTINGE, E. O. J., Assistant Surgeon. Detached from the Ranger, when placed out of commission, and ordered to duty at the Naval Hospital, New York, N. Y. GEIGER, A. J., Passed Assistant Surgeon. Detached from the Supply and ordered to continue duty at the Naval Station, Guam, M. I. MUNSON, F. M., Passed Assistant Surgeon. Ordered to the Monadnock and to the Monterey, when discharged from treatment at the Naval Hospital, Canacao, P. I.

Thomas, G. E., Acting Assistant Surgeon. Appointed an acting assistant surgeon from December 3, 1908.

Warner, R. A., Passed Assistant Surgeon. Detached from the Naval Academy, and ordered to duty at the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Brown—Zell.—In Philadelphia, on Wednesday, December 9th, Dr. C. Morse Brown, of Cambridge, Mass., and Miss Anna Vendette Zell.

CAIRNS—TOWNE—In New York, on Wednesday, December 9th, Dr. Douglas Walker Cairns and Miss Rose

Ethel Towne.

Cornwell—Johnson.—In New York, on Wednesday, December 16th, Dr. Frank Wilbur Cornwell, of Plainfield, N. J., and Miss Elizabeth Fairiax Johnson.
Meitzner—Elsele.—In Jersey City, N. J., on Wednesday, December 2d, Dr. Max Meitzner, of Philadelphia, and Miss Bertha Eisele.

BAKER.—In Brooklyn N. Y., on Friday, December 11th, Dr. Frank Russell Baker, aged thirty-nine years.
BATES.—In Chicago, on Thursday, December 3d, Dr. J.

BATES.—In Chicago, on Thursday, December 3d, Dr. J. Harvey Bates, aged thirty-six years.

BICKNELL.—In Omaha, Nebraska, on Saturday, November 28th, Dr. George H. Bicknell, aged forty-four years.

CRAIG.—In Griffithsville, West Virginia, on Tuesday, November 24th, Dr. Harvey F. Craig, aged forty-eight years.

DAVIDSON.—In Fresno, California, on Monday, November 30th, Dr. J. D. Davidson, aged forty-six years.

DOD.—In Newark, New Jersey, on Sunday, December 6th, Dr. Bethuel Lewis Dodd, aged eighty-three years.

Gibbs.—In Newport, Rhode Island, on Wednesday, December 9th, Dr. Oliver Wolcott Gibbs, aged eighty-six

cember 9th, Dr. Oliver Wolcott Gibbs, aged eighty-six

MATTHAEL.-In Sierra Madre, California, on Saturday,

MATTHAEL—In Sierra Madre, California, on Saturday, December 5th, Dr. Ernest A. Matthaei, of Chicago. MAY.—In Black River, Louisiana, on Thursday, November 26th, Dr. Green Berry May, aged eighty-two years. OsGood.—In St. Louis, Missouri, on Thursday, December 3d, Dr. Mary L. Osgood, aged sixty years. Prits.—In Hazlehurst, Mississippi, on Thursday, December 10th, Dr. A. B. Pitts.

Reed.—In Cambridge, Massachusetts, on Wednesday, December 2d, Dr. Guilford Shaw Reed, aged seventy-one

Root.-In De Kalb, Illinois, on Thursday, November

26th, Dr. Edith A. Root. St. History D. L. Montreal, an Monday, October 5th, Dr. John Sutherland, of Bedeque, P. E. I., aged sixty-two

years. Whittie: In Charlan, N. V. on Thursday, December 3d, Dr. John T. Wheeler, aged fifty-eight years.

New York Medical Journal

INCORPORATING THE

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WHOLE NO. 1569.

Original Communications.

THE INFLUENCE OF ALCOHOL UPON THE PUBLIC HEALTH.*

By Frederick Peterson, M. D., New York,

Professor of Psychiatry, Columbia University; Ex-President of the New York State Commission in Lunacy; Manager of the Craig Colony for Epileptics.

The mysterious power which has led mankind through all these ages from the protozoon up to man, through combat and struggle with the elements, with natural enemies, with disease, always to give us, at the proper moment, when it is most needed, the means of rescue, the power of triumph. So in these later years, when physical structure has been safeguarded and more or less perfected, and there is need of speedier spiritual growth and development, that same power sows in a million minds the seeds from which spring freedom, social reform, moral uplifting, greater knowledge of the uses of the matter and forces all about us, and warnings of whatever may endanger the progress of the human race. Thus it must be that practically at the same moment all over the world, in Great Britain, Scandinavia, Germany, France, Italy, the United States, there has arisen a wave of feeling against the misuse of alcohol.

It is true that whenever a child is born the forces of Nature bear down upon it with all the hereditary impetus of a hundred million years to make and keep it a normal average. But it is also true that there are powerful factors which may deflect and pervert this hereditary tendency to a normal average, and these factors are such as affect the nervous system, diseases and poisons. Insanity and epilepsy are among the diseases that taint our progeny. Alcohol is the chief poison that has this baneful power. As an example of what one individual may do I might cite the oft quoted Jukes family in the State of New York. One hard drinker was the originator of this family, which, over a generation ago, when Dugdale wrote his book, had become already 1,200 in number. In his summary of the study of the Jukes family of degenerates the author says:

"Over a million and a quarter dollars of loss in seventy-five years, caused by a single family, 1,200 strong, without reckoning the cash paid for whisgenerations, and the incurable disease, idiocy, and insanity growing out of this debauchery, and reaching further than we can calculate."

This is one family.

In the State of New York there are now some

key, or taking into account the entailment of pauperism and crime on the survivors in succeeding

In the State of New York there are now some 30,000 insane in the public and private hospitals, and it is estimated that twenty per cent. of these, or 6,000 patients, owe their insanity to alcohol. In all the asylums of the United States there are 150,000 insane, and assuming the same percentage, there are 30,000 individuals in this country in whom alcohol has brought about insanity. Dr. MacDonald calculates that one insane person is an approximate loss to the State of \$400 per year. Hence the actual loss in money to the State of New York through alcoholic insanity is \$2,400,000, and to the United States \$12,000,000 every year.

Alcohol is often a direct cause of epilepsy, but more often epilepsy is due to alcoholism in parents. Thus Bourneville, in a study of over 2,500 idiots, epileptics, and imbeciles admitted to the Bicêtre Hospital, found that over forty-one per cent. of them had drunken parents. In the report of the Craig Colony for epileptics it was found that over twenty-two per cent. of 950 cases of epilepsy had al-

coholic parents.

There is not time here to take up the subject of the relation of alcohol to pauperism and crime. But what I want to point out is that the asylums for the insane, the institutions for epileptics, idiots, and feebleminded, the prisons and the county poorhouses, are representative as far as their alcoholic indulgence and debauchery. Here alcohol has done it worst to the living individual. Below this topmost wave of ruin and desolation are innumerable gradations of alcoholism down to the moderate drinkers and the temperate or occasional drinkers.

The race is reasonably safe from further contamination by those victims of alcohol who are locked away in the retreats that our charitable world provides for them. It is otherwise with the vaster number of excessive drinkers, who are free to work any havoc in the social organism and who are direct and indirect feeders of the institutions named. What these may do to themselves and their wives and their children and their children we have come to learn, and it is because of this awakening to a common danger to the human race that the nations of the earth are combined in a common campaign.

^{*}Read before the ninth New York State Conference of Charities and Correction, Elmira, November 17, 1908.

It is not a single Jukes family that society has ranged itself against, but against the legions of Jukes families that menace the human stock.

It is because physicians have been brought into contact with this destructiveness that they are leaders everywhere in the great crusade. They feel themselves to be the guardians of the health of the racial mind and body. Just as they fight tuberculosis and typhoid fever and many other infectious diseases, so do they array themselves against the dangerous agent that crowds the hospitals, prisons, and almshouses with its countless victims. may differ among themselves upon minor points, such as whether alcohol has any nutritive value, whether it should ever be used as a stimulant in sickness, whether moderate drinking is always harmful, but the medical profession is at one in its stand against that abuse of alcohol which leads to the wrecking of the home and race degeneracy. The question of the harmfulness of drink has grown more acute to medical men of late years, for with the wonderful progress of their science in all departments, this too has had its share of scientific study and investigation, from the clinical, pathological, and experimental standpoints. The evidence thus accumulated in the past twenty to thirty years has established so many convincing facts that medical men are aroused as never before to the need of restricting the sale of alcoholic beverages, and of teaching the public the facts they have come to know. They all agree that alcohol is a poison, taken in any form-beer, wine, hard cider, rum, whiskey, bitters, or patent medicines. There is no question as to its being a poison.

The retort that the active principles of tea and coffee are also poisons is no argument in favor of alcohol, for while taken in excess tea and coffee do induce certain mild nervous disorders, these are insignificant when compared with the unparalleled de-

structiveness of drink.

The discussion as to whether alcohol is ever a food is equally idle and evasive of the main issue. It is not a food like bread and butter, for it has venom in it. As Professor Abel, of Johns Hopkins University, says, "it is an easily oxidizable drug with numerous untoward effects which inevitably appear when a certain minimum dose is exceeded." I have italicized the word drug, because it is as a drug that alcohol is now regarded by most physicians. It is placed among the narcotics and anæsthetics.

I should like here to present a very brief summary of what scientific investigators have recently determined to be the action of this drug:

It is no longer considered to be a stimulant, but rather a depressant.

It perverts digestion.

It depresses and weakens the heart action.

It decreases the capacity to do muscular work.

It diminishes the intellectual functions, by dulling the creative faculty, impairing judgment, vitiating the correctness of perceptions, and by generating timidity.

It brings about slow, far reaching anatomical changes, such as fatty degeneration of the heart, kidney disease, diseases of the bloodvessels, changes in the muscular tissues and in the cells and fibres of the nervous system.

Its habitual use lessens the normal defenses of the organism against infectious diseases, especially tuberculosis.

In this connection I cannot do better than commend to your attention the extremely able article on Alcohol and the Individual, by Dr. Henry Smith Williams, in *McClure's Magazine* for October, in which all the best authorities are quoted in *extenso*. It is the most complete résumé of our scientific knowledge of the subject that has yet appeared.

With such an array of fact and authority before you, you will readily understand the position of physicians on this subject, and why they are the leaders in the antialcoholic crusade. They can hardly be thought to be either fanatical or hysterical in their propaganda. You cannot question the honesty or disinterestedness of their motives. If, however, you find here and there some dissenting voice, that of some university professor perhaps, you may be sure that it is not that of a person with medical experience or any one familiar with the material which all may read, but rather the voice of some one perversely interested. You might well question whether such an one is simply seeking sensational exploitation of himself or whether he might not even be subsidized by the vast commercial interests at stake, for you must remember that the annual consumption of alcoholic drinks in the United States is over a billion gallons.

The alcohol problem is so interwoven with our whole modern life, with politics, with industries, with government revenues, as a source of wealth, etc., that it affords matter for many sided discussion. But here we are only concerned with public health, and it is from that standpoint that I present the subject to you. I believe that human evolution has now reached the stage when the abolition of the use of alcohol as a beverage is expected and required. Abstinence is one of the principles of human eugenics, that new science that is just being horn.

There is no one here present who would feed alcohol to his dogs, horses, sheep, or cattle. These possessions are too precious for that. He is too much interested in improving their breed. He would recall Professor Hodge's experiment with alcoholized dogs, in which among twenty-three pups born in four litters to one pair of alcoholized dogs, nine were born dead, eight were deformed, and only four apparently normal.

Our best method of eradicating the alcoholic evil is that of a campaign of education. Every man, woman, and child should be made familiar in one way or another with what is known by the medical profession of the ravages of alcohol. The main facts in some brief form should be brought home to them. For instance, in Paris they put up a poster in every public hospital ward and on every prescription blank of their hospitals and dispensaries they print the following:

Alcoholism: Its Dangers.

Alcoholism is the chronic poisoning which results from the talatival use of alcohol, even if not used to the extent of producing drunkeiness. It is an error to say that aleohol is necessary to laborers occupied with fatiguing work, that it gives heart for work or renews their strength; the artificial excitement produced by it rapidly gives place to nervous depression and weakness. In reality alcohol has

no actual use for anyone.

The habit of drinking strong liquors leads rapidly to alcoholism; but the drinks called hygienic (in France) also contain alcohol, the difference being only in the dose. The man who drinks daily an immoderate quantity of wine, cider, or beer becomes alcoholic also, as well as he who drinks the stronger liquors.

The drinks labelled as aperitive (in France), such as absinthe, vermouth, and bitters, and the aromatic liqueurs are more pernicious because they contain, in addition to alcohol, essences which are themselves also violent poisons. The habit of drinking leads to family disaffection, the

forgetting of all social obligations, disgust with work, pau-

perism, theft, and crime.

This habit leads ultimately to the hospital, for alcoholism engenders the most various and destructive diseases— paralysis, insanity, disorders of the stomach and liver, dropsy. It is one of the most frequent causes of tubercudropsy. It is one of the most frequent causes of tubercu-losis. Furthermore, it complicates and aggravates acute diseases; typhoid fever, pneumonia, erysipelas, which run benignly in a sober man quickly kill the drinker.

The faults of the parents fall upon their children. If these live beyond the first months, they are menaced with idiocy, epilepsy, or later fall victims to tuberculous menin-

gitis or consumption.

For the health of the individual, for the existence of the family, for the future of the country, alcoholism is one of the most terrible dangers.

These statements of the French hospital posters could be made even more brief, as I have myself made them for use on my own prescription blanks as follows:

Alcohol is a poison. It is claimed by some that alcohol is a food. If so, it is a poisoned food.

The daily regular use of alcohol, even in moderation,

often leads to chronic alcoholism. One is poisoned less rapidly by the use of beer than by

drinking wines, gin, whiskey, and brandy.

Alcohol is one of the most common causes of insanity, epilepsy, paralysis, diseases of the liver and stomach, dropsy, and tuberculosis.

A father or mother who drinks poisons the children born to them, so that many die in infancy, while others grow up as idiots and epileptics.

These rules go but a little way, to be sure, but if the 132,000 physicians in the United States could be induced to do likewise, they might help a little to persuade some of the 198,669 saloonkeepers, bartenders, brewers, maltsters, distillers, and rectifiers in this country of the harmfulness of their trades.

Somewhere in one of his books Maeterlinck observes that if the human race were to give up meat and alcohol there would no longer be hungry people.

At any rate, a study of the twelfth census of the United States for 1900 is an interesting commentary upon Maeterlinck's suggestion. I find there among the "industry groups ranked by capital," after iron and steel and their products, the textiles, lumber and its manufacture, and paper and printing, that the industries of food and kindred products are capitalized at \$938,000,000, and those of liquors and beverages, \$534,000,000.

It is easy to see that if the \$0,38,000,000 capital in the food industry can supply the greater part of the food necessary for our nation's use, the \$534,000,-000 of capital worse than wasted on the industries of poisonous drinks might well feed all the hungry

and still leave a handsome surplus.

4 West Filliam in Street.

HYDROCEPHALUS.

By S. D. LUDLUM, M. D., Philadelphia,

Instructor in New dogy and New y Pennsylvania. wath dogy. University of

(From the Aver Chineal Laborator). Penns visua II spec-from the Department of Neurology and the Laboratory of Neuropathology of the University of Pennsylvania.)

The various writers upon hydrocephalus do not agree upon many points, and therefore the subject is still open for discussion. This paper records two cases of internal hydrocephalus in which were definite lesions causing the condition, both in the aqueduct of Sylvius, one following tuberculous meningitis, and the other the epidemic form of meningitis. By means of the foramen of Magendie and the two lateral apertures in the fourth ventricle, the system of ventricular cavities and the central canal of the spinal cord are brought into communication with the subarachnoid lymph space. The fourth ventricle drains the third by the aqueduct of Sylvius, and the third communicates with the lateral ventricles by the foramina of Monro. A path is thus provided by which the cerebrospinal fluid secreted within the ventricles by the various choroid plexuses constantly escapes, and thereby prevents undue accumulation and distension within the cavities of the brain and spinal cord. Any one of these passages is open to infective processes.

Bramwell reports the closure of the foramen of Magendie from meningitis with consequent hydrocephalus. Neurath (Neurologisches Centralblatt, 1896, p. 87) also reports a closure of the foramen of Magendie. There does not seem to be any report of search into the condition of the lateral apertures flanking the foramen of Magendie. But there are a few cases reported of involvement of the aqueduct of Sylvius. Dixly (Neurologisches Centralblatt, 1899, p. 977) has studied internal hydrocephalus in the horse, and thinks it is due to occlusion of that passage. Bourneville and Novy (Le Progrès médical, 1900, July 14) report chronic hydrocephalus in a child, with the aqueduct of Sylvius completely obliterated. Jouche (Bulletins et mémoires de la Société médicale des hôpiteaux de Paris, 1902, No. 7. p. 141) has reported a case of hydrocephalus with the aqueduct of Sylvius obliterated. Spiller (American Journal of the Medical Sciences, July, 1902) has put on record a case of internal hydrocephalus resulting from closure of the aqueduct of Sylvius by proliferation of the neuroglia. Spiller and Allen (Journal of the American Medical Association, April 13, 1907) report a case of partial occlusion of the aqueduct, probably due to congenital mulformation. It is not in any way a new observation, but the cases accurately reported are about as stated. Hydrocephalus due to occlusion of one or both foramina of Monro has been reported by W. C. White (Journal of Insanity, Iviii, No. 3), unilateral; and by Spiller, Unilateral Hydrocephalus Due to Partial Closure of the Right Foramen of Monro, in *The American Journal of the Medical Sciences*, July. 1902. Most of these cases were examples of chronic

^{&#}x27;In Obersteiner's Festschrift Dr. Spiller recorded another case of contail the against the Selvers to exceed another calculated upward movements, and has marked the case in which the constraints

hydrocephalus. Both of the cases appended in the article were acute secondary closures of the aque-

duct of Sylvius following meningitis.

Quincke describes an idiopathic internal hydrocephalus as an ependymitis causing a serous effusion and pressure effects, which might be compared to the serous exudates in the pleura or synovial membranes. It is hardly an inflammatory process, and Quincke likens it to an angeioneurotic ædema. This is termed an ependymitis, but in acute cases the ependyma is smooth and natural looking, and in chronic cases is thick and sodden. In most of the cases the choroid plexus is enlarged and congested.

Among 1,180 insane patients at the Norristown State Institution, Pennsylvania, there were 337 cases with dilatation of lateral ventricles; the majority of these showed swelling and cystic involvement of the choroid plexus, but not nearly such a large proportion have noticeable involvement of the ependyma. The cases were of the ordinary forms of insanity

with these conditions found at necropsy.

The inference is that the increase of fluid is due to the choroid plexus, that it is blocked, and more than a normal quantity of fluid secreted. Hyaline bodies forming among vessels would do this, and they are commonly reported. Burr and McCarthy, in a paper in The Journal of Experimental Medicine, 1899, from the result of experimental toxic injections, show that the condition of the ependyma in a case of acute hydrocephalus is similar to a toxic condition of the ventricular fluid. This fact also being in favor of the choroid plexus being the important factor of the disorder, and not an ependymitis. Engorgement of the choroid plexus would shut up the foramina of Monro and this could cause lateral hydrocephalus. The inflammatory condition of the plexus with its ensuing exudate could furnish the fluid, or, as has been said, a retardation of blood flow by hyaline bodies in the vessels causing increased transudate; and the thickened condition of the ependyma be due to pressure of fluid or the retention of the fluid becoming more and more toxic.

The characteristic composition of the cerebrospinal fluid-viz., a low percentage of albumin and a high percentage of potassium salts-shows that it is not an ordinary transudate, but a secretory product from certain cells, probably those of the choroid plexuses. (Falkenheim and Nauryn, Archiv für experimentelle Pathologie, xxii, p. 269). The resorption of this fluid takes place mainly in the Pacchionian bodies and to a lesser extent in the neighboring lymphatics. A meningitis would impede this resorption, production increased and absorption diminished. So the primary change in Quincke's type may be in the choroid plexus, with secondary action upon the ependyma and in the acute meningitic forms due to closure of one or more foramina.

Alcoholism on the part of parents is supposed to play a part in hereditary hydrocephalus. Trau-matism after birth seems to have produced certain cases. But all cases would seem to centre upon patency of openings and amount of secretion from the choroid. External hydrocephalus can usually be explained by atrophy of the brain substance, met with in old age, after hæmorrhage, softenings, or sclerosis in lingering or cachectic diseases. Hydrocephalus due to brain growths is quite obvious in certain cases and needs no comment.

Case I.—Dr. Henry Hutchinson's Case: The patient was taken to the Pennsylvania Hospital with fever, there developed stiffness of the neck, Kernig's sign; with this there were absent knee jerks and abolished Achilles reflexes. Pupils were equal and reacting sluggishly to light. Lumbar puncture showed in smears the diplococcus intracellumbar. laris of Weichselbaum. Leucocyte count was 19,000. Lumbar puncture at two successive times showed an improvement as the case progressed. Then the ears began suppurating, the condition of the patient became worse, and eventually death ensued at the end of seven weeks of

A. (871), C. R. Autopsy was performed by Dr. Robinson, on June 11th. Anatomical diagnosis: Subacute puruent cerebrospinal leptomeningitis; hydrocephalus, puruent otitis media; bronchopneumonia, congestion of lungs; cloudy swelling of liver; swelling of mesenteric lymph

Body was much emaciated; 169 cm. in length; pupils equal, slightly dilated; discharge of purulent material from

each ear.

Brain: On removing the skull cap, the dura appeared injected and a little thickened, the convolutions flattened and the vessels of the pia injected. The tip of the left temporal lobe was swollen and had a cystic feel. All about the base of the brain was seen yellow pus, especially between the lobes of the cerebellum. The pia was everywhere thick-ened. The floor of the third ventricle behind the optic chiasm was purplish blue in color and bulged. On separating the cerebellum from the cerebral hemispheres a considerable quantity of clear watery fluid flowed out, in all about 150 c.c. The brain was put into formalin.

After hardening in formalin, a horizontal cut made through the lateral ventricles showed the latter considerably dilated, especially in the posterior and lateral horns. The choroid plexuses presented a curious appearance. At the point where each plexus curved downward into the descending horn of the ventricle, bands of inflammatory ties the ventricle of the ventricle. In addition, there was in the left plexus a firm, tumorlike mass, I cm. in diameter. The temporal a firm, tumorlike mass, I cm. in diameter. lobes were cut into from below; the wall here was very thin, measuring I to 2 cm. in thickness, and the descending horn of the ventricle was seen to be much dilated. choroid plexus, seen through the incision, presented the same appearance as that described from above. The left descending horn was somewhat more dilated than the right. At the tip of the left temporal lobe there was a small area of softening, I cm. in diameter, situated just beneath the gray matter.

Spinal Cord: Dura was somewhat thickened, tough, and

opaque. On opening it there was seen beneath the pia, at various places, small masses of rather dry, thick, yellow, purulent material almost caseous in consistence. The ves-sels of the pia were injected. The spinal cord was well preserved, and was quite firm in consistence. No enlarge-

ment of the central canal was seen.

On opening the middle ears, both were found to contain a considerable quantity of rather thick yellow, purulent material. There was no perforation of the tegmen tympani.

Grossly, there was found a cyst of the left temporal lobe. Both ventricles were dilated. There was a tumor in the left choroid plexus, and attention is drawn to the fact that on cutting through the peduncles in separating the cerebellum from the cerebral hemispheres there was an escape of 150 c.c. of fluid. The fact is explained by the infiltration of the Sylvian aqueduct by inflammatory tissue causing hydrocephalus.

Abscess of the temporal lobe occurs in ninety per cent. of the cases of chronic otitis media; it may be encapsulated or surrounded by softened brain tissue; it may be multiple or single. The abscess in this case came directly from the meningitis and the ear suppuration following.

Microscopical Examination: Sections through the wall of the lateral ventricles showed marked signs of inflammation; the subependymal tissue was infiltrated with round tion; the subependymal usua was infiltrated with round cells, densely so in the neighborhood of bloodvessels, and there was very evident proliferation of neuroglia tissue. In a few places the ependymal epithelium was absent. The choroid plexus was the seat of intense inflammation. Its vessels were greatly distended with blood, and the whole tissue was infiltrated with small round cells, chiefly of

Tumor: The tumor, which was described at autopsy, was

put into decalcifying fluid and showed the following: The tissue appeared to be identical with that of the choroid. Very large numbers of concentrically marked amyloid bodies were present, especially at the periphery. The centre of the tumor consisted principally of loose, reticulated tissue, not unlike lung tissue in appearance; the spaces in the reticulum were for the most part empty, though a few contained a translucent, homogeneous staining substance. contained a translucent, homogeneous stanning substance. A considerable area of the tumor was occupied by the remains of calcified substance. The blood vessels were greatly distended with blood, and the whole tumor was surrounded by densely packed round cells. Sections through the cortex cerebri of the temporal lobe, in the region of the abscess, showed the pia acutely inflamed, with its vessels congested, and its substance thickly penetrated with round cells. The brain substance where it formed the wall of the abscess was also densely infiltrated; and between the abseess and the surface of the gray matter, the blood vessels were everywhere surrounded by masses of round cells. Near the abscess, hæmorrhages into the brain tissue were

The cranial nerves were examined for degenerations by The cranal nerves were examined for degenerations by the Marchi and by the Weigert methods. The optic nerves showed a few degenerated fibres, seen by the Marchi method. The oculomotor nerves each showed a fair number of black stained fibres by this method. Degenerations were also present in both of the facial nerves. Examined by hæmatoxylin and cosin, the second, third, and seventh nerves were seen to be surrounded by inflammatory tissue, the inflammation involving the connective tissue trabeculæ within the nerves themselves. The condition was most

marked in the case of the seventh nerve.

It is very probable, judging from the condition of the chorioid plexus and from the fact that there were such marked bands of adhesions stretched from these across to the wall of the lateral ventricle at the beginning of the descending horn, that the flow of cerebrospinal fluid ac-cumulated and caused dilatation of the descending horns. The aqueduct lesion was in all probability caused by extension of the infectious process from the abscess in the temporal lobe. On its extension the process must have first affected the chorioid plexus; and these structures then underwent changes described, with possible dilatation of the descending horns of the lateral ventricles, and adhesions. Next, the third ventricle and the aqueduct of Sylvius were involved, and when the process of inflammation had succeeded in closing up completely the aqueduct, the hydrocephalus came to involve not only the descending horns but also the rest of the lateral ventricles and the third ventricle. That the process must have been chronic is shown by the presence in the exudate in the aqueduct, of young connective tissue

Spinal Cord, lumbar region: The pia is markedly infil-trated with round cells, and shows distended vessels filled with blood. In the white matter at the periphery of the cord there was seen some absorption of nerve fibres. Some scattered recent degenerations were present in the posterior columns in Marchi sections. All the tracts of the

white matter stained well by the Weigert method.

Cervical region of cord: The pia showed the same marked infiltration, and engorgement of its vessels with Marchi sections showed degenerated fibres in the posterior columns and in the crossed pyramidal tracts, as well as in the anterior roots. Sections stained normally by

the Weigert method.

Pons: Sections through the upper part of the pons showed the lumen of the fourth ventricle where this passes into the aqueduct of Sylvius, completely closed up by a mass of round cells. In a few places the normal lining epithelium of the wall was present, in one or two areas it epithelium of the wall was present, in one or two areas it appeared to be in process of proliferation. For the most part, however, the epithelium was absent, the round cells of the exudate fading into the surrounding tissues. These round cells were for the most part mononuclear in type; many had pale, vesicular, large nuclei. The blood vessels in the surrounding brain tissue were engorged with blood, and were surrounded by many round cells

In one of the corpora quadrigemina there was seen a small area of softening with some absorption of tissue; the walls of the cavity so formed consisted of necrotic tissue.

Following the case of Dr. Hutchinson I have had a case to examine from the service of Dr. Lloyd, at the Philadelphia Hospital, which has been similar in showing a blockage of the aqueduct of Sylvius.

CASE II .-- A man, colored, aged thirty years, came in a stuporous condition; he showed symptoms of meningitis. He died in a few days, and the brain showed meningitis and some hydrocephalus. This hydrocephalus was caused by blocking up of the aqueduct of Sylvius with a round celled infiltration extending in as far as the middle of the

superior colliculus

Sections showed portions distended with round cells and at some points the canal had broken open and the nervous tissue infiltrated with inflammatory material. This blockage had caused a moderate distention of the ventricles. There was some infiltration of the walls of the ventricles, but of a slight grade. The chief focus in the ventricles seemed to be at the entrance to the aqueduct and extending into it. There was a marked tuberculous meningitis, especially at the base of the brain. This process was apparently secondary to tuberculosis of the other parts of the body, for the autopsy disclosed tuberculosis of the lungs, liver, spleen, kidneys, and peritonæum.

There was no change in the ependyma or chorioid, of the third and lateral ventricles, but there were inflammatory

changes in the floor of the fourth ventricle.

It would seem that the source of infection was via the foramen of Magendie, and hence into the aqueduct.

THE DIAGNOSIS OF ACUTE MILIARY TUBER-CULOSIS*

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Acute miliary tuberculosis is a disease so varied in its clinical manifestations, even independently of the distribution of tubercle in the different organs, and in individual cases so closely simulates other affections, that its diagnosis is often attended by no little difficulty.

Especially is this true if the case has not been observed from the beginning and when a reliable

history is not available.

When the question of distinction arises the history is often of great aid and a careful physical examination may assist materially in the individual case, if the presence of an old tuberculous focus be thereby revealed. In tuberculous or so called scrofulous persons, and in those who give a history of previous tuberculous affections of internal organs, we should not fail to enquire regarding the possible relation of traumatic influences. Again the appearance of suspicious symptoms in the course of several weeks after surgical operations upon tuberculous bones and joints, lymph glands, and other parts, is suggestive of generalization of the tuberculous infection. In instances with a meningeal onset in young children, the coexistence of a chronic otitis or mastoid disease may throw light on the cause of the symptoms.

In every case it should be borne in mind that we are dealing with a secondary process which has its origin from a primary focus somewhere in the body.

Although such ætiological enquiries are important and may assist greatly in making a correct diagnosis, especially in instances in which tuberculosis is found, it is nevertheless essential to avoid hasty conclusions, and this is particularly true when the

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symptoms are atypical. For example, in young children, though they have a tuberculous family history or perhaps glandular tuberculosis, we may actually be contronted with a bronchopneumonia that has given rise to convulsions, and to the undue rapidity of the respiration and the pulse, which may reach a degree in generalized bronchitis that equals or exceeds the frequency commonly observed in acute miliary tuberculosis.

Thus the history of, or presence, of tuberculosis is but a link, although an important one, in the chain of circumstantial evidence upon which we may base our final opinion, and this is true of all symptoms, every one of which may have another explanation when considered independently of the rest.

The respiratory insufficiency is one of the most constant, and in the absence of physical signs which could explain it, it is one of the characteristic symptoms of the pulmonary form of the disease. When this has been preceded with the usual onset of general malaise, loss of appetite, and the patient has at first slight and then increasing dry cough, when we can exclude a local lung affection or a pleural effusion, when there is no evidence of a pericarditis or endocarditis, and the pulse is weak and unduly increased in frequency, with or without the irregular fever, the evidence becomes strong in favor of miliary tuberculosis of the lung, and more so still if we have at the same time support from an ætiological point of view.

In such cases one will rarely err in the diagnosis of miliary tuberculosis of the lungs if the symptoms increase in intensity and there is also rapid loss of weight. The latter is a prominent feature in almost every case of acute miliary tuberculosis, and may be seen in instances in which the fever is of a mild type and when a fair amount of nourishment is taken by the patient. The diagnosis would still be supportable in instances in which signs indicative of consolidation appear in the lung in the course of the disease, and the sputum becomes streaked with blood or actually becomes rusty for a time; nor would intercurrent pleural pain or signs of an effusion require its reconsideration. The later advent of more marked dyspnæa with cyanosis still further strengthens the evidence, and the diagnosis is eventually established, even though none of the symptoms are pathognomonic and ætiological support is lacking.

The physical examination of the chest shows, as a rule, nothing characteristic, but can still aid us in certain cases. The examiner may be confused in instances in which the affection develops in the course of whooping cough or phthisis, when cartarrhal affections belonging to the preexisting pulmoutary disease are present, the more so if he has not himself been familiar with the local auscultatory phenomena, prior to the advent of symptoms indicative of a generalization. In such cases the results of the physical examination of the chest are not available for diagnostic consideration, excepting as a basis for estimating in how far they may be accountable for the property and dyspacea, and the general condition of the patients.

On the other hand records of, or reliable information of the recent chest examinations are often of have shown the disease limited to certain areas, while other portions of the lungs were free from catarrhal signs. When in such cases no change is apparent or the catarrh appears to have become generalized, and especially when this is indicated by a sense of stickiness, crepitant and subcrepitant râles, suggestive of bronchiolitis, the result of the chest examination may give important support to the diagnosis.

Early pleural symptoms, especially pain, are often mentioned in the description of cases. Jürgensen (1) described a peculiar rubbing or a soft friction sound without local pain, which he noted in acute miliary tuberculosis, both on auscultation and by palpation; this he attributed to the presence of miliary tubercle in the pleura and which he and Litten confirmed by finding corresponding tubercle at autopsy. Similar observations have since been made by Burkart (2), Hager (3), Riesman (4), and others, who have noted this peculiar rubbing in exceptional cases.

In the pulmonary form the early negative findings, or the development of a diffused catarrh, the dyspnœa, and increased pulse rate are the chief features and may continue to be so until the end, unless meningitis develops in the further course, The fever attracts often but little attention, although it is rarely entirely absent. Careful observations should always be made, and the temperature should be measured in the rectum, the dyspnæa and mouth breathing preventing the usual approximation to correctness of the mouth temperature. Frequently we find that the fever which before was absent or intermittent has assumed an irregular remittent type, and that the normal is not reached at any time during the twenty-four hours, and occasionally an inverted type of the fever curve may occur. latter is, however, also observed in other diseases, and is perhaps as frequent in acute pneumonic phthisis as it is in acute miliary tuberculosis. When the earlier course leaves us in doubt, the subsequently increased signs of pulmonary obstruction and of prostration, and the occurrence of delirium, the pallor, the continued emaciation, and, as already stated, the absence of physical signs to account for the dyspnœa aid in excluding other causes.

In distinctive diagnosis of the pulmonary form from other affections of the lungs we have to consider more particularly pneumonia and bronchitis.

Bronchopneumonia and acute capillary bronchitis, especially in young children, can cause great resemblance. Even the prodromal stage may correspond in cough, slight fever, loss of appetite, or the onset may be sudden in both affections with convulsions. Henoch (5) reported several cases of pneumonia of the upper lobes of children in which the symptoms were suggestive of meningitis.

The respiration and the pulse can have an equal frequency, and the fever may be equally high. The demonstration of consolidation in the lung, and especially the presence of bronchial respiration, would be suggestive of pneumonia. If the case has been seen from the beginning we have been able to observe the dry stage of the catarrh to be followed by moist râles, and have been able to note its progressive extension from larger to smaller bronchi; this would likewise speak in favor of pneumonia. A

diffuse capillary bronchitis, however, is in itself characteristic of miliary tuberculosis of the lungs, and unless we have the aid of other symptoms, especially on the part of the nervous system, the diagnosis may remain in doubt, or be shown in error at autopsy, in cases that are rapidly fatal. Such difficulties are not frequently encountered; the onset of miliary tuberculosis is, as a rule, slower, and the physician is liable to see the case before the pulmonary symptoms are developed to a degree that exudative inflammations in connection with dense deposits of miliary tubercle can resemble a pneumonic consolidation of the upper lobes. Moreover, such a complication in acute miliary tuberculosis is in itself very rare. The bronchiolitis caused by miliary tubercle in the lung is, as a rule, preceded by increased frequency of the respiration and by dyspnœa, and in the earlier period the chest examination is either negative or the inspiratory murmur in the upper lobes is markedly feeble as compared with that of the lower, and when catarrhal signs appear they develop in a reversed order, originating and extending from the smaller to the larger bronchi. We are therefore liable to hear first but few and later more crepitant or subcrepitant râles, in portions of the lung that are resonant, or hyperresonant on percussion. In contrast with ordinary bronchiolitis at this time the lower posterior portions are often less involved than the upper, and there is no evidence of downward extension of the catarrhal process, unless by mere coincidence which may have been in a case observed by West (6) of a boy, nine months old, who was seen two weeks after contracting a cold, and in which he diagnosticated catarrhal bronchitis. The child died six days later of dyspnæa, and the autopsy showed miliary tuberculosis of the lungs.

In adults acute croupous pneumonia is not liable to be mistaken for acute miliary tuberculosis of the lung, although when in the course of the latter typical rusty sputa appear one would naturally think of the former. In such rare cases exudative pneumonic foci are probably associated, but when situated in the upper lobes they are suggestive of tuated in the upper lobes they are suggestive of tuated in the upper lobes they are suggestive of tuated in the upper lobes they are suggestive of tuated in the upper lobes are suggestive of the abrupt onset of croupous pneumonia often with a chill, the regular fever, and the marked physical signs in the lower lobes, as well as the general course, and the appearance of the patient difference of the prevent error.

Pneumonia and bronchitis in adults are more liable to lead to diagnostic difficulty when occurring in aged persons and especially in those who are otherwise decrepit. Very often such affections begin insidiously, and there is a gradual development of dyspnæa, cyanosis, and irregular fever, with local signs of a diffused bronchitis; the illness is attended with much prostration and general exhaustion, and leads to death more or less rapidly. In such cases a generalized miliary tuberculosis which has followed a chronic or subacute type may be found unexpectedly at the autopsy.

A pleurisy with effusion could be thought of in cases in which the miliary process of the pleura causes marked exudate, and when the patient is first seen in this stage. It could, however, be in rare instances only that a careful enquiry and examination of a patient who suffers from acute miliary tuber-

culosis would not exclude ordinary pleurisy as the cause of all that can be found and observed in such cases.

Embolism of the pulmonary artery, when of small size and involving numerous branches successively, or when in a larger branch the obstruction develops gradually, may give rise to symptoms which can correspond more or less with those caused by miliary tuberculosis of the lungs, and death may occur in the course of several days or weeks, with signs of respiratory and circulatory insufficiency. Nevertheless, the clinical picture differs, and even when such changes occur gradually, the patient has experienced a more abrupt change in respiration. At the same time, his attention has been attracted to the disturbed heart action which occurs simultaneously and which continues forcibly, often with precordial distress, while the small, irregular pulse in connection points to obstruction in the pulmonary circulation as the cause of the dyspnæa and cyanosis. If the embolism is not of septic origin there is no fever, and although the patient does not think of the relation, the physician would necessarily enquire and look for phlebitis, or appreciate the probable relation of a septic affection, or of crushing injury to bone, etc., in the course of which the accident has occurred.

In the typhoidal form, the difficulties in diagnosis, in so far as we seek to establish it upon symptoms, are liable to be greater than they are in cases in which pulmonary or meningeal symptoms are prominent. In many cases the coexisting symptoms of respiratory and circulatory insufficiency are important aids in distinguishing it from typhoid fever, and the temperature curve and rapid emaciation are likewise liable to direct the attention to the true nature of the disease.

However, the resemblance in some cases which have been reported has been most complete. Senator, among others, has recorded such cases in 1881. . in one of which the autopsy showed acute miliary tuberculosis, although the type of fever, the presence of splenic enlargement, roseola, distended abdomen, dicrotic pulse, difficult hearing, epistaxis. singultus, and eventually the occurrence of purulent parotitis, all appeared to speak for typhoid fever. But such cases are exceptional, and ordinarily the two diseases present striking differences, which cannot escape the observation of the attending physician, and even in the more irregular types a careful study of the fever, pulse, and respiration will, in most instances, enable him to arrive at a correct decision.

In acute tuberculosis the fever may be continuous with scarcely any morning remissions. It is then more continuous than typhoid, and the typical typhoid curve is missing. In other cases it is intermittent, the remissions are irregular, or it may be of an inversed type, as has already been mentioned.

The pulse, as a rule, exceeds in frequency that which would be in harmony with the existing fever, a fact which has been pointed out by all observers. In the fully developed disease 120 to 130 pulsations to the minute are not uncommon, and with increasing pulmonary obstruction the rate may be increased to 150 or more, even when the fever is comparatively low.

Increased frequency of respiration is noted at

times quite early, but it usually belongs to that period in which tubercles have formed in the lungs. As the disease progresses the frequency naturally increases, the respirations become gradually deeper, and a true inspiratory dyspnœa results. Even in adults 40 to 60 respirations a minute are not unusual, and in children this may be much exceeded.

The marked enlargement of the spleen as it occurs in typhoid is rare in acute miliary tuberculosis, and a palpable spleen speaks strongly in favor of the presence of the former, especially in adults. A. Fränkel (7), however, found that in children the splenic enlargement may become equally marked. Wagner (8) and also Fränkel (9) have called attention to the enlargement and pain on pressure of the liver in children, when this organ is included in the miliary dissemination. Fränkel has seen severe icterus, and in either children or adults he believes an enlarged liver speaks for tuberculosis rather than for typhoid.

When the correspondence of symptoms is complete the question of distinctive diagnosis does not arise, but in general practice where laboratory facilities are not available, such cases still continue to afford occasional surprises upon the autopsy table. When, however, such facilities are at hand, we now have additional aids in bacteriological examinations and serum reactions. Regarding the latter a characteristic positive Widal reaction on the one side or a marked Arloing-Courmont reaction on the other, is rarely misleading, but it must be remembered that tuberculous subjects often show a modified Vidal reaction which, though less marked than in typhoid fever, may cause confusion, and that the Arloing-Courmont test may prove entirely negative in tuber-

culosis.

In all doubtful cases in which the question of typhoid fever enters into the distinctive diagnosis, bacteriological examinations of the blood, urine, and faces for the demonstration of Eberth's bacillus should be made.

In cases in which acute miliary tuberculosis occurs with or soon after convalescense from typhoid fever, it may be mistaken as a relapse, especially so when the course of the primary disease has been typical and the diagnosis was well established. In such cases great difficulty may be encountered when the symptoms are atypical, and the bacteriological examinations just referred to avail nothing in the recognition of the complication.

Unless the examination of the blood should again show Eberth's bacillus or clear up the doubt by the presence of tubercle bacilli, we must depend upon the analysis of symptoms, and the demonstration of choroid tubercle when meningeal symptoms are present, which suggest a basilar localization.

The diagnosis of the meningeal form of acute miliary tuberculosis offers less difficulty when meningeal irritation and inflammation occur, after characteristic pulmonary, with or without typhoidal symptoms, have been observed in its earlier course. In such instances the occurrence of meningitis, although obscuring for the time the pulmonary affection, removes, as a rule, any previous doubt, and confirms the tuberculous origin of the preceding symptoms as well as of the meningitis.

Cases with meningeal symptoms have been observed in which the on ct and course were not sufficiently distinctive to exclude tuberculous meningitis, and in which the distinctive diagnosis, especially from typhoid with complicating meningitis due to Eberth's bacillus or from pneumonia with associated pneumococcus meningitis has at first proved more or less perplexing. Our chief dependences for exact information, then, are the specific sera reactions, the examination of the fundus of the eye, examination of the spinal fluid, obtained by lumbar puncture, and the bacteriological examinations of the blood and secretions.

In the ophthalmoscopical examination of the fundus, choroidal tubercles have been found with various frequency, but, as a rule, at such a late period that the nature of the affection was established on clinical grounds long before. In rarer instances the discovery of choroidal tubercle has become an aid in diagnosis. B. Fränkel (10) reported such a case in 1869, in a child, age six, in which he found choroidal tubercle although meningitis was absent, nor did it appear in the subsequent course.

In a second case he found them ten days prior to the onset of meningeal symptoms. Brüire (11) was able to make a distinctive diagnosis from typhoid fever, and Loeb (12) succeeded in the same.

way by finding tubercle of the choroid.

While the ophthalmoscopical examination is but rarely of aid, in the early period of the disease and never in the initial stage, the presence of tubercle of the choroid supplies absolute evidence that more or less generalization of a tuberculous process has occurred, and, like the demonstration of tubercle bacilli in the blood or the appearance of miliary tubercle upon visible mucous membranes in the course of the disease, it removes all previous doubt, in instances where the general symptoms justify the diagnosis upon clinical grounds only.

In cases in which meningeal symptoms occur early and predominate in the prodromal and subsequent periods, the slower onset and more protracted course speak for a tuberculous origin. Such cases differ then but little from tuberculous meningitis, without generalization, the consideration of which does not fall within the scope of this paper.

In cases of acute miliary tuberculosis, tubercle bacilli have been occasionally found in the blood.

Weichselbaum (13) was the first to find them in the heart clot of three cases which he examined, and at the same time he succeeded in demonstrating their regular presence in the miliary tubercle. Meissels (14) confirmed Weichselbaum's autopsy findings, and he further found tubercle bacilli in one of two cases examined during life. Lustig (15) also found tubercle bacilli intra vitam in one case and in the heart clot after death in eight others.

Reutimeyer (16) demonstrated tubercle bacilli in the fluid withdrawn with a hypodermic syringe from the spleen, sixteen hours before death, and Sticker (17), Doutrelepont (18), and Ulcacis (19) found typical bacilli in blood specimens taken from the finger tip. The last named authors were able to demonstrate them at a time when the diagnosis between typhoid fever and acute miliary tuberculosis was in doubt. Tubercle bacilli have since been found in the blood by various others by direct examination of stained specimens taken during life, but this method frequently fails, and the animal experiment is necessary for their demonstration.

Most authors have failed to find tubercle bacilli in the blood sufficiently early to render their demonstration of value in distinctive diagnosis. Nevertheless, Wild (20) and Ribbert (21) think that tubercle bacilli are present in the blood more constantly than former examinations have indicated, and they even believe in their multiplication in the blood. The more recent observations of Jouset would, in

some respects, confirm these views.

Jousset (22) by his method' found tubercle bacilli in the blood in almost half of the cases of acute and subacute phthisis which he examined. He succeeded in demonstrating them with especial frequency in caseous pneumonia, and in two cases he was able to make the distinctive diagnosis of acute miliary tuberculosis from typhoid fever. The frequency of his observations has, however, not been confirmed by other authors, among them Bonardi (23) who, nevertheless, considers the method of great, and even of as much value as the serum reactions of Arloing and Courmont, and the tuberculin test in certain cases. Debove (24) also thinks favorably of the method.

In the urine of a case of acute miliary tuberculosis in which the diagnosis pointed to typhoid fever, Pröbsting (25) found tubercle bacilli, and in the further course choroidal tubercle was also demonstrated. The autopsy in this case showed caseous changes in the kidney indicative of an older lesion. Kleczetow (26) diagnosticated acute miliary tuberculosis in two cases by finding tubercle bacilli in the urine, and recommends its examination in doubtful cases.

Baumgarten (27) and others have obtained positive results from inoculations with urine, but for diagnostic purposes experimental tests with blood and urine are too slow.

What aid may be derived from the conjunctival administration of tuberculin as suggested by Calmette and from cutaneous administration known as won Pirquet's method remains to be seen. Bandler and Kreibish (28) failed in obtaining a reaction by the cutaneous method in four cases of miliary tuberculosis of mucous membranes; all these patients had high fever and were otherwise cachectic, which is in accordance with Pirquet's own observations that miliary and cachectic cases do not react.

Eyre, Wedd, and Hertz (29) obtained a positive conjunctival reaction in a case of tuberculous meningitis, and failed in another in which the comatose stage had been reached thirty hours before death. On the other hand, Cohn (30) found that a reaction was frequently obtained in typhoid fever patients, especially in the stage of convalescence. Further observations are necessary to establish the reliability of either method, but as they are unattended with danger and applicable in the presence of fever.

there can be no objection to their trial in cases where the subcutaneous administration of tuberculin is contraindicated.

The urine shows nothing characteristic. It is, as a rule, diminished in quantity, sometimes very scant, and Rosenstein (31) has noted anuria in children, probably depending upon implication of the kidneys in the miliary dissemination. Slighter degrees of albuminuria are often present, and Munro (32) noted albuminuria in eleven of seventeen cases which were confirmed by autopsy. Acute renal tuberculosis existed in over seventy per cent. of these cases. In six cases without albuminuria the kidneys were thus affected in but three instances.

The presence of indican, especially in children, to which Hochsinger called attention as of aid in distinctive diagnosis, and which Djouritsch (33) also thinks valuable in this respect, occurs in other gastrointestinal affections. Monti (34) found it only in very severe cases, and never in the beginning, and other authors who investigated the subject in acute and chronic tuberculous affections of children. as, for instance, Noute (35) and Steffen (36), attach no diagnostic import to its presence.

The diazo reaction while not available for distinguishing typhoid fever may be of aid in the diagnosis of the pulmonary and the meningeal form. Nissen (37) found the diazo reaction in ten of fifteen children, suffering from acute miliary tuberculosis, it having preceded the onset of meningeal symptoms for a period of from four to eight days in eight of his cases.

Kephallinos (38) recorded the diazo reaction in twenty-two of forty-six children with generalized miliary tuberculosis and coexisting meningitis.

In certain cases in which acute miliary tuberculosis follows its course without distinctive symptoms, presenting the clinical picture of some other disease, a positive diazo reaction will be of diagnostic value; for example, in such cases as reported by Strauss (39), Reinhold (40), and others, in which before death there were only symptoms of acute polyarthritic rheumatism, although the autopsy showed general acute miliary tuberculosis. Rheinhold's case of a young woman, aged eighteen, progressed under the symptoms of erythema nodosum with rheumatoid manifestations, until symptoms of meningitis developed unexpectedly.

Other unusual clinical symptoms suggestive of septic processes by the occurrence of well marked chills at irregular periods with great variation in temperature, or periods of intermission will at times draw the physician's attention in an entirely different direction, as shown by the cases reported by Fischel (41) and by Späth (42) in which acute miliary tuberculosis developed during the puerperium. Späth's case appears to have been complicated by a puerpural infection, but in the case of Fischel, there was no such evidence, and it is of interest additionally, by an intermission of symptoms sufficient to warrant the patient's discharge from the

In the foregoing consideration of the diagnosis of acute miliary tuberculosis there will be found nothing new or original, but I have endeavored in the light of present knowledge to review the subject as practically as possible in the time allotted, and expected.

^{&#}x27;Jousset's method, which is also applicable to pleural and peritoneal students, is for blood, as follows. From to to be set of blood are taken from a vein by means of a sterilized syringe and diluted with 150 to 200 c.c. of sterilized water. After coagulation has occurred the clot is filtered out upon a boiled compress and washed with sterile distilled water to remove all serous fluid. It is then placed in a flask, to which are adoled to be accompanied to the sterilized water. The fluid of the sterilized water, and the sterilized water, and the sterilized water, and the sediment of social methods and 1,000 grammes distilled water). The fluids is placed in the incurrent of social methods and 1,000 grammes distilled water). The fluids with the sediment of social methods hours, digestion being bastened by agitating every half hour. The resulting fluid is centrifugalized and the sediment stained for the bacilli. To fluids which do not coagulate spontaneously or in the examination of urine he adds a small amount of blood plasma from the horse.

pecially to emphasize the more important points which are of real value in the distinctive diagnosis from other affections.

Briefly these may be summarized as follows:

I. The rapid emaciation which is a striking feature in almost every case, and which is out of all proportion to the degree of fever, the state of the digestive organs, and the amount of food taken.

2. The bronchiolitis of acute miliary tuberculosis of the lung is characteristic in that the catarrhal signs appear first in the smaller and then extend to the larger bronchi, instead of in the reverse order as in ordinary bronchitis. In further contrast to ordinary bronchiolitis the lower posterior portions of the lung in acute miliary tuberculosis are often less involved than the upper.

3. Cases in which typhoid fever is minutely simulated by acute miliary tuberculosis or in which the two diseases coexist are rare, and a careful study of the pulse, temperature, and respiration will usual-

ly lead to a correct distinction.

4. Serum reactions are reliable when present in well marked degree, but tuberculous patients may show a modified Widal reaction and the Arloing-Courmont reaction is not always present in tuber-

5. The ophthalmic test as applied by Calmette and the cutaneous application of tuberculin according to the method of von Pirquet, while not yet established as thoroughly reliable, are safe, and one or both should be employed in all doubtful cases, especially if the subcutaneous injection of tuberculin is contraindicated.

6. Bacteriological examinations of the blood, fæces, and secretions may be of great aid in doubt-

ful cases.

7. The appearance of choroid tubercle or miliary tubercle of visible mucous membranes in the course of the disease removes all doubt.

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THE OPSONIC THEORY AND ITS PRACTICAL APPLICATION.*

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An opsonin' is an internal secretion found in the blood fluids, plasma, and serum. Just where opsonic metabolism in body cells takes place is unknown. Fluid extracts of glandular and connective tissues have not been examined for the purpose of estimating their comparative opsonic content and thus discovering, possibly, the seat of opsonic production.

"Read before the Syracuse Academy of Medicine April 16, 1907, and now (November, 1908) revised for the New York Medical

And how (November, 1908) revised for the latin from the Greek means a caterer or one who prepares food for another. An opsonin is supposed to combine chemically with a bacterium and, thereby, to convert this otherwise unattractive vegetable into palatable food for a lemostre. The term opsonin was first used by Wright and

An opsonin belongs to a class of immunizing antibodies of which agglutinins and antitoxines are members, but the relation of opsonins to other antibodies has not been satisfactorily determined. An opsonin in its own peculiar way is a defender of the body against the attacks of some particular

microorganism.

It is probable that opsonins are produced by cells which have become more or less specialized through long stages of animal development to help higher organisms to resist bacterial invasion. Thus the opsonic function in man would be developed with use in overcoming the microorganisms which constantly enter the body, usually in small numbers, but from time to time in almost overwhelming hosts. Each microorganism susceptible to opsonic resistance would thus develop its own opsonin. In harmony with such a probability it is found in vitro that when a normal serum loses its staphylococcopsonin, for instance, there still remains in the fluid, for example, the normal amount of tuberculo-

opsonin.

Be the origin of opsonins what it may, a healthy man has what may be regarded as a normal amount of each of various opsonins as a constituent of his blood plasma and the lymph permeating his tissues. With normal amounts of opsonins in plasma and lymph, and a normal condition of opsonogenetic cells, the healthy man has a normal resistance to bacterial invasion. Persons havng a less or greater than normal amount of an opsonin in their tested serum have a respectively less or greater resistance to the corresponding bacterial disease. When an average normal amount of an opsonin found in tested serum is represented by the figure I, less amounts by figures less than I, and greater amounts by figures greater than I, such figures become opsonic indices of patients' resisting power to a bacterial infection. The tuberculoopsonic index of a somewhat large number of tuberculous and nontuberculous subjects has been determined. Such determinations show that the tuberculoopsonic index in the nontuberculous has a range of from 0.8 to 1.2, while in patients suffering with localized and afebrile tuberculosis the tuberculoopsonic index is usually below o.8. These patients have a low tuberculoopsonic index corresponding with their low resistance to tuberculous infection.

In cases of furunculosis, acne, or sycosis due to a staphylococcic invasion the staphyloccoopsonic index is found to be low, perhaps 0.4, as compared with the average normal staphylococcoopsonic index. In pneumococcic empyema the pneumococcoopsonic index is low. In gonorrheal arthritis the gonococcoopsonic index is low. In cystitis due to an invasion of bacilli coli communis the corresponding bacillary opsonic index is low. These are examples of infections which, if not treated, are likely to be indefinitely prolonged, because they do not improve so long as their opsonic index remains In self limited infections with a definite ending the early low opsonic index gives place toward the close of the disease to a normal or high opsonic index. For instance, in the early stages of lobar pneumonia the pneumococcoopsonic index is low, while at the crisis it is normal or high. a case of unresolved lobar pneumonia the pneumococcoopsonic index continues to be low until the opsonogenetic cells secrete more opsonin and finally enough to overcome the remaining pneumococcal activity. If, on the other hand, the opsonic function fails to respond properly to the needs of the patient, disaster results.

In a self limited bacterial infection the microorganism which enters the body and causes the symptom complex of the disease at the same time stimulates the opsonic function to increased activity, as may be recognized by a low opsonic index gradually becoming higher; and thus the latent powers of bacterial defense are aroused, the more abundantly produced opsonin attacks the microorganism and so changes it in some way that the polymorphoneuclear leucocytes, previously passive, now promptly engulf and destroy it by phagocytosis. In the indefinitely prolonged bacterial infections the opsonic index remains low for long periods because the localized invasion is more or less walled off from freely moving blood and lymph currents, and is, therefore, imperfectly flushed out by the fluids which would otherwise carry bacteria from the interior of the lesion out into channels through which they would reach and stimulate opsonogenetic cells. In these cases which lack the internal opsonogenetic stimulus from their own localized lesions it is practicable to introduce by hypodermic methods a suitable stimulus from outside the body into the patient's subcutaneous tis-This stimulus consists of an estimated number of dead microorganisms of the same species, or, better still, of the same strain, as those responsible for the patient's infection. Pure cultures grown from microorganisms obtained from the patient's own lesions are best. These are killed by the least amount of heat which is known to be surely effectual, an amount which varies somewhat with the different microorganisms met with in localized lesions. The number of dead microorganisms is estimated for the purpose of regulating the size of the dose. Ready for inoculation the dead microorganisms are known as vaccine. In many instances when this suitable stimulus, consisting of the right amount of vaccine inoculated with proper intervals between the doses, is given to a patient who suffers with a local infection, which may have baffled all treatment for months or years, he immediately improves and is soon well.

The adjustment to the needs of the patient of the size of the dose and of the length of the intervals between the inoculations is governed by a record of the patient's opsonic index to the microorganism responsible for the infection. After proper inoculation in the case of a localized staphylococcic invasion, for instance, the patient's already low staphylococcoopsonic index will at first become still lower. Temporarily the opsonic function seems to be paralyzed, the production of opsonin apparently stops, while some of the opsonin, already a constituent of plasma and lymph, is probably used up in the bacteriophagocytic battle going on in the walls of the localized lesion. In harmony with this probability is the observation that when the same inoculation is given to a man in health the opsonic index falls little, if at all, which may be due to the battle going on in his body to draw upon the opsonic content of his plasma and lymph. After the early drop in the staphylococcoopsonic index of the properly inoculated patient the index gradually goes up to a point well above the average normal staphylococcoopsonic index. This rise in the opsonic index corresponds with the response of the opsonic function to the vaccine stimulus. From the high point the opsonic index falls again to a point below normal, but not to a level quite so low as that recorded before the patient was inoculated. somewhat higher, although still low, opsonic index is maintained for a while. If the inoculation is repeated at the best time, soon after the opsonic index begins to drop from its highest point, the result is similar to that which follows the first inoculation; but after a properly timed second inoculation the maintained higher level of the opsonic index is somewhat higher than it is after a single inoculation. Thus, by repeated inoculations of the right amounts of vaccine at proper times, the opsonic index can be raised considerably, and, pari passu, in the case instanced, the patient's resistance to staphylococci can be increased to such an extent as to enable him to overcome and get rid of the localized infection. If the initial dose of vaccine has been too large, the paralytic stage is lengthened so that the opsonic response is delayed or fails altogether. If a dose is repeated during the paralytic stage, this stage is emphasized, and again the opsonic response is delayed and may fail altogether. The excessively lowered opsonic index of the emphasized paralytic stage means a very low resistance to bacterial infection and hence probable disaster to the patient. As there are no clinical symptoms definitely characteristic of the paralytic stage, or of the period of opsonic response, the opsonic index becomes the only guide the physician has to enable him to adjust the size of the dose and the length of the intervals between the inoculations to the varying needs of different patients.

With the opsonic index as a guide quite a large number of localized infections have been investigated and successfully treated. A classified list of

these follows:

A: Those due to Staphylococcus pyogenes; I,

furunculosis, 2, pustular acne, 3, sycosis.

B: Those due to pneumococcus of Fraenkel; I, empyema, 2, cystitis, 3, suppuration of antrum, 4. corneal ulceration.

C: Those due to Bacillus coli communis; I, cystitis, 2, various local affections.

D: Those due to the gonococcus; 1, gleet, 2, gonorrhœal arthritis, 3, acute gonorrhœa.

E: Those due to Bacillus tuberculosis when the

lesions are strictly localized; I, lupus and tuberculous ulceration of the skin and subcutaneous tissues. 2. tuberculous diseases of bones and joints, 3, tuberculous cystitis, nephritis, epididymitis, peritonitis, adenitis, laryngitis, iritis, phlectenular con-

Thus far we have considered only well localized infections, in which the opsonic methods exhibit their more brilliant results. Successes, however, are recorded in the treatment of less localized or more systemic infections due to the bacillus tuberculosis, and at least one bidhaut result has been

obtained in a case believed to be septicæmic endocarditis due to a staphylococcic infection.

In cases of strictly localized tuberculous infections the tuberculoopsonic index is, as a rule, steadily low, and thus resembles the steadily low opsonic index common to other localized infections. In less strictly localized or more systemic tuberculous infections, as in pulmonary tuberculosis, for instance, the opsonic index is not steadily low. fluctuates widely from points below the normal tuberculoopsonic range to points above that range and vice versa. The fluctuations are irregular in extent and in the time of occurrence, and they are thought to be due to autoinoculations which are poorly adjusted to the needs of the patient both as to the size of the doses and the intervals between them. Autoinoculations occur when for any reason the flow of plasma and lymph to and through the affected tissues is increased to an extent to favor the washing out of bacilli from an imperfectly walled off or wallless lesion. Physical and mental efforts will increase the flow. For instance, attendance and dancing at a ball caused an autoinoculation which lowered the tuberculoopsonic index several tenths.

The plan of opsonic treatment in a more systemic tuberculous infection is, if possible, to convert the invasion into a localized infection. When this can be accomplished the case may be successfully treated as localized infections are treated. It is a general truth that the more resistence a patient has the more is his infection likely to be or to become localized. Therefore, in the case of a less localized tuberculous infection every effort is made to increase the resisting power of the host. The febrile patient with a widely fluctuating tuberculoopsonic index is given absolute rest outdoors under a sanatorium type of management and, if possible, at a sanatorium. Thereby his circulation becomes more slow and steady locally as well as generally. At the same time his metabolism improves in his opsonogenetic cells as well as elsewhere. He is given large quantities of milk which by means of its lime content increases the coagulability and viscosity of his blood, thus retarding circulation in tissues that may, under the favorable conditions now brought about, take on wall forming activity and convert the lesion into a more strictly localized infection.

Having accomplished this conversion, the tuberculoopsonic index becoming steady, there may come a time when the infection will be so strictly localized as to share with other localized bacterial lesions the benefit that may be derived from certain contributory measures which are sometimes used together with opsonic inoculations. The patient is to be safeguarded during the use of these measures, as he is safeguarded while receiving opsonic inoculations, by an opsonic index record. The measures consist of such general or local exercise as will excite a proper increase of circulation of plasma and lymph into and through the affected part, which, on the one hand, takes opsonin deeper into the walls of the lesion there to aid phagocytosis and, on the other hand, tends to wash out from the lesion small amounts of the microorganism to serve as the vaccine of autoinoculation. Bier's hyperæmia treatment is sometimes used to bring about similar results.

The irritant effects of Finsen light or x rays, for example, are in themselves frequently so successful in cases of lupus as to make opsonic treatment unnecessary; but when Finsen light or the x ray no longer benefits a case of lupus the addition of opsonic inoculations may complete a cure. In the light of opsonic methods the application of irritating iodine to the skin over tuberculous lymphatic glands becomes a rational procedure. In suitable cases, to decrease the coagulability and viscosity of the blood and still further to favor the free movement of plasma and lymph through the tissues of the affected part sodium citrate is added to the milk, to precipitate the lime content of this still desirable food, and citric acid is prescribed, to combine with and precipitate from various other ingesta such soluble lime salts as might otherwise become blood constituents.

The auxiliary measures used in cases of more strictly localized tuberculosis are also indicated in other localized infections. When a subcutaneous staphylococcic abcess has evacuated its pus, either spontaneously or after incision, no staphylococcoopsonin is found in the pus. But the lymph which afterwards pours into the abcess cavity contains, as a rule, staphylococcoopsonin. The lymph now contains more than enough opsonin to satisfy the phagocytic demands of the abcess wall through which it passes, and the surplus can be detected in the discharge from the cavity. But if the supply of opsonin is for some reason deficient and the healing process lags, a fuller flow of opsonin carrying lymph to the part may be brought about by poulticing or by washing out the cavity with slightly irritating bactericidal fluids. It is possible that laparotomy in tuberculous peritonitis is curative in a similar way. Exposure to entering air may result in enough peritoneal irritation to determine a curative flow of opsonin carrying lymph into the locally infected tissues.

Not only is the opsonic index a guide to correct methods in the treatment of infectious diseases by inoculations, but it is also a guide to the surgeon who wishes to remove by operation some local infection, as, for instance, a tuberculous gland or tuberculous granulomata in a joint. The surgeon avoids the paralytic stage, or "negative phase," of autoinoculations and chooses a time for operation in the stage of opsonic response, or the "positive phase," of an autoinoculation. Or he may by the inoculation of a suitable vaccine develop a higher opsonic index, or higher resisting power, in his patient before he operates.

The value of the opsonic index does not end here. It may prove to be an important guide in prophylactic treatment. For instance, in tuberculous families investigation may show that their members have low tuberculoopsonic indices long before they have tuberculous lesions and that prophylactic oculations may raise their opsonic indices to a point within the normal tuberculoopsonic range or, in other words, increase their resisting power to a point of safety against tuberculous infection. Further, the opsonic index is helpful in diagnosis. For example, in a suspected pulmonary case a steadily low tuberculoopsonic index, or a tuberculoopsonic index widely fluctuating from a point below the normal range to a point above the normal range and vice versa, would confirm a diagnosis of tuber-

culosis. The opsonic index has aided in distinguishing pulmonary tuberculosis from malignant diseases of the lungs, chronic bronchitis and emphysema, bronchitis, and general debility. Here might be repeated the list of diseases already mentioned as the infections that have been successfully treated by opsonic methods; for in all these the diagnosis was made, or was confirmed, by opsonic index determinations before treatment by vaccine inoculations was begun. For another and a final illustration suppose the case to be an obscure arthritis and that the determinations give a record of a steadily normal tuberculoopsonic index and a steadily low gonococcoopsonic index. The diagnosis of gonorrheal arthritis is made with accuracy and certainty.

If the apparent value of opsonic methods in diagnosis, prophylaxis, and treatment, matters still in the experimental stage, however, is eventually confirmed, if the necessary special and minute technique is found not to be too costly in time and to be clinically practical, and if the personal equation of the operator can be sufficiently eliminated, an exceptionally promising field of work has been opened up for properly trained laboratory workers and clinicians. It must be said, however, that, although the apparent accuracy and reliability of the methods of Wright and his supporters have been fascinating and captivating, subsequent workers have developed a cloud of uncertainty through which the theory, technique, and practical results of opsonic methods are now widely viewed. To what extent this cloud may be dissipated time alone will tell. At present it seems to be generally accepted, however, that as a control to treatment opsonic methods require too much time to be clinically practical, while in the field of diagnosis they are more promising.

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A CONSIDERATION OF CONSTITUTIONAL INFERIORITY.*

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The subject involved in the title of this paper considered in its broadest sense would not only require much time and space, but would need the services of an experienced sociologist, psychiatrist, philosopher, and pædagogue combined in one. Broadly speaking, a vast majority of the human race might properly be called constitutionally inferior, the normal man being very rare indeed and a standard of perfection not yet having been attained

And then again every individual who becomes the victim of any of the many forms of insanity might be called a constitutionally inferior person, and

quite properly so.

Kraepelin deals with the subject in a very thorough and exhaustive way, from the psychiatric point of view, in his classification. However, he distinctly separates the ordinary types of insanity, such as mania, dementia præcox, melancholia, etc., from other types in which he recognizes some peculiar constitutional trait present in the individ-

^{*}Read before the Ward's Island Medical Society, Mir

ual constantly. These types of mental disorder he classifies as follows:

I, The psychogenic neuroses; a, hysterical psychoses; b, apprehensive neuroses; c, expectation neu-

2, Original traits; a, neurasthenia; b, constitutional pessimism; c, constitutional irritability; d, compulsive insanity; e, erethromania; f, impulsiveness, e. g., Wanderlust, Homicidal mania; g, sexual anomalies.

3, Psychogenic personality; a, congenital criminality or moral insanity; b, insanity of the emotions; c, dipsomania; d, habitual criminality; e, morbid lying, morbid faking; f, querulousness (habitual doubting).

4, Arrested mental development; a, idiocy; b, im-

becility.

You will see that this is a very comprehensive classification, but none the less an essentially correct one.

In this broad grouping we might also place the backward school children, who have recently been attracting more consideration, with happy results.

Other specimens of inferior humanity are familiar to us in the habitual truant, the vagrant, the hobo, the tramp, the "jack-of-all-trades," the street

tough and his gang.

So much for a general classification. Before going further it should be stated that the author of this paper has no intention of considering the lowest types of constitutional inferiority, namely, the idiots and imbeciles. The cases studied do not resemble either of these in any way, and therefore it will be unnecessary to make a distinctive diagnosis. The cases considered in this paper are types of individuals whom we can immediately place for convenience between the imbecile class and the dementia præcox group.

In the types of insanity mentioned above under Kraepelin's classification there is the possibility that after a prolonged study of individual cases, many would be found to be symptomatic complexes, of a certain stage in a deteriorating process, such as dementia, and not in themselves disease entities.

Is this true of all such cases?

Are these symptom complexes only transient episodes in "psychopathic," "constitutionally inferior," or "unstable" individuals (by whatever name we choose to call them), or are they definite steps in a deteriorating process? Herein lies the chief import of our study, because here our prognosis is involved, and correct treatment depends upon a correct prognosis. Are there any features presented by such cases whereby they may be distinguished from a præcocious dementia? It is upon this phase of the subject that discussion is requested. Kraepelin has suggested that if a thorough examination of the individual's entire history could be made we would find elements of early inferiority in all cases of dementia præcox, and Dr. Jelliffe has recently written a suggestive paper along the same lines in which he considers the "predementia" characteristics of dementia pracos, and shows that many of the traits found in patients whom it is customary to classify as "constitutionally inferior" are peculiar to thole in whom frequently a deteriorating psycho-1 develops

In order to arrive at any very accurate and valuable conclusions on this subject one should be in a position to analyze a large number of patients from the first inception of any abnormality until the natural death of the individual. Unfortunately it is very difficult to obtain so complete an analysis from most of the patients in this institution. Therefore we will have to be content with a brief consideration of a few cases (six in number), which have been classified as constitutional inferiority, after the patients had been observed for about three months in the hospital and either remained under observation or from whom recent information had been obtained of their condition since discharge. It would be manifestly of no value to attempt to draw any final conclusions from case records of patients who have completely passed out of our sight after only a brief residence here brought about by a transient episode causing their committal. Indeed, in looking over several such histories one finds that the patient has in some instances been again committed to other institutions and a diagnosis of dementia præcox made. I have therefore selected only a few cases in which the diagnosis is clear, having discarded many in which other elements appeared to

Before taking up individual cases it may be well to consider in general the nature of the inferior elements and the fields of human culture which are affected. Different parts of the complex human organism will be found involved in different individuals, but the basic elements appear to be the same in all. These elements are: I, In the first place the Defects of heredity; and, 2, secondary to this, or even aside from hereditary influence, Environmental defects, causing reversions to primitive types either nearby or far removed from the normal, the degree depending upon either one of the before mentioned influences or upon both together.

In the words of Groszmann, "these elements represent to this day mental, moral, and social instincts and activities on the savage, barbarian, or generally uncivilized level. They have been unassimilated by the civilization about them, they are representatives of primordial culture, of the beginnings of human society in all their crudeness. They do not fit into modern conceptions, and cannot be understood unless we apply a historic standard."

Of the two factors which constitute the ætiology of these elementary disturbances it is difficult to determine which is the more important. thought, the term constitutional inferiority would seem to imply of necessity an inherent defect to begin with. But this need not always be an inheritance of specific defects directly and in their entirety from parent to child. The human race as it exists to-day has inherited various imperfections of a lower order of creation from which it has evolved. We all have tendencies to animalism. What one of us has not felt at some time in his life the impulse or at least the capacity to commit all sorts of crimes against our neighbors or ourselves? and what has hindered these retrograde tendencies but the discipline of environment, involving as it does our fear of punishment and the desire for the respect of our neighbors? Under certain circumstances human beings tend to revert to a lower grade of moral, intellectual, and physical culture, just as domesticated plants and animals revert to wildness under the

proper environment.

It is this aspect of the ætiology which gives us hope for the prophylactic and curative treatment of such conditions as we are now concerned with. While heredity is a strong factor, environment should also be given an important place in the ætiology of constitutional inferiority.

For example, take the case of any city child whose parents are so busy earning their bread that they can give the child little or no instruction in morality and no supervision whatever. quently the child is running in the streets when not in school, and the corrective influences of the school is reduced to a very small proportion, because the child is placed on a "part time" class schedule, thus being allowed to roam the street half of the day, associating with all sorts of people, acquiring lawless habits which lead him to petty crime, later to more serious misdemeanors—then follows juvenile asylum -and after that the bad habits may have become so strong that the career of an habitual criminal is firmly established. Would you say that heredity is the chief cause of the trouble?

Just as in physical diseases we have both predisposing and exciting causes so we have in mental disorders. Those who are predisposed to tuberculosis by heredity do not always become infected with tuberculosis, there must be also the exciting cause and the unhygienic surroundings, in other words,

the tuberculous environment.

Inferior moral, intellectual, or physical qualities may be acquired as well as inherited, so also may their opposites be attained. The fact that they are only acquired does not make them any the less constitutional. Character, good or bad, is largely the result of habitual reactions to environment, not altogether an inherent thing, although it must be admitted that the type of reaction depends to some extent upon the inherent traits. To determine which is the more important factor offers a fruitful field for speculation and experiment.

We may safely summarize the ætiological element by saying that they are exaggerations of normal, universally constitutional tendencies, becoming manifest in certain individuals because of their lack of inhibition, this lack being due both to unfavorable environment and to hereditary defect.

Of the cases under consideration all are those of women, and in them, as would be expected, the animalistic reversions are not as pronounced as in men. On the other hand, we find the psychopathic elements more refined and complex because of the special environmental influences to which those of the fair sex are subjected. Furthermore, according to the inherited or acquired traits peculiar to each individual will the type of inferiority be manifested, so that either the moral, intellectual, or emotional field may be chiefly involved.

The cases selected illustrate some of these different types, there being representatives of the lowest grade in which the emotional field is chiefly involved and of the higher grade involving a restrict-

ed portion of the intellectual field.

Consideration of Six Patients.

Of the influence of heredity our information is meagre and not altogether reliable. It should be remembered that hereditary influences may be more distant than inquiry has been able to ascertain. Abnormal traits are known to skip one or several generations to appear later in another. However, we find hereditary taint in some form, either of actual insanity, alcoholism, or neurotic constitution in five of the six patients.

Of the influence of environment our information

is more significant.

In one case the mother of the patient died during the latter's infancy, an epileptic stepmother and a "weak minded" father reared the child without any discipline whatsoever in a home lacking comfort, peace, or moral influence either by precept or example; public educational advantages were also denied, and physical handicap was another factor in producing a constitution marked by absence of moral or intellectual strength. A second patient had a home life very similar to that just described, cruelty and neglect leading the patient to involuntary prostitution at the age of fourteen years, this becoming later a voluntary method of existence for several years. Later on this patient was rescued from her associations by reason of her commitment to this hospital, and on her discharge obtained a decent position in which she is now doing well. Another patient had all the advantages of a refined home, with a good education; she inherited an impulsive neurotic nature, which manifested itself by an elopement with an unworthy lover after three days' courtship; the match proved disastrous in that she was infected with syphilis, and, leaving her husband, she has since led a wayward life. fourth patient had a good home in most respects. but lost her mother at an early age, could not agree with a stepmother, and left her home soon after puberty to shift for herself. In another case the patient suffered from a lack of proper parental discipline, and eloped at the age of seventeen with a married man, who refused to marry her in the legal way even after divorcing his first wife. The sixth patient was an invalid from birth on account of a spastic paraplegia, and was therefore influenced by a narrow, self centered mode of living, having little to interest herself in, with every whim pampered. A hypochondriacal type of psychosis with obsessions developed.

Time of onset of the earliest noticeable abnormality.—This is found to have occurred before puberty in four patients, and just at puberty in two. In all the patients studied there were, as would be expected, aggravations of previously existing traits at puberty. Many eminent authors have laid special stress upon this period of development in relation to insanity and to the formation of constitutional habits—the formation of character. Down (Montal Affections of Childhood and Youth) says "as puberty approaches attacks of mental aberrations assume a special character, . . . especially if there is any sexual deviation." To quote Stanley Hall, "destructive energies are now vented, there is a passion for creating trouble by mischief, great eleverness in concealing faults by lies, no natural

affection, and no conscience, yet even these cases after the troublous period of transition has passed often settle down to respectable and fairly decent Fuchs in his work, Schwachsinnige Kinder, says, "while the stage of puberty is revolutionary for normal persons it is still more so for defectives; idiots animalize, imbeciles become violent, egoistic, coarse, and vulgar, and the weakminded grow unsettled in their normal feelings and are without resistance to sensations that now erupt within them." Again, Stanley Hall says: "Many children thought normal before are first found wanting at this period. They are neither silly nor half-witted, but can no longer fully profit by school; their educability ceases, they begin to suffer from the provocations of those more intelligent than themselves, and become dead weights in their classes because their period of docility is ended. . . . The momentum of heredity is often insufficient to enable the child to achieve the great revolution of puberty. . . . There is not only arrest, but perversion to a darker remoter stage to which the child harks back." (Adolescence, 1905.)

Such being true, it is not surprising to find that in some of our cases the individual was considered a normal child until about the age of puberty, and this does not rule out our diagnosis by any means.

Mode of onset.—It is noticeable that in the patients under consideration the onset of the episodes has been sudden and characterized by an aggravation of previously existing abnormal traits as an expression of a reaction to some definite external stimulus. These reactions do not always constitute a psychosis sufficient in duration or intensity to require commitment to an institution, and are often transitory, episodes quickly recovered from and leaving the patient in as good a condition as previously. In contradistinction to this mode of onset and type of reaction, how different is the mechanism of dementia præcox, in which we find a gradual onset of a disintegrating process often recurring amid a favorable environment, often unrelated to any specific external cause, but rather to some autopsychic difficulty or source of irritation and disassociation; and, furthermore, a progressively downward course without complete recovery to the previous standard of efficiency.

In all but one of our patients there is a history of sudden episodes, of impulsive conduct caused by some real external circumstances such as a fright, a disappointment, a quarrel, seduction. In the one patient in whom such a history is absent there are definite symptoms of psychasthenia with fixed ideas of a somatopsychic nature; although inferior traits of another kind were present in this patient in early years, the psychasthenia symptoms did not appear until the patient was about thirty years of age. This suggests that in psychasthenia we have a more definite disease entity, a more clear cut condition.

Symptomatology.—The symptoms presented by these patients taken together as a group may be summed up in four divisions: I. Abnormal selfishness; 2, abnormal irritability; 3, abnormal suggestibility; and, 4, abnormal mental fatigue.

In such patients abnormal selfishness is manifested by cruelty and unscrupulous conduct when the personal interests may so be favored; lack of natural affection and affection unnaturally directed; general disrespect for any authority. These traits are prominent in the habitual criminal.

. Abnormal irritability gives rise to impulsive acts,

violent episodes, and unstable emotions.

Abnormal suggestibility is a prominent factor in the cases presenting fixed ideas and phobias, in psychasthenia, in those having hysterical symptoms, in those subject to hallucinations (one patient had an episode of depressive hallucinations). Such a condition causes the individual to be easily frightened, easily excited, and also gives rise to morbid lying. Abnormal mental fatigue is manifested by a lack of steady application to any task requiring thought, an inefficiency for commonplace occupations requiring any degree of concentration or responsibility, and is early seen in the defective school child, in the vagabond, the habitual idler and rover: later on in life such people are found to be still unsettled in any permanent occupation and are unable to hold any position for long. They are also unable to reason things out for themselves, and are apt to take the quickest and easiest method of forming an opinion, namely, that method which is first suggested by their emotions. Two of our patients illustrate these defects very well; in both of them, however, there is the handicap of physical inferiority. In none of our patients considered is there a marked absence of intellectual power such as is found in the imbecile class. On the contrary, in three of these patients there is a precocity of intellect having a wide range of interests, but all showing a lack of concentrative and applicative power. In none of them has there been at any time any impairment of orientation or memory, or grasp on previously acquired knowledge, unless we except one case, where there was a transient hallucinosis and condition of fright leading to misinterpretations. Incoherence in expression of thought was absent in all.

Course and duration.—As to the course of the condition while under observation; in all but two cases the patients recovered quickly from the episodes which required their committal. The two patients in whom the psychosis was protracted showed symptoms of psychasthenic insanity with more or less fixed ideas. In one of these two the condition was much improved by persistent argument, for she was an intelligent person with excellent insight, but she has now again relapsed after an emotional upset due to natural causes. In both of these patients having a chronic course relapses have been frequent both in and out of the hospital, but temporary recovery has always been complete, so far as relief from their morbid ideas with insight is concerned. In some patients aggravations in the form of fresh episodes have occurred in the hospital, and have always been due to some tangible external cause, e. g., a refusal of discharge, a morbid suggestion from a fellow patient.

In all the patients the emotional reactions have been consistent with the thought content through-In all of them there has been manifested a certain amount of insight into their condition as soon as the acuteness of the episode has subsided, and later on the majority of these patients have acquired insight of a marked degree.

Recovery to the previous standard has occurred in four of the six patients. In the remaining two

obsessions and fixed phobias are present, and in them the prognosis remains doubtful, especially as they are now in the involution period. However, we may say that in the majority of cases the prognosis is good when the patients are placed under a proper environment. (It is questionable if an insane asylum is the ideal environment.)

The distinctive diagnosis.—As to the distinctive diagnosis it will be found most often necessary to distinguish these cases from dementia præcox. This is usually difficult upon the initial examination, and several months of observation are necessary before a satisfactory diagnosis can be made, and even then in some cases we may still be left in doubt.

From a study of the cases selected the most helpful distinguishing points so far developed may be

enumerated as follows:

I, A reaction to some definite cause, usually allopsychic, this reaction being somewhat similar to the normal, but different in that it is an abnormally exaggerated type of reaction such as would not occur in a well balanced individual; i. e., a reaction to environment, not an autopsychic disintegration of

2, Frequent occurrence of such reactions which subside with removal of the exciting cause and leave the patient unchanged from the usual stand-

ard; i. e., absence of deterioration.

3, A history of abnormalities of condition from an early age, the individual never having been considered quite normal. This is contrary to the usual history of dementia præcox.

4, No loss or impairment of that part of the intellect having to do with memory, orientation, and application of previously acquired general knowledge.

5, No marked affection of the sensorium.

6, No marked incoherence or blocking of thought or dreamlike condition accompanied by fantastic delusions or disassociations of personality, such as manifested in katatonia and other forms of dementia.

From idiocy and the low grade or average type of imbecile it seems unnecessary to take up much time in making a distinctive diagnosis. The cases selected do not correspond with our present conceptions of imbecility in any marked respects. The inferiority in the cases under discussion is not a general inferiority, but is more or less localized in one sphere of the individual's constitution and is manifested differently in each case.

Before closing I would like to read briefly a synopsis of the history of one patient who seems most typical of the conditions we are studying, and

then say a few words as to treatment.

ELSA A. Was admitted May 29, 1907. Family history: Father, normal; mother, a consumptive; paternal grandfather, intemperate and of very violent tem-per; a sister hysterical, often threatened suicide. Present history: Patient was considered a normal child

until about the age of fourteen, when she became irritable and was so insubordinate at school that she was expelled Then she obtained work in a factory, but was dicharged soon because of impudence to the foreman. Later she took up domestic service, but has never held one position for long. At the age of seventeen she was told to leave her house and never return, after having quarreled with her father. She never got on well with him or with her sisters. Her mother died in 1905 while she was living away from home. In her habits she had been abstinent both as to alcohol and sexual indulgence. She twice attempted suicide with poison. The remainder of her history is obtained from the patient. She told us that for several years she had found it difficult to get on with people, that people never had treated her with enough consideration, that their kindness had only been superficial and had failed her when she most needed it. This hypercritical attitude of mind toward things in general had been a prominent and constant feature. When these feelings dominated her she said she felt capable of letting loose her resentment in violence, had difficulty in restraining herself, and in short felt as if she were "a devil." At times her insight was very keen and she then realized that she was defective in her judgment, but never entirely overcame the feeling that the world had used her badly and that she might have been different if her surroundings had been otherwise.

The following circumstances led to her commitment:

For a few weeks previous she had become rather careless as to the future and had been going to the theater with chance male acquaintances, picked up on the street, but had committed no other impropriety. Later at a religious had committed no other impropriety. meeting she became excited because of having discussed the subject of the evening with the preacher so vigorously as to put religion in a bad light. The same evening she was followed while under this excitement by some young men of the street, also pursued so long that she became very frightened, ran to a police station, and there acted so peculiarly (begged to be killed) that she was transferred to Bellevue. There she was quiet and indifferent, said she wished someone would kill her. Her excitement soon subsided, and on admission to this hospital she was quiet and agreeable, talking freely of her past life in a rational manner, showing no delusional formation or incoherence. No defect of memory or orientation or grasp on general knowledge. Her insight at this time was excellent; she realized that she had behaved abnormally and explained her behavior sensibly. Physical examination showed nothing abnormal. Her conduct remained normal for about two weeks, when she began to fret at her detention, saying that no matter how well behaved she wasn't allowed to that no matter how well behaved she wasn't allowed to go out. Then suddenly one morning she refused to work, threw herself on the floor, became mute and resistive for several hours; later told a nurse that she would show us how she could make things go, and "what trouble really was," that there was no use of working here because they only kept her the longer. The same day she became violently angry, screamed and kicked and required much restraint. The next day she was quiet and spoke regretfully of her behavior. Three days later another similar episode of anere with malicious profane talk and requests to be given ger, with malicious, profane talk and requests to be given poison. She said she would never be let out and therefore wanted to die, was not crazy but had a bad temper and wanted to die, was not crazy but had a bad temper and people didn't understand her. Her excitements were always followed by remorseful depressions. After some weeks of normal conduct she was discharged in care of "after care" agent, and a position obtained for her in the Shakers' Colony at Lebanon. She remained there about two weeks and then returned to her stepmother, leaving because she found no means of amusement there.

After returning from Lebanon she was depressed. A position at Poughkeepsie State Hospital as waitress was obtained for her, but she had difficulty in getting along with the other girls and left because, as she said, they treated her meanly and "thought themselves above her." Then a position at general housework was obtained for her. The night before going to this place and while her stepmother was urging her to get her clothes washed and other things ready, she suddenly screamed and angrily declared that she did not want to work there. She quieted down, however, and not want to work there. She quieted down, however, and went to the place, remaining there only half a day, because she thought the mistress imposed upon her. Then another place was obtained for her, in a very congenial family. She got on well and was liked until the family began to make preparations for moving, when she because of the necessary increase of work, and she had to be disnigged.

she had to be dismissed.

she had to be dismissed.

She was at home for a week thereafter, during which time she was restless, said the devil must be in her—spoke much of the ill treament of the poor by the rich, as indeed she had often done before. She would suddenly run out of the house and down the road to a nearby brook with thin clothing on to bathe her feverish face and hands. Under medication she quieted down, and another place was found for her. This place she found very pleasant. Her employers treated her unusually well, she liked them at

once and became unusually elated in consequence. Went much to religious meetings at this time and went back one night to the church where she had once before created a disturbance, and there denounced the pastor and his congregation as hypocrites, saying that they did not practise anything they preached, etc. She went home the same evening much excited, but was quieted by her father and promised not to act so again. A few days later, she was again noticed to be restless and elated, and went to a salvation army meeting, telling her mother beforehand that she was going to join this society, because she felt she would be a great preacher.

While in this meeting she created so much disturbance that the police were summoned. They took her to Harlem Hospital and made preparation to transfer her to Bellevue Hospital the same evening. While she was in the ward she took advantage of the nurse's absence for a moment to seize a bottle of carbolic acid from a medicine closet and drank its entire contents. Before her death she had a few conscious moments, during which she said she had acted on

impulse only.

Treatment — In regard to treatment I have only a few words to say in general. It is easy enough to say that since we know the ætiology of those conditions, namely, bad heredity and bad environment, let us remove the causes. With the factor of heredity, which, after all, is most probably the prime factor, not only theoretically, but literally, we as physicians, as institutional workers, can have little to do.

But it does seem that the other factor in causation of constitutional inferiority should concern us

very much.

How many times in this institution we come in contact with cases in which we feel that the patient does not really belong here, that it is a great pity for them to be here, and yet it would be a greater pity to send them out into the world—into the environment from which we have received them.

Therefore I believe that there should be a special kind of institution adapted to these cases; an institution on a small enough scale as to size, so that individual treatment may be given for individual needs, so that individual capabilities for one or another kind of work may be developed. In such an institution the physician would be of less use than the instructors in manual training, physical culture, or ethics, and would be simply a consultant. such an institution severe reformatory discipline would be employed in some cases, in other cases kindly correction and instruction through constant personal contact would be used. In no case would the patient be treated only collectively, only in the mass, but instead, particular attention to particular needs would be the rule. By such methods we would prevent that distressing and deplorable condition so often occurring in institutions, namely, deterioration in interest, in habit, and in initiative, facts which are due to treating people in classes, as machines instead of as individuals.

There is nothing so helpful to those having retrograde tendencies as stimulating their interest in some special sort of employment for which they show a liking or capability and giving them the opportunity of exercising that interest. In the type of person we are considering this is not an impossibility. The chances of good results by such methods would be especially favorable when the treatment had been instituted during the years of adolescence, for this is the plastic period. After a period of institutional training the individual could

be safely placed out in the world again, providing a proper home life or surroundings suitable in other

respects were secured.

Such treatment is prophylactic as well as curative when the individual is placed under control during adolescence. The ideal institution would take the place of a good home training in the most thorough sense of that term, which is what most patients of this type are denied, and a good home life during the plastic years will wipe out many of the defects of heredity, if not all of them.

SOFT TISSUE ROENTGENOGRAPHY.*

By Henry Hulst, A. M., M. D., Grand Rapids, Mich.

Soft rays, an exposure long enough to insure a "well done" plate, the tube adequately shielded, a small calibre diaphragm compressing and holding rigidly immovable the object, a rather slow plate of maximum latitude, together with a clear working contrasty developer—such are the elements of the technique of the röntgenography of hard tissues.

As a result, good bone pictures are now so much the rule as to excite little interest beyond that of

their clinical value.

The density differences of soft tissues being very much less, their röntgenography is proportionately more difficult. But the well known inferiority of soft tissue röntgenographs and the scarcity of good ones is not entirely accounted for by this inherent difficulty alone. Another cause and a less insuperable is external to the object and lies with the operator himself.

"Not by shortening the time of exposure, but by selecting less penetrating rays and stronger currents the röntgenography of the future will secure its better results"—such is the gist of Holzknecht's recent prophecy. It is nothing but the technique outlined above and designated there as hard tissue röntgenography. Stechow's "better expose too long than not long enough" is to be taken in the same sense as Holzknecht's dictum, and is likewise intended as a universal method. Though Albers-Schönberg holds contrariwise that "over exposure is the most common error," he, too, favors as a general rule "a thoroughly done picture with a rather long exposure."

The purpose of this paper is to point out the inadequacy of such a technique and the necessity of modifying it to suit the requirements of the tissues

themselves.

To obtain a structure picture of the bones of the body we may within certain limits compensate for increased softness of tube by the use of stronger currents or longer exposure or both. But for the risk of burning the patient much softer tubes might advantageously be employed in this kind of work than are ever made use of now. For it is not easy to lose a bone by too long an exposure or too strong a current if only the tube is soft enough. But as soft rays reduce more silver than those that are more penetrating, long before the bones are done the soft tissues may have been rayed into utter dark-

^{*}Read before the Fourth International Congress on Medical Elect.ology and Radiology, held in Amsterdam, September 1 to 5, 1908.

ness—the softer the tube and the stronger the current or the longer the exposure the greater will be the damage done to the soft tissue part of the picture. To reproduce the soft tissues and even such comparatively hard tissues as the heart, stomach, and colon containing bismuth, calcified glands, or dense calculi, the tube must not be too soft.

The routine employment of the softest possible tubes on all occasions and for all purposes within the limit of safety to the patient, as Holzknecht recommends, is a temptation not easy to escape. This is the way to make brilliant pictures, and brilliant pictures are always striking at first. The uninitiated will instantly prefer them to those made with a somewhat harder tube. But brilliancy, contrast in a röntgenograph is what emphasis is to wealth of meaning in rhetoric. The brilliant contrasty picture made with the softest possible tube is exceedingly emphatic; but examine the soft tissues and no "meaning" is there. The pictures are brilliant be-cause the soft tissues are black, they are emphatic because they have no meaning, as soft tissue pictures they are bad because the tubé was too soft and the exposure too long. Contrast, emphasis, though more striking at first than detail and meaning, in röntgenography as well as in other modes of reproduction and expression, represent the earlier stage of their evolution. The first period of röntgenography, the period of screaming contrasts, passes over into that of detail in soft tissues. The indiscriminate use of the softest possible tube is now regarded as a bad habit. Röntgenography, instead of getting into a rut and thus retarding progress, by adopting a one horse rule becomes a flexible method, röntgenography, of hard tissues naturally leads to that of soft tissues as well.

But more than this is needed. To röntgenograph the apices by means of a one minute exposure, the patient breathing all the while, violates another not less important principle. Nor is it made good by the use of an imposing compression diaphragm. The object must be at rest if possible. In the case of lungs, kidneys, and other abdominal organs this requires at least cessation of respiratory movements during the exposure. The heart is never entirely at rest. The respiratory movements of the heart, however, are the most disturbing and should always be eliminated. This does not require the exposure to be made very short. And if the necessity of the object being at rest constitutes the only as well as the most obvious reason for shortening the time of exposure the difficulty is not great. In that case Levy-Dorn's two seconds for lungs are probably short enough and his six seconds for hips, which d not breathe, might well be sixty.

I believe, however, that there are other less obvious reasons for shortening the time of exposure in soft tissue röntgenography. The following observation, made *en passant* by Albers-Schönberg, indicates, though unintentionally and unwittingly, the advantage of the shortest possible exposure. It reads simply like this: "The underexposed plate shows remarkably clear detail." Indeed, not until the hard tissue röntgenographer begins to look for soft tissue details does he learn to forget the bones. Until then, ideal soft tissue pictures must look to him like under exposures. Levy-Dorn asserts that he was

the first to demonstrate a picture of the chest taken during suspended respiration in October, 1897. But this was only to avoid disturbance of motion. Genuinely short exposures were first described, I believe, by Dr. Rosenthal in 1890.

In 1901 such pictures were published in a work to which I refer with gratitude as epoch making in the history of soft tissue röntgenography: Dié Röntgographie in der inneren Medizin, by Professor H. H. Ziemssen and Professor H. Rieder. The first pictures of the lungs and heart made in America by one second and shorter exposures without the use of intensifying screens were demonstrated by myself at the meeting of the American Röntgen Ray Society, held in Chicago in 1902.

Intensifying screens do shorten the time of exposure. But the purpose of the short exposure being to secure detail not otherwise obtainable and intensifying screens being contrast makers, that is, detail destroyers, their employment in soft tissue röntgenography mistakes the means for the end. In röntgenography of the heart, in which we care for detail less and for contrast more, they are useful makeshifts; and the usually "oversensitive sigma plate" may be sandwiched between two screens and not be fogged as usual, provided the plate is sufficiently far from the target.

In Europe, as well as in America, I find it is quite commonly supposed that extraordinary apparatus is needed for making very short exposures. Yet, my first one second and shorter lung pictures were made with my old fashioned 18 inch (45 cm.) coil designed to be operated with a hammer break, but run on an extemporized Wehnelt interrupter. After six years of experience with this method I am more than ever convinced that any good 16 inch (40 cm.) coil and some of considerably shorter spark length. if properly interrupted and adjusted, can be utilized to cut down the time of exposure of an ordinary lung at 20 inches (50 cm.) to one second and less without recourse to intensifying screens.

But coils are not the best kind of instruments. I have a coil that can be made to give a heavy 38 inch (95 cm.) flame which permits the exposure to be shortened to a single flash. But the high tension. high amperage current thus passed through the tube quickly bores a hole in the target of any tube. For this reason alone, if there were no others. I prefer a machine I have had constructed especially for very heavy work. The picture of it on the screen shows that it is a static machine. It is of the Töpfler-Holtz variety, but perpendicular instead of horizontal. The rotating plates are made of shellac and mica, which have been tested to 7,000 revolutions per minute. You can count fifty such, 28 inches (70 cm.) in diameter. The fifty stationary plates. split through the centre, are of glass and measure 32 inches (80 cm.) in diameter. The hexagonal cabinet is strongly built, and supports on top the 5 horse power motor coupled direct to the shaft. The combs and brushes are gold plated. The electrical current furnished by this apparatus differs from any ever seen before. Through a Walter six tube it registers about 12 milliampères on a Snook meter. the plates revolving 1,800 times a minute.

The full discharge passed from a positive point to a negative disc measures about 16 inches (40 cm.)

in length and is a noisy torrent of white sparks. But when the disc is made positive and the point negative an interesting change occurs. A noiseless flame curls with a sweep backward and upward toward the negative point. This flame, unlike those seen from less powerful static machines, is not purplish in color, but yellow, like that from a powerful coil.

Two seconds is enough for a renal calculus in a heavy person. For a picture of suspected phthisis I merely flash the tube. On a sigma plate sandwiched between two tungstate screens the heart is teleröntgenographed at ten feet (three metres) without fogging in one second. The stomach and colon can be done in one second (without screens), but as the bismuth mixture used places this work under the category of *hard* tissue röntgenography, I prefer to use a tube called very soft by Albers-Schönberg and to lengthen the exposure to five seconds after expiration.

Examination of the tube energized in this manner reveals the remarkable fact that there is no strain. A delicate water cooled Müller run for thirty seconds (six times the maximum exposure needed for anything) showed an unspotted target. This cannot be done with a coil, nor with a low tension high ampèrage transformer such as have recently appeared; in fact, I know of no other instrument in existence with which this can be done.

The extremely short exposures which suffice for the work requiring the greatest current, and the perfect ease with which a fine delicate tube transforms such a current into Röntgen rays, proves, all other things being equal, the vast superiority of a really adequate static current in Röntgenology over all others hitherto employed.

SEVERE IVY POISONING.

By Ralph Francis Ward, M. D., New York.

Those pathological changes in the skin of susceptible individuals from poisoning by ivy (Rhus toxicodendron), poison oak (Rhus diversiloba), or the poison sumach, are known as dermatitis venenata.

Individual susceptibility or immunity plays the decisive rôle in this condition more strikingly than in almost any other. As a rule, dark complexioned individuals are slightly less susceptible than blonds, although this is not to be relied upon. Some individuals are absolutely immune to the poison, and can work in and handle the poison ivy, and can crush and rub the leaves and berries upon the face and body, without experiencing the slightest symptom of cutaneous irritation. Others can expose themselves by handling and otherwise coming into contact with poison ivy and will experience a moderate itching at the site of a fresh scratch or other fresh solution of epidermal continuity. Still others, slightly more susceptible, will have an erythematous welt or a papule representing the exact contact with the vine, which, after itching and burning for a few days, will gradually disappear, without having extended or being carried to any other part of the body. Those who are slightly susceptible, as those described before, rarely present themselves to us for

treatment. I shall describe only the acutely sus-

ceptible.

Of these some are so sensitive that, being near where poison ivy is being cut, or burned, or having the wind blow over the vines onto the individual, will excite a severe attack. This is, however, rare, as an actual contact with the vine is usually necessary. Cases have been reported to me where gloves and shoes worn in the country and handled by others after their return have produced an attack. Rainy and hot, humid days are more favorable for producing poisoning than dry hot or cold days. Free perspiration or a wet skin aids inoculation. Toxicodendric acid is the actiological factor, which

is no doubt combined with volatile oils.

The most common portions of the body affected are the extensor surfaces of the hands and forearms, the face, and the legs, although any part of the body except the soles of the feet may be affected. One patient of mine was affected from the hair line of the scalp to the soles of the feet. Upon the palms of the hands were vesicles beneath the thick epidermis as large as hazel nuts. From hands that have come in contact with the leaves, stems, or berries, all of which are poisonous, it is often carried to the penis and scrotum, or the breasts of the female. I have seen the penis enormously and greatly distorted, and the scrotum attain the size of a large double hydrocele. These parts react more actively than the exposed parts, and because of the great amount of loose areolar tissue, makes extensive ædema possible.

The pathological process is a true dermatitis, the entire derma being the seat of a severe inflammation, and characterized by heat, swelling, and redness. There is at first an erythema, with some thickening of the skin, which appears a few hours after contact. Upon this base papules form, which rapidly fill with serum, while the skin below is becoming more cedematous. The vesicles may remain discrete, but usually become confluent, and rupturing, leave great, oozing, raw areas. By this time the skin has become so cedematous that affected arms or legs will be twice their normal size, and if the head and face are involved, the features may become as unrecognizable as in severe facial erysipelas, the cedema making the head and face round, and completely closing the

yes.

From the beginning itching, tingling, and burning are constant, and if scratching is indulged in, will lead to tearing of the skin and anguish almost crazing the patient. Night has its terrors unless

proper treatment is established early.

The course of the disease depends upon the extent of surface involved and upon the treatment followed. In general, in robust patients, after taking from twenty-four to forty-eight hours to reach its height, it will begin to subside in two or three days more, at which time the weeping rapidly subsides, the edema goes down, and the fiery red becomes a dark purple, resembling in the legs an old healed varicose eczema. The parts assume their normal proportions in three or four days after the weeping has stopped. Desquamation begins and continues until all the affected parts have shed their epidermis at least twice. It may peel off in strips, or be shed in scales, or a branny desquamation may appear.

Constitutional disturbances are not great, consisting of nausea and vomiting at the height of the oozing, and slight afternoon and evening rise of temperature, not often exceeding 101° F.

bowels are constipated.

The diagnosis is not difficult if one has seen typical severe cases. When the face alone is the seat of the inflammation it has to be distinguished from facial erysipelas, which extends peripherally with a red, raised edge, and is accompanied with grave constitutional disturbances. If some other part of the body, as the arms, are affected, and the patient has been in the country, the diagnosis is unmistakable. From eczema it is easily distin-guished because of its rapid development, great accompanying ædema, and vesicle formation.

The abortive treatment consists in the application of lactic acid, one per cent., in ethyl alcohol, ninetyfive per cent., to the exposed parts just as soon as there is any tingling or reddening. It is evident that this cannot often be employed, but it is of great value in preventing the inflammation in secondary areas. This is used also by those who have suffered and wish to be armed against and able to begin successful treatment of a possible new inoculation.

It has often been stated to me that those who have had a severe poisoning are thereby rendered more susceptible. I have not found this to be the case. The fact is that those who have had a severe poisoning are always careful of any itching of the skin

and treat it as a possible poisoning.

The treatment consists in putting the patient in bed and giving calomel in divided doses, followed by a reliable saline. This is of the utmost importance in relieving the system of all possible intestinal toxines. As constipation usually exists while the patient is in bed, simple salines should often be used. Large draughts of cool water should be given to keep the kidneys well flushed out, as additional work is thrown upon them in proportion to the extent of skin involved. If the abortive treat-·ment has failed, which it will unless inaugurated very early, or if the patient is not seen until vesicles begin to form, a lotion of the saturated solution of aluminum acetate applied to the affected area upon very loose gauze dressings and kept well wet with the solution, has, in my hands, been more efficacious and comforting to the patient than those mentioned below, which are commonly used. New dressings have to be applied at least three times daily, on account of the excessive weeping. Under no circumstances do I substitute ointments at night during this stage. The wet dressings are continued day and night until weeping stops. Solutions of phenol, two to four per cent.; sodium bicarbonate, sodium sulphite, lead acetate, lead and opium wash, or black wash may be used if aluminum acetate is not at hand. When the weeping subsides the wet dressings are discontinued and an ointment of ichthyol, ten per cent., in petrolatum, is applied. I have found this the best ointment to use.

While the patient is in bed I give two to five drops of the tincture of cypripedium every three hours. After the acute symptoms have disappeared I give the same dose three times a day, after meals, continuing thus for two weeks. This aids the kidneys and stimulates healthful repair of the skin, and very markedly lessens the tendency to post inflam-

matory itching and burning.

Under no circumstances are the surfaces rubbed or the vesicles evacuated. I have seen slight rubbing during dressings set up violent burning and intolerable itching, requiring a hypodermic injection of morphine. When sleep is disturbed because of peripheral irritation I give codeine sulphate, gr. ss, at bed time, and repeat during the night if neces-

The diet should consist of milk and vichy or some other carbonated water, equal parts, alternated with simple, salt seasoned broths, and a few light vegetables. For two weeks after the local manifestations have disappeared I keep the patient on a strictly vegetable diet. Experience has taught me that meat given before this may cause a disagreeable return of cutaneous irritation, which often is most manifest when the air strikes the skin upon removing the clothing before retiring, and may not subside enough to permit a good night's sleep.

Sequelæ are often wanting entirely, but occasionally eczema or furunculosis may supervene. It is therefore wise to give a hæmatonic consisting of some form of iron, arsenic, and strychnine, beginning as soon as the patient is up and around.

205 WEST ONE HUNDRED AND FIRST STREET.

Our Renders' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXI.—How do you treat chrone : and Closed

LXXXI.—How do you treat chrome rema? (Closed December 15, 1908.)
LXXXII.—How do you treat chronic lead poisoning?
(Answers due not later than January 15, 1909.)
LXXXIII.—How do you treat acute dysentery? (Answers due not later than February 15, 1909.)
Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short: if practicable, no one answer to contain more than six hundred roords.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

Our readers are asked to success topics for discussion.

The prize of \$25 for the best essay submitted in answer to question LXXX has been awarded to Dr. Paul F. Ela, of East Douglass, Mass., whose article appears below.

PRIZE QUESTION LXXX

THE TREATMENT OF ASPHYXIA NEONATORUM.

BY PAUL F. ELA, M. D., East Douglass, Mass.

Asphyxia neonatorum is very commonly met at close of prolonged or complicated labors. A discussion of its ætiology and prophylactic treatment might extend through the entire art of obstetrics considered from the standpoint of delivering a child capa

ble of breathing.

During the labor itself, the rate of the fetal pulse should be watched and if it becomes permanently slow, delivery should be hastened. In breech deliveries I cover the legs and body with warm cloths to prevent the difference between the temperature of the birth canal and that of the room from exciting premature efforts to breathe, and when the head reaches the perinæum I retract the vaginal wall from contact with the face to allow access of air to the mouth. In cephalic presentations it is sometimes necessary to slip a coil of the cord over the child's head or even to cut the cord in order to hasten delivery. In any case the face and air passages should be cleared of mucus as soon as the head is born.

The quickest way to clear the nasal passages is to attempt direct inflation of the lungs by the "mouth

to mouth method."

The diagnosis is made from the fact that the child does not breathe. The pulse is slow and its quality may range to any degree of weakness. The skin may be livid or deathly pale. The reflexes may be abolished.

The treatment should aim to clear the air passages, secure inflation of the lungs, and preserve and in-

crease the child's vitality.

The most certain method of filling the lungs with ais is by direct inflation through a catheter passed into the larynx. Mouth to mouth inflation in my own experience results in distending the stomach. In either method the nostrils should be closed. Artificial respiration by flexion and extension of the body is also effective. In the Schultze method the shoulders are grasped from behind with the child upright, and then the child's body swung at arm's length forward and upward until at the top of the swing the motion is abruptly checked, and the legs and pelvis fall toward the operator compressing the thorax. Reversing the motion the body extends and the thorax expands. This is said to be the most effective of the flexion methods.

In case the reflexes have not been abolished, the application of cold to the skin, slapping the buttocks, blowing in the face, tickling the throat, any of them may arouse the breathing reflex. Most effective is exploration of the anus with a finger.

One or two tablespoonfuls of blood may be allowed to escape from the cut cord if it seems neces-

sary to relieve the circulation.

These methods will generally be successful in simple asphyxia with a blue skin, bounding heavy pulse,

and good muscular tone.

But sometimes a child is born in a state of shock. As the body is delivered into his hands the attendant will perceive the flaccidity of the limbs before his everecognizes the cutaneous pallor which may not be evident at first. All methods of resuscitation which depend upon the excitability of the reflexes will fail in such a case because the reflexes do not exist. Even artificial inflation of the lungs is a desideratum secondary to the imperative need of preserving and restoring animal heat. If the cord still pulsates and artificial heat can be supplied while this connection with the aerated placental blood is maintained, I believe it is better not to cut the cord at once. But the inconveniences in the way of maintaining animal

heat under such conditions will usually determine in

favor of cutting.

Where I have reason to expect an asphyxiated child I have a pail of water at 102 to 105 F. ready and after a single compression and relaxation to inflate the lungs if possible, if shock is present, I immerse the body to the neck at once. One such folding of the pelvis on the thorax, the body supported head downward, can be practised even before the cord is cut. The position favors drainage of fluid from the air passages, and a moment is saved as compared with the Schultze method, which I have been afraid to use in such a case. A form of artificial respiration may be practised in the warm bath by alternately raising and lowering the thorax by one hand under the shoulders, the head and feet of the child being allowed to hang free, or direct inflation can be tried.

If the heart continues beating it should be left alone. If it stops, the fingers of the left hand can reach it through the flaccid abdominal wall and compress it gently against the thoracic wall. It can

sometimes be aroused again.

In a favorable case the slow pulse will quicken, the child will gasp spontaneously, and the skin assume the livid color of "blue asphyxia." These symptoms are warnings to let well alone. Artificial respiration should be tried only at considerable intervals. The feeble circulation can not absorb much oxygen. An untimely compression of the thorax may abort a spontaneous gasp. Gentleness of manipulation and patience are supremely necessary. The attendant should have the nerve to wait long minutes between gasps if the pulse holds its gain in rapidity and strength. But it is well to lift the child from the bath at regular intervals, and hold it head down while a movement of artificial respiration is practised.

In a case which seems to become a failure any rational means is justifiable, alcohol, strychnine, or atropine under the skin or a teacupful of hot sal solution passed into the rectum may be tried. But in my observation when failure came it came so rapidly that there was no time for these to do their

work.

When the patient has reached the point of gasping spontaneously at fairly regular intervals, and the skin is blue and the musculature again has tone, a quick dip into cold water will usually establish respiration with a spectacular convulsive gasp, and a more or less vigorous yell. But in my last case of this kind it was more than half an hour after birth before I dared to try it.

A child which has been so near death should be guarded in the after treatment from the curiosity and officiousness of relatives and friends by the best available nurse, and the most complete rest possible

to obtain.

When still a student, a fortunate opportunity to observe the patience and gentleness of Dr. C. M. Green in a case of this kind at the Boston Lying in Hospital, taught me this method. A fortunate opportunity to practise it soon afterward, as assistant to an older physician, confirmed me, and I have never used any other. I have not saved every child, but I have felt satisfied that I had done the best possible thing even when I have failed to preserve life.

Dr. Richard A. Bolt, of Cleveland, Ohio, remarks:

Intelligent and judicious treatment of asphyxia neonatorum requires some knowledge of the mechanism of respiration. Briefly, the fœtus in utero may be considered in a state of apnœa, deriving its oxygen through the placental circulation by means of osmosis and diffusion from the oxygenated maternal blood. Asphyxia results from a deficiency of oxygen in the fœtal circulation, or subsequently in the newborn, leading to accumulation of carbon dioxide in the blood with its toxic effects upon the respiratory nervous mechanism. Treatment of asphyxia neonatorum, therefore, resolves itself into prevention of any condition which shuts off, in part or whole, the oxygen supply from the fœtus in utero or in its passage through the birth canal, or mechanically hinders initial respiratory movements in the child when born. It also implies that there should be no interference with the initial reflexes which promote respiration. A knowledge of practical methods of resuscitation is most essential for successful treatment.

Prophylaxis is largely in the hands of the obstetrician, who may forsee many ante partum causes of asphyxia. Careful measurements of the pelvis, and an estimation of the relative size of the child may give valuable information as to when interference is demanded. If labor proves too long or severe it should be terminated as rapidly as is consistent with the welfare of mother and child. Indications for forceps should constantly be kept in mind, and applied when deemed necessary. When applied, the forceps should never be pressed too firmly upon the head for any length of time. Intermittent gradual pulling is preferred to a long continuous extraction. It should be remembered that while a prolonged second stage predisposes to a terminal asphyxia in the child, a careless or unskilled application of forceps leads to the same result. If a breech extraction or version is necessary care should be exercised to deliver the head within eight minutes after the umbilicus appears. When a prolapsed cord complicates the case every possible effort should be made to replace it, and retain in a high position until the presenting part engages. The knee chest position should be assumed, and the cord replaced with some suitable device. If one or more coils of cord are around the neck, gentle effort should be made to slip them back over the shoulders and body; this failing, a couple of clamps may be applied and the cord cut between them.

Intrauterine signs of asphyxia should be carefully The fœtal heart should be auscultated from time to time during labor. A progressive increase in rapidity reaching 180 to 190 per minute must be regarded as a sign of danger. If this is followed by a marked slowing, approaching 100 per minute, it is as a rule an indication for rapid delivery if the child's life is to be saved. Premature separation of the placenta, as indicated by an undue amount of blood in the early stages of labor and changes in the fœtal heart, must be looked for, and operative interference instituted as soon as possible. The mother should not be given an excess of any anæsthetic, or maximal doses of any depressing drugs, such as chloral and morphine. The use of ergot in the second stage is injudicious. Should the

death of the mother be imminent, the child may be saved by a very prompt delivery or Cæsarean section.

As soon as the head is delivered the face should be gently wiped off with sterile gauze, and the little finger covered with gauze inserted into the mouth and swept over the pharynx to remove as much of the mucous, amniotic fluid, and blood as possible. This simple procedure will often cause the child to take the first inspiration. Unless there are distinct indications for haste, the body should not be extracted with too much celerity. As a rule, late ligation of the cord should be practised.

When the body is born the child should be firmly grasped by the feet with a towel, and suspended with head downward, thus favoring gravitation of liquor amni and mucus from the bronchi, as well as affording an extra blood supply to the head. The back of the child should then be sharply slapped, beginning at the buttocks, and gradually going down to the shoulders. At the same time the physician may direct several breaths of air against the child's chest. or spray upon it alcohol and ether. As tenacious fluid collects in the pharynx, it must be gently wiped out. Most normal infants will respond with an inspiratory effort to this treatment, and a vigorous cry eventuate. If the asphyxia is more profound, and there is excess of mucus in the bronchi, a small tracheal catheter may be introduced and suction exerted with a bulb or syringe. Artificial respiration may then be consistently begun. Combined with this, the child should be placed alternately in hot (110° F.) and cold (iced or tap) water, being held with one hand under the shoulders, the thumb and index finger supporting the head, and the other hand under the thighs. As the child is transferred from one water to the other, its thighs and abdomen should be compressed against the thorax, and then gradually released and bent backward. The first movement should always be one which favors expiration. The doubling of the child upon itself may be repeated ten to twelve times per minute. This Byrd Dewey method if conscientiously pursued is one of the most useful at our command, with minimum amount of danger to the child.

It here becomes necessary to distinguish between two clinical forms of asphyxia, as treatment differs somewhat. In livid asphyxia the child is deeply cyanosed, reddish blue; the muscles retain some tone; the sphincters are still active, and the reflexes present to some degree; the heart beat is perceptible and usually rapid. In pallid asphyxia the color of the child is a cadaveric hue; the facies appears as in death; there is little if any resistance in the muscles; the sphincters are relaxed; the pupils dilated; the reflexes cannot be excited, and the heart beat is very

feeble, scarcely perceptible.

In livid, or blue, asphyxia chief reliance must be placed in exciting the reflexes. Slapping, hot and cold water, and Byrd Dewey method should first be given a trial. If these do not succeed, a consistent and prolonged course of artificial respiration should be begun. Efforts to save the child should not be given up until it is quite certain the heart has ceased to beat. The Sylvester method of artificial respiration has been used by many with fairly good results. This consists in placing the child on its back upon a firm surface, with its shoulders slightly elevated and

head hanging lower. The arms are then compressed firmly against the chest and abdomen to favor expiration, and then raised slowly above the head to cause inspiration. These movements are alternately kept up twelve to fourteen times a minute. method of Schultze of supporting the child under the shoulders and swinging it from between thighs of the physician up over the head is too violent to receive unqualified approval. I have found the other methods much more satisfactory, and equally efficient if rightly pursued. In severe cases of asphyxia, rhythmical tractions upon the tongue, as described by Laborde, should be tried. The tongue is gently pulled out to its limit, and then relaxed about fourteen times per minute. This sometimes stimulates respiration when other methods seem powerless. When respirations have begun the child should be warmly wrapped in a blanket, but not tightly about the chest and abdomen, and by no means covering over the face. It should be placed with head moderately low, and carefully observed to see that respirations continue.

In pallid asphyxia the problem is to get oxygen into the circulation as soon as possible, and at the same time keep up respiration. The child must be kept warm, and no rough handling permitted. Immersion in a hot water, or mustard, bath is desirable while treatment is carried out. Mucus and amniotic fluid should be removed from the bronchi as described before. Then air may be directed into the child's lungs by either mouth to mouth insufflation, or by means of a tracheal catheter and bulb. The air should be gently blown in, and gradually withdrawn. At the same time some of the milder methods of artificial respiration should be begun. If a tank of oxygen is at hand it may be administered, fairly well diluted with air. When respiratory movements are excited they should be kept up for some little time by artificial means, and the child closely watched. In my experience the subcutaneous injection of strychnine and other stimulants in asphyxiated infants has proved of little or no value.

(To be continued.)

Therapeutical Hotes.

Veratrum Viride in Puerperal Eclampsia .-The convulsions in puerperal eclampsia constitute the most striking manifestation of this disease, of which the exact nature and origin are still unknown. Moreover, the convulsive fit is itself a source of great danger to the patient, especially when frequently recurring, after brief intervals, and producing important circulatory disturbances. Thus the increased blood pressure, produced by the convulsion, acting upon bloodvessels, already altered by the colamptic poison, may cause their rupture, and so lead to cerebral hæmorrhage. Again, pulmonary and aspiration pneumonia not uncommonly result from the convulsions, and are among the common causes of death in eclampsia. In these circumstances, any drug, which will control this most dangerous symptom of eclampsia, is likely to have a good effect on the disease itself. This result has been secured by the hypodermic administration of the fluidextract of veratrum viride in small

and repeated doses. The character of the pulse must be taken as the guide in its administration. Where the pulse is full and strong, above 80 beats a minute, veratrum should be administered. On the other hand, where the pulse is rapid and small, and the arternal pressure is but slightly elevated, veratrum viride is contraindicated. A recent Italian writer has treated one hundred cases of eclampsia in the last ten years in this manner, with a maternal mortality of twelve per cent., and a feetal-mortality of 43.37 per cent. whereas, in the preceding ten years, before the introduction of the use of veratrum viride, he had a maternal mortality of 23.68 per cent.—The Practitioner, December, 1908.

Tonic Treatment of Constipation. Estmonnet (Journal de médecine de Paris, November 28, 1908.) prescribes a pill of the following composition, one of which is directed to be taken after each meal.

| \mathbb{R} | Pulverized | | | | | | | |
|--------------|-------------|---------|------|--|--|--|------|------|
| | Pulverized | ergot. | | | | | .gr. | 111; |
| | Extract of | bellado | nna. | | | | gr. | 1/7. |
| M. | Fac. pil. N | o. XX. | | | | | | |

The Treatment of Migraine.—According to Pron (Journal de médecine de Paris, October 10, 1908) migraine is almost always due to a condition of dyspeptic hyperchlorhydria, and the treatment of this condition may be employed against the diathesis. In addition to an antidyspeptic diet the constipation is treated by free purgations. The essential thing is to modify the secretion and functions of the stomach by the daily ingestion of alkali earths according to the following formula:

Calcium phosphate;
Prepared chalk;
Magnesium carbonate;
Sugar of milk.

M. et Sig.: One teaspoonful of the powder to be taken after the two principal meals in a cupful of warm water.

The addition of the sugar of milk and the magnesia is deemed useful to overcome the constipating action of the calcium phosphate and chalk, while the magnesia acts as an antacid.

At the onset of an attack of migraine the symptoms may be greatly ameliorated by the administration in a cupful of hot water of the following powder:

| Prepared chalk; |
|-----------------------------------|
| Magnesium carbonate; |
| Calcium phosphate, |
| Bismuth subnitrate,gr. viiss |
| Pulverized opium,gr. 1/3 |
| Sparteine sulphate,gr. 3/5 |
| Pulverized belladonna leafgr. 1/3 |

The same dose should be administered several hours later if needed. The application of hot compresses to the abdomen is prescribed at the same time.

The Use of Tincture of Iodine in Eczema.—The application of tincture of iodine to an eczematous surface proved satisfactory in the hands of J. H. E. Tomlinson (*The British Medical Journal*, October 17, 1708) after several remedies had been tried unavailingly. The case was one of relapsing moist eczema. Under the influence of the tincture painted lightly on the eczematous patch four times daily the itching ceased, the vesicles dried up, and the skin peeled off, leaving a healthy surface.

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NEW YORK, SATURDAY, DECEMBER 26, 1908.

UNDRAWN POULTRY IN COLD STORAGE.

Attention has repeatedly been called to the practice of keeping undrawn poultry for long periods in cold storage. The practice is certainly disgusting and probably inimical to the health of the community. Some time ago the subject was studied by the United States Department of Agriculture, and it was found that the time that such fowls were kept in storage was occasionally as long as four years. The general opinion in the trade seemed to be that undrawn poultry, kept properly frozen, would be preserved for a long time without detriment. The investigations made by the government laboratory, however, showed that this was not the case. Both microscopical study and the taste of the cooked fowls showed that gross visible degeneration did take place.

Although no bacteriological examinations appear to have been made, some light is shed on the nature of these changes by the investigations recently reported by Pennington, in the Journal of Biological Chemistry. She studied the extent of bacterial growth in milk kept at low temperatures, and found that this was far more extensive than was usually believed. Thus, in clean milk kept at less than o° C., and containing originally 300 germs to the cubic centimetre, the number of germs at the end of five or six weeks was several hundred millions. The casein of the milk was reduced to about half its original amount. The taste and odor of the milk were not changed by this bacterial development, and

the milk did not coagulate on being heated. At low temperatures the liquefying organisms developed more than the acid producers, but at higher temperatures the reverse was the case.

Considering the importance of the subject, it is strange that so little work has been done on the bacteriology of undrawn poultry kept in cold storage. In view of the findings of the Department of Agriculture, it would appear to be advisable to establish a maximum time limit beyond which such poultry could not be kept. In order to fix such a limit, however, we must be in possession of far more scientific data than we now have.

LEPROSY IN THE UNITED STATES.

In the Evening Post of November 3d there is published a vigorous statement by Dr. Albert S. Ashmead, formerly foreign medical director of the Tokyo Hospital, of the need in this country of at least one institution for the care of lepers, and an appeal is made to private philanthropy for funds for this worthy purpose. Both common humanity and an enlightened self interest demand a more generous and humane provision for these incurable sufferers, a class of unfortunate patients in the care of whom we have been singularly backward. There is good reason to believe that there exists in the United States a larger leper population than is generally admitted. In the States of Louisiana, Minnesota, North Dakota, South Dakota, Wisconsin, and California, and in the Aleutian Islands of Alaska, leprosy may be fairly said to be endemic, and with increasing frequency sporadic cases are being reported from all our large cities. The ignorant and unfeeling manner in which these cases, when made known, are generally dealt with by our municipal authorities is a disgrace to a civilized

There has probably been an actual increase in the number of such cases since the termination of the war with Spain, with its resulting territorial expansion and the closer relations we have acquired with Cuba, the Philippines, the Hawaiian Islands, China, and Japan. Our leper population doubtless exceeds that of Norway, and vet that small and relatively poor but highly enlightened country provides three hospitals, two at Bergen and one at Trondhjem, for its lepers, who through a policy of intelligent segregation have been reduced in number from 2,870 in 1856 to fewer than 500 at the present time. It is estimated that there are fully 400 cases of leprosy among our population of Scandinavian immigrants alone, and this estimate is probably not excessive, as it about corresponds to the present incidence of the disease in Norway,

from which, it should be remembered, the United States has received immigration in recent years nearly equal to the present total population of Norway.

THE AGGLUTINATION TEST IN TUBERCULOSIS.

With the recent visit of Professor Courmont to some of the local laboratories interest has again revived in the agglutination test in tuberculosis, first described by Arloing and Courmont in 1898. Those who have followed the laboratory work in tuberculosis will recall that the important feature of the technique in the test consists in the preparation of a homogeneous culture of the tubercle bacilli. The homogeneous culture first prepared by Arloing and Courmont was grown on a potato and then transplanted into glycerin bouillon. The latter culture was then shaken briskly several times a day while in the incubator. In this way the tubercle bacilli were gradually made to grow all through the bouillon instead of merely in a crust on the surface. The cultures which Professor Courmont demonstrated while on his visit to the recent Tuberculosis Congress are uniformly cloudy like a typhoid culture.

The test is performed like ordinary agglutination tests, but macroscopically. In a set of three small test tubes are placed, say ten, ten, and fifteen drops of diluted culture respectively, and to these are added two, one, and one drop of serum from the suspected individual respectively. This gives dilutions of one to five, one to ten, and one to fifteen. Depending entirely on the agglutinability of the culture, the agglutinations resulting in these dilutions are to be interpreted. With a culture of ordinary agglutinability, a positive reaction in the one in five and one in ten dilutions, in an individual already suspected on clinical grounds of being tuberculous, is indicative that such infection is present. On the other hand, if in an individual known to be tuberculous there is no agglutination in these dilutions. this is taken as an indication of low resistance, of a failure to produce antibodies, and therefore as a sign of bad prognosis.

While it is true that a number of unfavorable comments have been made on this reaction, not only by the workers in this country, but also and especially by the German workers, it would seem desirable to have the test thoroughly tried. Certainly every diagnostic and prognostic test that is really of value should be available for those engaged in the study and suppression of this disease. Furthermore, there are few departments of immunity about which we are so ignorant as that concerning the antibodies in tuberculosis. We commend this test to the attention of our laboratory workers.

A SUPPOSED PATHOGENIC ACTION OF RADIOACTIVE WATERS.

Before the French Academy of Sciences (Presse médicale, November 4th) M. Répin remarked lately that he had observed that the Alpine spring waters that were supposed to give rise to goitre were constantly characterized by a notable radioactivity, and that it was attributable, at least in great part, to radiothorium. This condition, analogous to what was constantly found in waters more or less mineralized, led him to ask if radioactivity was not an attribute common to all waters proceeding from a great depth after prolonged contact with volcanic rock containing scattered traces of radium and If this was really the case, and if this radioactivity, as M. Répin supposed, counted for something as a cause of endemic goitre, it could be quite explained why the disease in all parts of the world prevailed most particularly in mountainous and upheaved countries, while it showed itself only sporadically in plains of stable stratification and stopped short at the boundary of homogeneous crystalline belts. On such a supposition, he said, we might explain the success recently met with by a number of English physicians in the treatment of goître by restricting the patients to the exclusive use of distilled water.

THE TITRATION OF DIPHTHERIA ANTITOXINE.

Except to those directly engaged in immunity studies it will probably be news that there is still some difference of opinion concerning the mode of titrating diphtheria antitoxic serum. We have so long been accustomed to hear the strength of this serum expressed in terms of Ehrlich's units that we naturally associate the therapeutic power with the antitoxine units present in the serum. Some years ago Roux advanced the proposition that there was no parallelism between the curative and preventive value of diphtheritic antiserum and the number of its antitoxine units. In support of this view he brought forward the results of experiments made by Momont and Danysz, which showed that a serum which contained three and a half times as many antitoxic units (by Ehrlich's method) as another serum was really inferior to the latter in both preventive and curative properties.

Since the publication of these experiments, the subject has been studied by other investigators, among whom may be mentioned Marx, Madsen, Dean, Cruveilhier, Kraus, and Steinhardt and Banzhaf. Of these, only Cruveilhier and Kraus arrived at results confirming Roux's statement. So far as the work of Kraus is concerned, it subsequently appeared that the antitoxic strength of the

sera used had not been fixed with sufficient accuracy to warrant the conclusions drawn. Cruveilhier's experiments were repeated step for step by Banzhaf. of New York, but with entirely different results. The therapeutic value of the serum was always parallel with the antitoxic strength as measured by Ehrlich's method. In connection with this subject it is interesting to note that a Viennese clinician believes he has found that a low grade diphtheria antitoxine gives better clinical results than a high grade serum used at the same time. In view of the extended use of diphtheria antitoxine, it would be very strange if this was really the case. The weight of evidence is certainly strongly in favor of the current view, namely, that the therapeutic power of the serum is measured by the number of its antitoxic units. Perhaps some of our clinicians can contribute something to this interesting discussion.

CATAPHORESIS IN THE TREATMENT OF CYSTITIS.

At a recent meeting of the French Association of Urology (*Presse médicale*, November 4th), Dr. Denis Courtade reported his experience (but, so far as the report goes, not his results) in five cases. The remedy employed was a five per cent. solution of sodium salicylate, a current of five milliampères being passed for ten minutes at a time three times a week.

PREGNANCY AFTER DOUBLE RENAL DECAPSULATION.

A case reported by Dr. Chambreland, of Bordeaux, at a recent meeting of the Obstetrical Society of France (Presse médicale, November 4th) seems to have some bearing upon two points connected with the relief afforded by decapsulation in renal disease—that of the promptness of its action and that of its duration. A woman was in a persistent state of coma after several eclamptic paroxysms. Labor having been terminated and scantiness of urine continuing, the kidneys were decapsulated. The convulsions ceased immediately, and then the coma disappeared. Her general health was rapidly ameliorated to the point of complete reestablishment. Two years later she became pregnant again, and the pregnancy pursued a normal course, and was followed by natural labor and a favorable lving-in period.

"COALS TO NEWCASTLE."

At the top of one of the columns of its first page, the *New York Times* of December 19th published a London "special cable" introduced by the following headlines: "Find Use for Appendix. Abused Or-

gan Employed as Tube to Convey Medicine to Lower Intestine." "The vermiform appendix," says the dispatch, "which has been looked upon hitherto as a useless and even dangerous organ, has at last justified its existence, according to a statement made by the surgeon of a London hospital, where the appendix has been shown to be a great help in treating diseases of the lower intestine." It then goes on to a crude description of the use to which the appendix has been put in irrigating the large intestine through "its lumen passage."

All this, which occupies about six inches of the newspaper's column, has reference of course to the operation known as appendicostomy, which was described more than five years ago (in the *Medical Record* for August 9, 1903) by Dr. Robert F. Weir, of New York. Since that time, as we learn from an excellent article contributed by Dr. W. B. Russ, of San Antonio, to the *Texas State Journal of Medicine* for July, 1908, several American surgeons have written on the subject in various journals. To telegraph such "news" to New York seems to us, therefore, very much like "carrying coals to Newcastle."

THE ARCHIVES OF DIAGNOSIS.

The October number of this quarterly, closing the first volume, warrants a continuance of the favorable opinion which we expressed of an early number. It contains articles by such well known men as Dr. Godfrey R. Pisek, Dr. Alfred C. Crofton, Dr. Thomas F. Reilly, Dr. Charles Greene Cumston, Dr. Byron Robinson, Dr. Carl Beck, Dr. Robert T. Edes, Dr. Alfred Gordon, Dr. S. D. Ingham, Dr. Tom A. Williams, and Dr. Ralph Waldo, as well as by the accomplished editor, Dr. Heinrich Stern.

THE ANTIVIVISECTION AGITATION.

The secretary of the Committee on Legislation of the Medical Society of the State of New York reminds the profession of the State that the antivivisectionists are bent on renewing their efforts to secure restrictive legislation that will seriously hamper the progress of medicine in so far as it is based on animal experiments. He points out that in their propaganda they are making use of appeals founded largely on assumptions and unsupported allegations. The Medical Society of the State of New York, he informs us, is prepared to furnish literature setting forth the truth with regard to experiments on animals, and to provide speakers for clubs and societies that are interested in the subject. Such speakers can undoubtedly accomplish a great deal in the way of enlightening the public concerning the care taken by experimenters to avoid cruelty and concerning the adequacy of our present laws for all legitimate purposes.

Rems Atems.

Executive Secretary for the Tuberculosis Exhibit .-The Executive Committee of the International Exhibition in Philadelphia has selected Dr. F. N. Yeager as executive secretar

The Medical Society of the Borough of The Bronx held a clinical meeting on Wednesday, December 9th. programme consisted of the presentation of patients and the reports of cases, followed by a general discussion.

The Medical Jurisprudence Society of Philadelphia.-At a stated meeting of this society, which was held ou Monday evening, December 21st, Dr. Alfred Gordon delivered an address on Amnesia from a Medicolegal Stand-

Dr. Rotch on Child Labor .- Dr. Thomas M Rotch, of Boston, the distinguished pædiatrist, delivered an address on Child Labor to the physicians of Philadelphia, at the Jefferson Hospital Amphitheatre, on Monday, Decemher arst

Scientific Society Meetings in Philadelphia for the

Week Ending January 2, 1909:

MDAY, December 18th.—Mineralogical and Geological Monday, December 18th.—Mineralogical and Geolog Section, Academy of Natural Sciences. Friday, January 1st.—American Philosophical Society.

The West Philadelphia Medical Association.-The following officers have been elected to serve for the ensuing year: President, Dr. F. M. Cleveland; vice-president, Dr. S. F. Gilpin; secretary, Dr. George Mills Boyd; financial secretary, Dr. W. M. Miller; treasurer, Dr. E. L. Graf.

The Buffalo Academy of Medicine.-A stated meeting of the academy was held on December 22d, under the auspices of the Section in Pathology. The principal feature of the programme was a paper on Absorption from the Peritoneal Cavity, by Dr. W. G. MacCallum, of Baltimore.

The Medical Society of the County of Richmond, N. Y., elected the following officers at a recent meeting: Dr. Eugene J. Callanan, president; Dr. Walker Washington, vice-president; secretary and treasurer, Dr. Charles E. Pearson; censors, Dr. George Jessup, Dr. W. J. Bryan, and Dr. E. E. Hillyer.

The Red Cross Christmas Stamps .- Announcement is made by the chairman of the Christmas Stamp Committee of the New York County Subdivision of the National Red Cross that by the end of the month more than five millions of the stamps will have been sold in New York. Similar reports are being received from every large city in the United States, as well as the smaller cities and towns.

The Syracuse, N. Y., Academy of Medicine.-A meeting of this academy was held on Tuesday evening, December 22d, in the Carnegie Library Building. Dr. H. B. Doust presented a report of the work of the tuberculosis clinic for the past eight months. Dr. J. R. Wiseman read a paper on Perforated Duodenal Ulcer. The Library Committee submitted its report, and officers for 1909 were

Contagious Diseases in Chicago .- During the week ending December 12, 1908, there were reported to the Department of Health 867 cases of contagious diseases, as follows: Diphtheria, 222 cases; scarlet fever, 213 cases; measles, 98 cases; chickenpox, 132 cases; pneumonia, 26 cases; typhoid fever, 47 cases; whooping cough, 21 cases; tuberculosis, 82 cases; other diseases of minor importance, 26 cases.

Philadelphia Academy of the Natural Sciences.--At the annual meeting of the academy, which has held on the evening of December 15th, Dr. Samuel G. Dixon, State commissioner of health, was elected president for the fourteenth consecutive time. The two vice-presidents, Arthur Erwin Brown, Sc. D., and Edwin G. Conklin, Ph. D., were reelected, as were also the secretaries, the treasurer, and the librarian.

The Manhattan Medical Society held a stated meeting on Friday, December 18th. After the presentation of patients and the exhibition of specimens, surgical instruments, etc., two papers were read, one by Dr. H. Edwin Lewis on Malignant Disease of the Lung, with Report of a Case of Sarcoma, and the other on Latent Malignant Disease of the Stomach, by Dr. Heinrich Stern. A clinical conference on expectorants was held, and a general discussion followed.

New Buildings for Beth Israel Hospital.-The present buildings of this institution, which is situated on Cherry Street, are wholly inadequate to meet requirements, and plans are being prepared for the erection of new buildings The building committee has been instructed to select a site on the east side, somewhere between Houston and Twenty-third Streets. In addition to the real estate holdings of the hospital association the building fund amounts to \$100,000, and many liberal subscriptions have been promised.

Consumptives as Trained Nurses.—Dr. George B. Wight, Commissioner of Charities and Correction of New

Jersey, is quoted as recommending that the New Jersey Tuberculosis Sanatorium at Glen Gardner be used as a training school for tuberculous patients instead of a sana-torium merely. This sanatorium receives only incipient cases, and Dr. Wight believes that if these persons were properly taught they would become invaluable as trained nurses in local hospitals or camps, to care for others suffering with the disease.

Society Meetings for the Coming Week:
MONDAY, December 28th.—Medical Society of the County
of New York.

THURSDAY, December 31st .- Brooklyn Society for Neu-

rology.

Friday, January 1st.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Cinical Society, New York; Practitioners' hattan Cinical Society of New York.

The Pacific Slope Public Health Association is the name of an organization recently formed in Portland, Ore at a meeting of representatives of the boards of health of practically every seaport town on the Pacific coast from Victoria, B. C., to San Diego, Cal. The object of the assoresolution is to secure protection against bubonic plague. A resolution was passed at the meeting that the legislative assemblies of the several States be asked to pass laws which would compel the fumigation of all vessels from off-shore

The Nobel Prizes.—The Nobel prize in medicine has this year been divided between Professor Elie Metchnikoft, assistant director of the Pasteur Institute, Paris, and Professor Paul Ehrlich, director of the Institute for Experi mental Therapeutics at Frankfort-on-Main. The Nobel prize in chemistry has been awarded to Professor E. Rutherford, F. R. S., director of the Physics Laboratory in the University of Manchester. The prize in physics has been awarded to Professor Gabriel Lippmann, professor of physics at the Sorbonne, Paris.

The Health of Pittsburgh .- During the week ending December 12, 1908, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 20 cases, 0 deaths; typhoid fever, 17 cases, 7 deaths; scarlet fever, 23 cases, 0 deaths; diphtheria, 13 cases, 0 deaths; measles, 39 cases, 2 deaths; whooping cough, 9 cases, 1 death; pulmonary tuberculosis, 22 cases, 9 deaths. The total deaths for the week numbered 171, in an estimated population of 565,000, corresponding to an annual death rate of 15.73 in 1,000 population.

The Scientific Temperance Federation held its second annual meeting in Boston on December 8th. tary's report summarized the work accomplished by the organization during the past year, and presented briefly the outlook for the antialcohol movement from the scientific standpoint. The following officers were elected for the coming year: President, the Rev. C. A. Vincent; vice-president, Mrs. A. J. Gordon; recording secretary, Mrs. L. L. Transeau; corresponding secretary, Miss Cora Frances Stoddard; treasurer, Mr. Robert H. Magwood.

Changes in the Faculty of the Baltimore Medical College.—Dr. David Streett, dean of the Baltimore Medical College, announces certain changes in the faculty of that institution. Dr. Robert W. Johnson, professor of the principles and practice of medicine, who has been a member of the faculty for seventeen years, has resigned his chair and will retire from the faculty on January 1st; Dr. P. P. Wefold rescent of professor of anytony has been R. B. Warfield, associate professor of anatomy, has been elected to the vacant chair. Dr. William E. Moseley has resigned the chair of professor of diseases of women, which he has occupied for twelve years, and will retire on January 1st. He will be succeeded by Dr. W. B. Perry, associate professor of operative surgery.

The Medical Society of the County of Monroe, N. Y. -At the annual meeting of this society, acld on the even ing of December 15th, in Rochester, N. Y., the following officers were elected: President, Dr. T. A. O'Hare; viceofficers were elected: President, Dr. T. A. O'Hare; vice-president, Dr. C. E. Darrow; treasurer, Dr. R. R. Fitch, re-elected; secretary, Dr. C. R. Witherspoon, reelected. The following named physicians were elected to membership in the society: Dr. Christopher F. Chaffe, Dr. Charles W. Hennington, Dr. Edwin W. Kibbe, and Dr. Morris G. Or-chard, of Roehester, and Dr. F. H. White, of Fairport.

The East Side Physicians' Association, New York.-At a meeting of this association, which was held on December 18th, the programme included reports of the following cases; Uteri removed by Hysterectomy, by Dr. Abram Brothers; Extrophy of the Bladder, by Dr. George Dow Scott; Orthopædic Cases, by Dr. Sigmund Epstein. The paper of the evening was read by Dr. A. E. Isaacs, and was entitled Free Suppurative Peritonitis, Comment on Recent Discussions. Among those who participated in the discussion were Dr. A. G. Gerster, Dr. Howard Lilienthal, Dr Joseph Wiener, Dr. Henry M. Silver, and Dr. F. W. Gwyer.

The Memphis and Shelby County, Ky., Medical Society held its annual meeting in Memphis on December 15th. Dr. G. B. Thornton was elected president, to succeed Dr. Alexander Erskine. Dr. E. C. Blackburn was elected vice-president, and Dr. J. W. Price was reelected as secretary and treasurer. After the election of officers a banquet was held in the Hotel Cordova, Dr. B. F. Turner presiding as toostmater. presiding as toastmaster. Among those who responded to toasts were Dr. Alexander Erskine, the retiring president; Dr. George R. Livermore, the retiring vice-president; Dr. E. C. Blackburn, Dr. J. W. Price, Dr. William Krauss, Dr. Eugene Rosamond, and Dr. B. G. Henning.

The Hospital Saturday and Sunday Association of New York City announces that Saturday and Sunday, December 26th and 27th, will be Hospital Saturday and Sunday in New York. Contributions received on these days will be added to the general fund, and will be divided among the associated hospitals on the basis of free care for the sick. Contributions will be received through collections in the churches on Hospital Sunday, and in the synagogues on Hospital Saturday; through auxiliary associations in the trades; through the woman's auxiliary; through auxiliaries or committees on all the exchanges; or through gifts sent direct to Mr. Charles Lanier, general treasurer, 59 Cedar Street, New York.

A Dinner for Physicians .-- Mr. R. Fulton Cutting gave a dinner for Physicians.—Mr. R. Fulton Cutting gave a dinner on Sunday evening, December 20th, for the twen-ty-nine young physicians who worked during the summer in the depots of the New York Milk Committee in behalf of the babies in the congested districts. Eight nationalities were represented at the dinner—Jews, Italians, Germans, Bohemians, Hungarians, Irishmen, negroes, and Americans. Mr. Cutting is president of the New York Association for Improving the Condition of the Poor, under the direction of which the Milk Committee was organized, and the dinner was given as a tribute to the devotion and self sacrifice of the men who had given their time and energy to carrying on the work

The Medical Society of the County of Onondaga, N. Y., elected the following officers at the annual meet N. Y., elected the following officers at the annual meeting of the society, held in Syracuse, on December 15th: President, Dr. S. Ellis Crane; vice-president, Dr. T. H. Halsted; secretary, Dr. John C. Shoudy; treasurer; Dr. S. Allen Cone; censors, Dr. Frederick Flaherty, Dr. Arthur S. Ruland, Dr. A. E. Larkin, Dr. E. J. Wynkoop, and Dr. A. S. Hotaling; State delegates, Dr. John L. Heffron and Dr. D. M. Totman; delegates to Fifth district branch, Dr. George B. Broad and Dr. Dwight H. Murray. Dr. George H. Shaw, of Baldwinsville: Dr. George W. Stark, of Syracuse, and Dr. Horace G. Padgett, of Tully, were elected to membership. membership.

The Health of the Army in Different Sections of the United States is shown in the last annual report of the Surgeon General. From this it appears that the highest admission and noneffective rates and the lowest death rate occurred in the Department of the Gulf, while the lowest admission and noneffective rates were noted in the Department of California, and the highest death rate in the Department of the Columbia. The Department of the Lakes had the highest rate for typhoid fever, while the Department of Dakota had the lowest. The Department of Dakota had the highest rate for malaria and the Department of the Columbia the lowest. The Department of California had the lowest rate for pneumonia, while the Department of the Columbia had the highest; the latter department also had the highest rate for tuberculosis and the lowest for

The Jefferson County, Ky., Medical Association.—The handsome new headquarters of this organization in the Atherton Building, Fourth and Chestnut Streets, Louisville, were opened on the evening of December 14th with appropriate exercises. Dr. George W. Crile, of Cleveland, Ohio, who was the principal speaker of the evening, delivered an address on Acute Anæmia and its Treatment. Dr. B. F Zimmerman, the president of the society, presided, and Dr. Lewis S. McMurtry and other prominent physicians of Louisville delivered short dedicatory addresses, in which the history of the association was reviewed. The new headquarters contain an auditorium which will seat nearly three hundred people, and a library of three thousand volumes

Medical Society of the Woman's Hospital of Philadelphia.—A regular meeting of this society was held on Monday evening, December 21st. Dr. Clara T. Dercum exhibited a patient with an acute cerebellar lesion, and Dr. Matilda Osborne reported a case of pseudomuscular hyper-trophy. Papers were presented as follows: Treatment of Backward Displacements of the Uterus by the Alexander Operation, by Dr. Caroline M. Purnell; A Month in Bunm's Klinik, Berlin, by Dr. Catherine Macfarlane; Report of a Case of Cæsarean Section for Absolute Pelvic Contraction, by Dr. Mary W. Griscom; Report of a Case of Cæsarean Section for Disproportion between the Fætal and Maternal Parts, with Accidental Hæmorrhage, by Dr. Marie K. Formad.

The Investigation of New York's Oyster Supply. Announcement is made by the Health Department that, so far as their investigation of the oyster supply has been carried, everything indicates that the oyster beds are free from pol-lution, and that the method of storage prevents contamination. Dr. Walter Bensel, chief executive officer of the Department, after a personal investigation of the conditions under which oysters were grown off Cape Cod, in Great South Bay, Long Island, and in Lynnhaven Bay, Virginia, declared that there was not the slightest danger of the contamination of these oysters with typhoid germs. It is reported that on January 15, 1909, a general conference will be held in New York of the Commissioners of Shell Fisheries from sixteen States, the object being to advance the industry in the several States through taking care of the

Infectious Disease in New York:

We are indebted to the Bureau of Records of the De-partment of Health for the following statistics of new cases and deaths reported for the two weeks ending Decomber 10. 100

| | 4 | JGC 13 - | | 6. 10- |
|-------------------------|--------|----------|-------|--------|
| | | Deaths | (3-1- | Deatus |
| Tuberculosis pulmoralis | 1913 | 1.4.3 | 418 | 1 > 5 |
| Diphtleria | 38, | 4.2 | 320 | 3.1 |
| Measles | 354 | 100 | 332 | |
| Scarlet fever | | 1 - | 282 | |
| Smallgox | | | | |
| Varicella | 232 | | 199 | |
| Typhoid fever | 0.4 | 1,3 | D. | 1 - |
| Whooping cough | | 2 | 30 | 5 |
| Cerebrospinal meningiti | | - | 11 | 4 |
| | | | | |
| Totals | 1. 40. | 227 | 1,723 | 20. |

Charitable Bequests .- The German Hospital, Brook-

lyn, has received \$10,000 from the William Ulmer estate, and \$10,000 from the Charles Pfizer estate.

By the will of William H. Potter, of Kingston, R. I., the Butler and Rhode Island Hospitals, Providence, receive \$10,000 each; also lands in Providence and Cranston, and one-fourth of the remaining stocks and bonds not otherwise

By the will of the late Frederick Persch, of Buffalo, the German Hospital, Buffalo, receives \$1,000, and the Ger-

man Deaconness Home and Hospital receives \$2,000.

By the will of Dr. William Mackie, who died recently in Milwaukee, the Milwaukee Hospital receives \$2,000, and Dr. Mackie's medical library, composed of several hundred

By the will of Sarah R. Kolb, the Philadelphia Home for Incurables and the German Hospital, Philadelphia, receive \$5,000 each for the endowment of free beds, the German Protestant Home for the Aged receives \$1,000.

Dith of Current Titerature.

BOSTON MEDICAL AND SURGICAL JOURNAL

I. Some of the Difficulties, Professional and Social, of the Early Recognition of Tuberculosis, and Some Suggestions as to the Remedy, By EDWARD O. OTIS. Medical Inspection of Schools from the Standpoint of

the Medical Inspector,
By John T. Sullivan, T. J. Murphy, and M. J. Cronin.

Observations on Epilepsy (To be continued), By EVERETT FLOOD.

Shall the Tuberculosis Patient Be Treated in the Home Climate or Sent to Some Region with a More Equitable Climate, where More Hours Can Be Spent in the Open Air with Less Discomfort, By ISAAC WILLIAMS BREWER.

The New Silver Salts as Compared with Silver Nitrate in the Treatment of Ophthalmia of Newborn Chil-By HASKET DERBY.

Chronic Intestinal Catarrh (Concluded), By LESTER C. MILLER.

2. Medical Inspection of Schools.—Sullivan, Murphy, and Cronin observe that, although Boston is the pioneer city in the establishment of medical inspection of school children, there are many defects. Our authors are of the opinion that the system of medical inspection, including physicians and nurses, should be placed under the control of the Beard of Health. A chief medical inspector should be appointed, with deputies, if necessary, to have full authority over all, his function being to direct and control the work of the district inspectors and to see that each performs the duties required; also, through a supervising nurse, to direct the work of the nurses. The medical inspectors' powers should be definitely determined and specifically set forth, and a proper compensation should be given. The nurses should be subordinate to the district medical inspectors and should work only under their direction. A card system of records should be devised, to be filled out by both physicians and nurses, one set to be kept at the schools and another set at the office of the chief medical inspector. The Board of Health and the School Committee should cooperate in bringing about such needed reforms.

4. Shall the Tuberculous Patient Be Treated in the Home Climate or Sent to Some Region with a More Equitable Climate?—Brewer, while acknowledging the splendid results obtained in the Eastern sanatoria, believes that, all things being equal, better results can be obtained in the arid region than in the cloudy and humid atmosphere of the Atlantic States. He cites Dr. Osler, who, in discussing the subject of climate in the treatment of tuberculosis, says: "The requirements of a suitable climate are pure atmosphere, an equable temperature not subject to rapid variations, and a maximum amount of sunshine. Given these three factors, and it makes very little difference where the patient goes so long as he lives an outdoor life." There can be but little doubt, remarks our author, that the arid region of the southwest excels in purity of its atmosphere. There we find very few factories and other industrial establishments belching impurities into the air. Most of the impurities in our atmosphere are placed there by man or his instruments of labor. In Arizona the last census showed less than two persons to the square mile. The clearness of the

The Mortality of Chicago.-During the week ending December 12, 1908, there were reported to the Department of Health of the City of Chicago 537 deaths from all causes, as compared with 520 for the preceding week and 594 for the corresponding period in 1907. The annual death rate in a thousand population was 12.92, as against a death rate of 14.70 for the corresponding week in 1907. The total number of deaths of children under five years of age was 165, of which 104 were under one year of age. The principal causes of death were: Apoplexy, 7 deaths; Bright's disease, 30 deaths; bronchitis, 10 deaths; consumption, 53 deaths; cancer, 31 deaths; convulsions, 1 death; diphtheria, 23 deaths; heart diseases, 57 deaths; influenza, 4 deaths; intestinal diseases, acute, 33 deaths; measles, 5 deaths; nervous diseases, 15 deaths; pneumonia, 79 deaths; scarlet fever, 14 deaths; suicide, 10 deaths; typhoid fever, 2 deaths; violence (other than suicide), 28 deaths; all other causes, 135 deaths.

The Medical Society of the County of New York.—A stated meeting of this society will be held on Monday evening, December 28th, at 8:15 o'clock. Dr. James T. Gwathmey will exhibit an improved gas ether inhaler. Duncan Silkworth will read a paper entitled A Further Report on the Missionary Treatment of the Opium Habit, and will present patients. The remainder of the programme will consist of a "symposium" on Purulent Otitis Media. Dr. H. O. Reik, of Baltimore, will read a paper on the Pathology of Purulent Otitis Media, which will be illustrated with lantern slides. Dr. Edmund Prince Fowler will read a paper on the nonoperative treatment of this disease, accompanied by a demonstration of his method, and the erative treatment will be dealt with by Dr. Wendell Philips. Among those who will take part in the discussion are Dr. Edward B. Dench, Dr. Arthur B. Duel, Dr. James F. McKernon, Dr. Samuel J. Kopetzky, and Dr. Joseph A. Kenefick. At the close of the meeting a collation will be served, to which guests as well as members are invited.

The Health of Philadelphia.—During the week ending December 12, 1908, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 44 cases, 13 deaths; scarlet fever, 51 cases, 2 deaths; chickenpox, 93 cases, 1 death; diphtheria, 104 cases, 11 deaths; cerebrospinal meningitis, 2 cases, 1 death; measles, 45 cases, 0 deaths; whooping cough, 7 cases, 0 deaths; tuberculosis of the lungs, 100 cases, 14 deaths; cases, 0 deaths; tuberculosis of the lungs, 100 cases, 15 deaths; cases, 0 deaths; tuberculosis of the lungs, 100 cases, 15 deaths; cases, 0 deaths; tuberculosis of the lungs, 100 cases, 15 deaths; cases, 10 deaths; 10 10 dea cases, 53 deaths; pneumonia, 75 cases, 47 deaths; erysipelas, 5 cases, 1 death; puerperal fever, 2 cases, 0 deaths; cancer, 23 cases, 29 deaths; mumps, 9 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 9 deaths; diarrhoca and enteritis, under two years of age, 21 deaths. The total deaths numbered 469 in an estimated population of total deaths numbered 409 in an estimated population, 15,32,738, corresponding to an annual death rate of 15,90 in 1,000 population. The total infant mortality was 98; under one year of age, 81; between one and two years of age, 17. There were 47 still births, 31 males and 16 females. The There were 47 still births, 31 males and 16 females. total precipitation was 2.01 inches.

Personal.-Dr. Joseph Tommasilli, an Austrian physician, who is connected with the Sanitary Bureau in the Panana Canal Zone, was recently bitten by a dog which showed signs of rabies. Dr. Tommasilli made a hurried trip to Washington, where he is now receiving the Pasteur treatment

Dr. William H. Wahl has resigned from the position of secretary of the Franklin Institute of Philadelphia.

Dr. E. P. Corson White, of Norristown, Pa., is registered

at the Philadelphia Polyclinic and College for Graduates in Medicine.

Mr. Charles F. Cox has been appointed the delegate of the New York Academy of Sciences to the Darwin centennial at the University of Cambridge.

Dr. Samuel G. Gant, professor of intestinal surgery at the New York Postgraduate School of Medicine, held a clinic at the Harper Hospital, Detroit, Mich., on Monday morning, December 14th, and in the evening of the same day he delivered an address before the Wayne County Med-

Dr. Arthur Erwin Brown has been appointed by the Philadelphia Academy of Natural Sciences as its delegate to the Darwin memorial celebration to be held at the Univer-

Miss B. Marion Wade has been appointed bacteriologist and chemist in the laboratory of the Boston Board of air is so great that buildings might be seen at a distance of eighteen miles and even further, while in the vicinity of Boston there are few days when five miles are the limit. As regards temperature, there are few regions where the conditions more nearly coincide with the requirements given by Osler. There is, indeed, a considerable difference between the heat of the day and the cool of the night, often amounting to 30° F., but this is of daily occurrence and can be provided for. There is almost an entire absence of the rapid changes, cold waves, which are far from uncommon in our eastern States during the spring, fall, and winter months. The sun shines in the southwest more than in any other region of the country. Bright sunny days are the rule and cloudy days and days with continuous rain are rare.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

The Duration of Life after Extensive Hæmorrhage of By WILLIAM G. SPILLER. The Sphenoidal Sinus. A Study Based on the Examination of Eighty-five Specimens,

By JAMES A. GIRSON.
The Present Status of the Radical Operation for Em-

pyema of the Sphenoid Sinus,

By Ross Hall Skillern. Alveolitis, or Some Pathological Conditions Arising from Inefficient Care of the Mouth, By M. H. FLETCHER.

Circulatory Distrubances in Diphtheria, By JOHN HOWLAND.

Studies in Infantile Digestion,

ATTRED FRIEDLANDER. Physiological Assay of Nitroglycerin Tablets, Digitalin Tablets, and Fluidextract of Ergot,

By CHARLES WALLIS EDMUNDS and GEORGE B. ROTH.

Osteopathic versus Drug Treatment,

Osteopathic versus Drug Treatment,

By M. CLAYTON THRUSH.

Medical versus Surgical Treatment of Amoebic Dysentery,

By JOHN MILTON HOLT.

The Prevalence of Hydrophobia in the Philippine
Islands,

By F. W. DUDLEY.

A Comparison of Alcoholic and Watery Extracts in

the Serum Diagnosis of Syphillis,

By John W. Marchildon,

the Quarantine of Smallpox,

By H. M. Bracken.

12. The Quarantine of Smallpox,

3. Sphenoid Operation.—Skillern describes the method of operation which he has found acceptable to all cases: The lateral wall of the nose, including the sæptum, is thoroughly cocainized with a 20 per cent. solution, a few drops of adrenalin chloride having been added. After anæsthesia has reached the point beyond tactile sensibility the posterior half of the middle turbinate is removed by means of the scissors and cold snare. After bleeding is controlled by lightly wiping with gauze soaked in adrenalin chloride the superior nasal passage with the superior turbinate is exposed to view. Hajek's ethmoid hook is now employed after the method of the author, and with two or three strong pulls the posterior ethmoid cells are broken through, the débris being removed with a Grünwald-Hartmann conchotome or a similar instrument. The sphenoidal sinus is now either exposed to view or opened completely up, depending on the anatomical construction of the part. Should there be present a sphenoethmoidal recess, the ethmoidal portion of the sphenoid wall will remain intact; if, on the other hand, the superior turbinate forms most of the anterior sphenoidal wall, breaking it down will naturally expose the sinus. We will suppose, however, that, after removing the

posterior ethmoidal cells, the anterior wall of the sphenoid has not been injured and we are able to see the ostium with pus oozing out. It is now an easy matter to introduce the evulsor, and with a few well directed pulls to open the ostium 8 to 10 mm. in diameter. The ostium is really never so small as it appears, because the mucous membrane, not only from the nasal side but from the interior of the sinus, joins to make more or less of a diaphragm. The bone at this point is paper thin, gradually becoming thicker toward the base and basilar process. The bent forceps of Hajek are now used and as much of the bone removed as is necessary to insure a permanent opening which should reach as deep as the floor of the sinus.

5. Circulatory Disturbances in Diphtheria.-Howland remarks that as far as treatment is concerned there can be no doubt that rest and general management accomplish much more than drugs. All are agreed as to this. On the subject of the value of the different circulatory stimulants there is far less unanimity of opinion. The number of drugs that have been advised in this condition is proof of their inefficiency, especially when practically all observers agree that digitalis, the most certain of all cardiac stimulants, fails in its effect. This at once raises the interesting question whether, if the cardiac muscle is so extensively diseased as to fail to meet the demands made on it by its normal regulatory apparatus it is capable of being advantageously stimulated by drugs. Clinical experience seems to indicate that it is not, and if occasionally a clinician speaks favorably of one drug it has always been found ineffective in the hands of others. Krehl frankly states that drugs are unsatisfactory. We can expect very little permanent effect from their use and permanency of effect is what is required, for the myocardial lesions require days and weeks and not hours for their cure.

10. Hydrophobia. — Dudley gives a concise résumé of the local treatment of hydrophobia. A tourniquet should be applied if the bite is on an extremity. The limb should be thoroughly scrubbed about the wound with green soap or other soap. The wounded part should be excised as in tetanus, if it can be done without injuring important structures or causing great mutilation. If the wound cannot be excised-only anatomical reasons, and not fears of scars, etc., should deter us from this measure-and is a punctured wound, it should be converted into an open wound by free incision. The wound should be scrubbed again with green soap or other soap and then with bichloride of mercury, I to 1,000. Pure carbolic acid and then fuming nitric acid should be applied. If these remedies are not at hand, other strong acid, and the actual cautery may be used, but nitric acid is preferable to the actual cautery. The wound should be left open and packed lightly with gauze moistened in bichloride of mercury I to 1,000 and wet dressing of bichloride of mercury I to 1,000 applied for twelve hours, and then dry aseptic dressing, which usually does not require to be molested until the wound is healed, unless the nature of the wound has required extensive excision, when it must require time to heal, by granulation, and may require several dressings. Cocaine may be used hypodermically, if necessary, for excision or incision of the wound, and may be applied to the wound surface before cauterization. The bite should never be sucked for fear that the one who sucks it may absorb the poison through an abrasion, and then, too, we must remember that the virus can be absorbed through the healthy mucous membranes. If Bier's cups are at hand, suction may be thus artificially applied before and after the wound is incised or excised. If the bite is on an extremity, the Bier hyperæmic treatment with the elastic bandage might also be tried. The preventive inoculation treatment of Pasteur should be administered as soon as possible. Since the commencement of the Pasteur preventive treatment about 55,000 persons have been inoculated. with an average mortality of 0.77 per cent. (Ravenel). In the New York Pasteur Institute, under the directorship of Paul Gibier, of 1,367 cases treated during the decade ending January 1, 1900, nineteen patients died, a mortality of 0.66 per cent. The patients should be sent to the Pasteur Institute at once, since delay tends to diminish the protective power of the treatment. It is, of course, useless after the malady is well developed.

11. A Comparison of Alcoholic and Watery Extracts in the Serum Diagnosis of Syphilis.— Marchildon observes that alcoholic extracts may be safely used in the reaction for the serum diognosis of syphillis, because they in no way differ from watery extracts. There are some nonsyphilitic blood sera which give a positive Wassermann reaction. These sera, however, are so rarely met, and then only in such extensive pathological processes, that they do not vitiate the clinical value of the reaction.

MEDICAL RECORD

- The Prognosis and Treatment of the Deep Lesions of the Eye, Associated with Gout, with Special Reference to Secondary Acute Glaucoma,
- Local Anæsthesia in Major Surgery, with Special Reference to Abdominal Work,

 By Winfield Scott Schley.
 - Tuberculosis in Hospitals for the Insane,
- By RICHARD H. HUTCHINGS. Ætiological Indications in the Treatment of Pneumonia, By H. B. KNAPP. 4.
- Diagnostic Points in the Recognition of Perforated Gastric and Duodenal Ulcers,

 By Benjamin T. Tilton.

 Notes on the Hospitals, Taken during a Visit to Scandinavia,

 By J. B. BOUCHER. The Lymph Propulsion and Exchange.
- By George N. Jack. A New Method for Administering Ether as an Anæs thetic, By A. L. Sorest.
- The Prognosis and Treatment of the Deep Lesions of the Eye, Associated with Gout.-Ball remarks that the great danger in these cases of retinitis or chorioretinitis is the development of an acute glaucoma. The high blood pressure with its increased vascular tension tends at once to increase the intraocular tension beyond the normal limits and well within the danger zone. If this occurs in a hypermetropic or very astigmatic eye, with its shallow interior chamber, the almost inevitable result is a more or less complete obstruction of the

with its severe pain, paralysis of the sphincter iridis, engorgement of the deep episcleral vessels, cloudy cornea, and loss of vision. It should be fully recognized that an iridectomy should never be done in acute glaucoma, which has been preceded or accompanied by retinal or vitreous hemorrhages, and where the extensive cardiovascular disease makes general anæsthesia dangerous to the life of the patient. We have other means at our disposal for allaying the pain, reducing the tension, and arresting the inflammatory process, even if the eye remains permanently blind. The treatment and management of these cases must vary with the age and general condition of the patient, the nature of the lesion, and the severity of the type. The habits of life must be regulated, of course modified in strictness by the patient's condition and environment. It must be largely dietetic, based on accurate knowledge of the patient's digestive capabilities. The administration of drugs, except to combat certain symptoms as they arise, is of secondary importance. To reduce the high blood pressure, sodium nitrite as a vasodilator, may be used, but always combined with some reliable heart tonic. The local treatment of these deep seated ocular lesions is of great importance. An exudative retinitis or chorioretinitis, with or without hæmorrhages, occurring in patients of forty years of age or over, has a tendency to increase the intraocular tension, aside from the increased intravascular tension. As a result the subjective symptoms are impaired central vision, a sense of tension at times amounting to dull pain, and more or less intolerance of light. It is not safe to use atropine for the purpose of putting the accommodation at rest because of its tendency to increase the intraocular tension and aid in the development of glaucoma. Pilocarpine in a half per cent. or one per cent, solution should be used, as it contracts the pupil, draws the iris away from the angle of the anterior chamber, and lowers the intraocular tension. The light should be modified by wearing smoked glasses, but not darker than tint No. 3. In the uncomplicated acute glaucoma, unaccompanied by retinitis, chorioditis, or intraocular hæmorrhages, the classical operation of iridectomy should be done at once. This relieves the pain, lowers the intraocular tension, and in the great majority of cases ends the attack at once.

6. Notes on the Hospitals, Taken during a Visit to Scandinavia.—Boucher traveled through the three Scandinavian kingdoms, and describes his visit to the leading hospitals. Thus, he inspected the hospitals of the capitals, Christiania, Stockholm, and Copenhagen. He says that in all his travels abroad, he has never had the same amount of courtesy and attention shown him. They inquire about our American methods, and while they are not prompt in accepting all our newer ideas, they have a great deal of respect for American surgery and American surgeons. Dr. Behm, in charge of the Finsen Hospital, informed him that they had practically given up the use of x ray treatment in cancer, excepting a few superficial epitheliomata of the face, but in cancer of the lip, breast, and deep cancer, they advise immediate surgical operation, and then follow with the x ray treatment after the growth and glands

have been removed. He assured our author that not only in their work there, but from what he had seen in his travels in England, Germany, and France, he felt the x ray must be considered a failure in the treatment of cancer.

The Lymph Propulsion and Exchange.-Tack says that in studying the lymph propulsion it must be borne in mind that the lymph, unlike the blood, does not go rapidly coursing through the body through fixed and unobstructed channels with a high reserve pressure back of it. It, therefore, is more appropriate to use the word propulsion rather than circulation in studying or speaking of the forces that propel, and of the movements of the lymph. The lymph then, unlike the blood, goes slowly through the tissues of the body, on its mission of nutrition and body waste absorption, slowly finding its way, or being slowly propelled, from lymph space to lymph space, between tissue cells, or by chemotaxis, exosmosis, capillarity, diffusion, or dialysis, through thin animal membranes or connective tissue, as its chemical composition changes, as a result of stagnation or partial absorption to favor one or all of the laws of transudation, until finally it finds its way, through a slow but physiological propulsion, to the great lymph and blood centre of the body, or the lung tissue and lymphatics of the thoracic cavity. Just as sap works its way from the root of a tree to its leaves for oxygenation and vice versa, so does lymph work its way from the uttermost extremities of the body to the The forces that tend to keep up this normally procrastinating, sluggish, chemical change awaiting, lymph propulsion, are: 1, Absorption. 2. The muscular contraction or activities of the body and the pumplike action of moving articulations on the synovial cavity fluids. 3, The lymph aspirating action of the thoracic cavity upon the thoracic and other lymphatic ducts and vessels. 4, Last, but, although never before mentioned, not the least of the physical, chemical, and mechanical forces at work to perfect the propulsion of the lymph, is the anatomical and physiological fact that during respiration some lymph is aspirated into the mediastinum through the peritracheal, pericesophageal, and perivascular lymph spaces of the trachea, œsophagus, and the veins that enter the mediastinum, the chief of which are the inferior vena cava and the right and left innominate veins. The lymph thus conveyed to and aspirated into the mediastinum and other midpleural lymph spaces, also that reaching the same region through the lymphatics of the diaphragm, is absorbed by the pulmonary parenchyma or glandular lung tissue, through the open stoma or lymph mouths of the visceral pleura. Some of the lymph is aspirated into the lung tissue from the peritracheal lymph spaces along the peribronchial lymph spaces. The rest of the lymph reaches the lung tissue directly through the blood as that conveyed by the thoracic duct. In the lung the lymph is mixed with the blood and soon again through the glandular action of the lung tissue is separated or classified; some remaining in the blood, to be taken on by the blood current; some being absorbed by the lung lymphatics and conveyed to the mediastinal and bronchiotracheal glands; and finally some finding its way along the perivascular spaces of the pulmonary arteries, reaches or is aspirated into the pericardium, from which it is forced, together with the

lymph that reaches the pericardial space by absorption through the pericardium, with each heart beat along the perivascular lymph space of the aorta and its arterial branches, to feed or nourish the tissues of the body.

BRITISH MEDICAL JOURNAL

November 21, 1908

Induced Hyperæmia as a Means of Treatment, with Special Reference to Tuberculous Joint Disease and Stiffened Joints, By Sir W. Bennett. Stiffened Joints,

The Early Diagnosis of Organic Disease of the Nervous System,

By T. R. Bradshaw.

Recent Theories and Experiments on Heredity and

Inheritance,

By H. Drinkwater.

Heredity in Diseases of the Nervous System,

By Sir W. Gowers.

Two Cases of Uterine Fibroids Showing Peritheliomatous Changes; Long Immunity from Recurrence after Operation, By A. H. G. DORAN and C. LOCKYEAR.

Solid Fibroid of Ovary Obstructing Delivery,

A Note on Abdominal Hysterectomy for Cancer of the Cervix, and its Immediate Mortality; with an Analysis of Seventeen Cases, By T. B. HENDERSON.

Account of an Epidemic of Enteritis Caused by the "Liverpool Virus" Rat Poison,
By L. Handson, H. Williams, and E. Klein.

9. A Specific Skin Eruption in Pneumonia.

By F. M. POPE. 2. Early Diagnosis of Organic Nervous Disease.—Bradshaw gives his ideas as to the value of the principal signs on which we have to rely in making the diagnosis of organic disease of the nervous system in its early stages. Knee Jerk.-Entire absence of the knee jerk is always indicative of organic disease. It never happens in hysteria. In a patient who is able to walk about it generally means tabes dorsalis or neuritis. If the latter, it is most likely diabetic in origin. The real problem is to make sure of the absence of the knee jerk, not in the interpretation of it. Mere feebleness of response which is equal and constant is not pathological. Ankle Clonus and Exaggerated Knee Jerk .- Briskness of the knee jerks is apt to be looked on as an indication of organic disease, but as an isolated phenomenon it is rarely of serious moment. clonus, if sustained, always means organic disease, and may be the only positive indication of it. Absent Knee Jerk .- Absence of the knee jerk being never due to hysteria or other functional disease, must always be looked on with grave suspicion. Its importance as a sign of locomotor ataxia can hardly be overestimated. In the infrequent instances in which the brunt of the disease falls on the cervical cord, and the incoordination and other symptoms are chiefly in the upper extremities, the knee jerks may for a long time persist. But in cases where the complaint is of pains and other symptoms referred to the legs and lower part of the body, if the knee jerks can be obtained we can assure the patient that he has not locomotor ataxia. Ocular Signs.-Examination of the eyes may yield valuable indications of commencing organic disease, but it may also lead us into serious error. The presence of optic neuritis, apart from kidney disease, is strong evidence of a coarse intracranial lesion. But as a rule optic neuritis is more often falsely thought to exist than it is overlooked. To affirm its existence we must see distinct swelling of the disc, exudation, or hæmorrhage. Mere redness of the disc or tortuosity of the vessels must not be accepted as evidence of neuritis. Inequality of the pupils is apt

to give rise to a suspicion of general paralysis; but it may be normal to the individual; it occurs in neurasthenia and, rarely, in intrathoracic pressure. It may occur in uræmia. Diplopia, transitory or permanent, is suggestive of organic disease. A history of transitory diplopia is common in locomotor ataxia, and may confirm the diagnosis. But so called rheumatic neuritis of the sixth nerve may cause diplopia. Nystagmus, in the absence of ocular causes, is strongly suggestive of organic disease and may serve to indicate the existence of disseminated sclerosis when the other symptoms would seem to point to mere hysteria. Slight oscillations of the globe, especially on extreme voluntary deviation, may be merely due to fatigue or may be part of a general muscular tremor. The Argyll Robertson pupil is so common in locomotor ataxia and in general paralysis that it is seldom safe to make a diagnosis of either of these conditions, especially the former, in its absence, unless the other signs and symptoms are well marked. But undue weight must not be attached to its presence, even when accompanied by mental symptoms. Thoracic, Abdominal, and Pelvic Symptoms.—Bladder troubles are so common in the subjects of nervous disease that their occurrence ought hardly to give rise to errors of diagnosis. It is, however, possible to mistake for stricture or enlarged prostate, retention of urine due to loss of the vesical reflex. Unconscious nocturnal micturition may be the only indication of nocturnal epilepsy. Retention of urine is often due to hysteria; involuntary micturition never. symptom frequently met with in locomotor ataxia, both in the early and late stages, is persistent frequency of the pulse. The so called visceral crises of locomotor ataxia, of which the gastric crisis is the best known, may give rise to great difficulty and serious error in diagnosis. The characteristic of these gastric attacks is their sudden onset, their intense severity while they last, and the fact that the patient is usually quite free from gastric symptoms for longer or shorter periods between the attacks. The cases most likely to simulate them are those in which, owing to some adhesion or other mechanical abnormality, the pyloric end of the stomach, though perfectly patent as a rule, is liable to get twisted or kinked at times, so as to cause complete obstruction, followed by symptoms of acute dilatation of the stomach. Persistently recurring visceral disturbances, arising in a middle aged man without obvious cause, ought to give rise to a suspicion of locomotor ataxia, but unless some of the characteristic strict-Iv nervous signs are discovered on further examination, one is not justified in making a positive diag-

8. Enteritis Due to a Bacterial Rat Poison .-Handson, Williams, and Klein report an epidemic of enteritis, confined to twelve persons, all of whom took their meals in a room where the "Liverpool virus" was placed for the purpose of killing the rats with which the building was infested. The disease was of short duration, all the patients being convalescent in ten days. Vertigo was the initial symptom in all cases, followed by abdominal cramps, diarrhœa, and vomiting. Bacteriological investigation showed the microbe causing the disease to be identical with that of "Liverpool virus."

November 28, 1908.

- By B. G. A. MOYNIHAN. Inaugural Symptoms, Remarks on the Rheumatic Origin of Certain Serous Inflammations, By E. SMITH.
- Abdominal Auscultation as an Aid in Diagnosis, By A. F. Hertz.
- Case of Bismuth Poisoning, By A. Don. Observations with Lactic Acid Bacteria,
- By R. W. ALLEN
- Remarks on a Case of Tuberculous Peritonitis, By O. ELGOOD.
- A Case of Abdominal, Felvic, and Labial Tumor,
 By J. A. C. MACEWEN,
 Three Cases of Trophic Lesions Occurring Symmetrically on the Extremities,
 By W. S. SHEPPARD.
- hree Cases of Troping Leading By W. S. Sheppard, rically on the Extremities, By W. S. Sheppard, Note on the Ætiology of Beriberi and the Presence By C. V. Saldanha.

1. Inaugural Symptoms.—Moynihan draws attention to the urgent need which exists for a study of the very early symptoms of all diseases, but more especially of those affecting many of the abdominal organs. The surgeon about to operate has the opportunity to observe not only the parts he is immediately concerned with, but also all other viscera which can be laid bare through the same incision. If a morbid process in its earliest stage be then discovered, perhaps in parts other than those primarily concerned in the operation, the patient's story of his symptoms may be retold as soon as recovery is complete. It therefore rests with the surgeon to elicit the inaugural symptoms associated with the pathological changes which he finds within the abdomen, and by making sure of their significance and of the due order of their appearance, to furnish the knowledge that will ensure clinical recognition of visceral diseases in their early stages, in the stages when they are surely amenable to curative treatment. There are few catastrophes occurring within the abdomen that are veritably "acute." When we speak of such things we refer, as a rule, to the abrupt incursion of acute symptoms into the even and placid course of a disorder whose quieter manifestations have been present for months or years. In perforation of an ulcer, for example, the inaugural symptoms to be looked for are the sudden onset of an acute, intolerable pain that does not abate, rigidity of all the abdominal muscles, light and shallow breathing, with an inspiratory phase that usually ends abruptly in a "catch," together with the intensely anxious facial expression. These are ample warrant for a diagnosis of perforation. Rapid pulse rate, vomiting, and abdominal distension are late events, not inaugural symptoms, proving that time has already been wasted. In duodenal ulcer, again, hæmorrhage is a late event, yet it is often waited for before the diagnosis is made. Close attention to the inaugural symptoms of gallstones will repay us sevenfold. These inaugural symptoms are referred by the patients to the stomach, not to the liver or gallbladder. Complaint is made of epigastric distension and oppression, coming on soon after meals, relieved by belching, dismissed almost instantly by vomiting, elicited with remarkable constancy by certain articles of diet, and dependent rather upon the quality than on the quantity of the food. There is a sensation of great tightness, which if unrelieved may become acute pain, and which is relieved by bending the body forward, etc. There may be a feeling of faintness and nausea, and rarely there is vomiting. A frequent and very characterpicion.

istic early symptom of cholelithiasis is the occurrence during an attack of indigestion of a slight sensation of chilliness, especially in the evenings, after a meal. With the rarest exceptions stones do not develop in the gallbladder and do not remain there after their formation without exciting symp-These symptoms have not been adequately studied so far. Among the earliest evidences of the invasion of the colon by carcinoma are the following: First, the insidious onset of intestinal irregularity; now slight constipation, now slight diarrhœa. A second very significant early symptom is the occurrence of a spasm, slight and transient, in a part of the large intestine. The patient has a feeling of "gripping" and always in the same spot. This is clearly to be explained by the existence of a slight hypertrophy of the intestinal muscle as a result of the increased effort necessary to pass the contents of the gut through a segment in which stenosis is always beginning to appear. The occurence of mucus or of occult blood in the stools is probably to be expected in the comparatively early stages also. In appendicular inflammation, pain is in all instances the inaugural symptom; if other symptoms appear

first the diagnosis must be looked upon with sus-

5. Lactic Acid Baceria.—Allen tells us that in preparing curdled milk with any of the various lactic acid bacillary cultures, care should be taken that the milk is not previously contaminated bacteriologically. Should this be the case, the needful six to twelve hours incubation will enormously increase the contamination, thus rendering the milk very dangerous. To avoid this, the milk should be first sterilized by maintaining its temperature at boiling point for almost an hour, after which the lactic acid bacteria can be added. The writer cites two cases, illustrating the power of the lactic acid bacteria todrive out other organisms. One was a case of posttyphoid intestinal indigestion with numerous bacteria in the stools; here the lactic acid bacilli were given in the form of curdled milk. The other case was one of chronic gleet of years' standing, which had been treated with gonococcal vaccine. gonococci had disappeared but numerous other organisms persisted and kept up the discharge. Living cultures of lactic acid bacteria in milk were instilled into the urethra, with the result that the discharge ceased, and cultures showed nothing but the lactic acid bacteria.

9. Beriberi.—Saldanha states that beriberi is due to a substance he calls "arsin," which is the product of a fungoid disease of uncured rice. This substance is mostly contained in the rice dust. The poorer classes consume not only the rice, but the water in which it is cooked. In some cases the arsin causes diarrhœa and is eliminated; tolerance is soon established, and beriberi results. Beriberi is neither contagious not infectious any more than is arsenical or alcoholic paralysis. The neuritis in beriberi is quite secondary. The constant factor in the disease is vasomotor paralysis of terminal branches with tendency to chronic congestions of organs in which they ramify. Tea and stimulants seem to mask the effects of arsin, and when systematically withheld from a staple diet of uncured rice, an epidemic of beriberi is the usual result.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 8, 1908.

The President, Dr. Albert M. Eaton, in the Chair. LIFE INSURANCE AND MEDICAL PRACTITIONERS

The Various Forms of Life Insurance and their Comparative Value to the Physician.-Dr. CHARLES M. STELZER read a paper thus entitled. He said that in taking insurance one paid for what he got. No matter what representation was made as to the terms of the various forms of policy, the financial basis was fundamentally the same. Apart from the convenience offered, the value of all the various policies was the same. If the holder did not get at the maturity of his policy what he thought he would get, it was chiefly because he did not study the policy carefully at the time he took it out. Some years ago the policy usually was of the participating variety, that is, the insured shared in the profit and loss of the business, and as a result often did not get so much as was predicted by the agent. Lately, according to the law in some States, the companies had been obliged to give a guaranteed policy; they must give facts as to what a policy would be worth at the end of a term of years. This particularly applied to New York State.

The purposes for which insurance was taken out were protection of one's family and to meet business ventures, mortgages, etc. It was a moral obligation of the physician's to carry insurance, so that his family might be provided for in case of his death. It was also often the means of saving a personal estate by furnishing cash to pay immediate demands.

As to the form of insurance for the physician, for a man under forty-five years of age, the limited payment life policy, the payments, for example, to extend over twenty years, was the most desirable; above forty-five, unless one had large means and wished to pay for only ten or fifteen years, the best form was the ordinary life policy. The endowment policy cost more, but gave no more protection; it might, however, be regarded as a form of investment. It must be borne in mind that the old tontine, or deferred dividend, policies were very disappointing at maturity, because the predictions made at the time of their issue were based on the high rates of interest then prevailing as compared with more recent years. In New York such policies were now prohibited by law.

Two other forms of policy were, first, one which provided for the payment to the beneficiary of a certain sum annually after the death of the insured, and, second, one which paid to the insured a certain sum

annually during his lifetime.

"Substandard" insurance provided that one who was below par in health might take out a policy for a certain sum and pay a premium on that sum, but in case of death he was paid only a certain percentage of the face of the policy, this percentage increasing each year that the insured lived after taking out the policy, until, if he lived over thirteen years, there was received at death the face of the policy. In New York, since the recent legislation, this plan was no longer followed, but an extra premium was charged on these substandard risks.

Another important feature of recent insurance was the more liberal disability clause. This provided that during a period of total disability no premiums need be paid by the insured, but the policy still remained in force and lost none of its value.

The Bearing of the Recently Enacted New York Law on the Fee for Medical Examination of Insurance Applicants.-Mr. J. BURNETT GIBB, of the American Society of Actuaries, by invitation, read a paper thus entitled. He said that the New York law was the only one which affected the medical fee. The law provided that no company should expend in that State for commissions on first year's premiums, for other agency expenses, including advances to agents, and for medical examinations, an amount exceeding in the aggregate the total loadings upon the first year's premiums and the present values of the estimated mortality gains for the first five years of the insurance, as ascertained by the select and ultimate method. The cost of the medical fee cut deepest in the small policy and in the lower premium forms. For instance, on a ten year term policy issued at the age of twenty-one, for \$1,000, the annual premium was \$10.22, and, if a medical fee of \$5 was paid with an inspection fee of \$1, it would leave only \$4.22 to pay for carrying the risk one year, as well as the agent's commission and other expenses. This would be doing business at a

In considering what a proper fee was, the medical examiner should remember that the companies always met their obligations, so there were no bad debts in connection with these examinations. The protection of life insurance was not needed by any one more than by the man of small means, so the medical profession, by uniting in favor of a higher scale of compensation, must shoulder the responsibility of depriving the companies of the opportunity of extending the benefits of insurance to the class to whom it did the most good.

The Five Dollar Minimum Fee for Medical Examination of a Life Insurance Applicant.—Dr. I. NORMAN HENRY read this paper. He said the justification of the five dollar fee for medical examination seemed almost like a work of supererogation. There were two general classes of insurance, the industrial and the ordinary. The examination of applicants for the former was not nearly so exacting as for the latter, and the fee varied from twenty-five cents to three dollars. The larger companies issuing ordinary insurance usually had two classes of medical examiners, one spending regular hours at the office of the company and paid a salary, and the other composed of physicians in active practise who were paid so much for each examination. Gradually the companies had found that, in order to have good examiners, they must pay a reasonable fee; hence, many had fixed a minimum fee of five dollars. In several instances county medical societies had adopted resolutions demanding a fee of five dollars. This fee might have been obtained by less drastic action, smacking less of the methods of the labor union. The fee for professional work was purely arbitrary, and, as five dollars in the country was relatively larger than the same sum in the city, if this plan was followed the city physicians might feel justified in uniting on a seven or ten dollar fee. A fee of five dollars, no matter what the amount of the policy, would be most satisfactory to the physician, and in one instance at least it had proved so to the company. The examiner should not be influenced in any way by the size of the policy. Medical examination of an applicant required much skill and work and should be well paid for. The work of examining was best done by physicians in active practice, as they were best qualified to judge of the severity and consequence of abnormities encountered.

Honor Roll of Life Insurance Companies Paying the Five Dollar Minimum Fee for Medical Examinations.—Dr. ERNEST W. KELSEY read a list of companies that paid this minimum fee.

Dr. J. Allison Scott said he wished his remarks to be taken as from one in the general practice of medicine and not connected with any insurance He had, however, formerly been connected with an insurance company, and therefore had some knowledge of the business side of insurance which those working outside of the home office could not have. Often the medical director of a company might wish to do one thing, but the business officers desired to do the opposite, and often the latter prevailed. It was very common for an undesirable risk to be refused by the medical department and accepted by the president and vice-president. The reverse was also true. This might be due to some outside information which the business officers had received about the habits or history or occupation of the applicant. He doubted very much if the medical officers wished to keep the examiners' fee down, but believed they were overruled by the business officers. It would be very indiscreet to try to establish fees by legislation, for the physician could not undertake to fix by law his fees for practice. There were always men who would work for small fees, but as a rule the companies did not desire such men. The important factor in life insurance for the medical man was that by carrying a policy on his life he was compelled to save money. The speaker believed that the insurance companies would in the next ten years take cognizance of the fact that doctors were not good insurance risks. The mode of life of the physician rendered him an easy mark for various forms of disease, so that it was likely that insurance companies would put doctors in a special category. As to substandard risks, it was true that there were men now going about in perfect health who ten or fifteen years ago were rejected in compliance with the cast iron rules in reference to health, because they had a mitral murmur or a trace of albumin. There were also pulmonary subjects which were rejected. All these cases could be accepted with restrictions.

Dr. WILLIAM HOWARD KING said that he had been dealing with substandard risks for ten or twelve years. Selection began with the agent, who had the applicant make out a trial application which brought out the chief points. When this was received by the medical director, he investigated the doubtful points and, if possible, made the applicant a tentative offer through the agent. If this was satisfactory, the applicant submitted to a medical examination. The examiner was informed in reference to the ques-

tionable points and made special investigation in regard to them. There were various forms of insurance issued to the substandard risks. If the applicant was very little below the standard, the extra hazard might be compensated for by limiting him to an endowment policy or a limited payment, because at the end of the premium paying period the liability of the company ceased. Another method was to advance the age of the insured. For example, the man who was forty might be required to pay the premium of the age of fifty. In investigating the matter of substandard risks it was found, for instance, that those with an intermittent pulse attained to an average survival very much greater than normal. Experience with mitral murmur cases for the past twelve years had been distinctly good. All heart cases were eliminated, if possible.

Dr. T. Hewson Bradford thought there was a wide field for substandard insurance. In his experience a large number of applicants who had been declined because of disability had lived for years in apparent good health. He had recently seen a man of eighty who had been rejected twenty years before because he was under weight and drank a good deal of whiskey. The man informed him that he was still under weight and still drank a good deal of whiskey. If, in a case of mitral murmur, there was good compensation, the speaker saw no reason why an applicant should not be accepted. The rating of the substandards should be done in the actuarial denartment

Mr. FRANK, actuary of the Fidelity Mutual Life Insurance Company, said he thought it well for the insurance officers to hear these discussions, because it informed them as to the point of view of the physi-The only difference that existed seemed to be due to lack of conference and discussion. If there was more discussion between the two parties concerned, there would probably be full agreement. The insurance companies appreciated the value of the medical examiners. The only point of difference seemed to be in reference to the fee. The spirit of this medical society in inviting the insurance representatives to discuss the matter was one of fairness and showed a desire to meet the subject in the proper If this matter could be considered by a joint commission of doctors and insurance officers, the differences could doubtless be adjusted.

Dr. Seltzer said that the importance of substandard risks could be seen when one considered that it was very hard to find a person over forty-five who is flawless. Many of these conditions were transitory and should be dealt with cautiously. It had become a question whether it was really necessary to have a medical examination for policies of \$1,000 or under. The fact that a certain fee was relatively greater in the country than in the city was pointed to as a justification for a sliding scale of fees for the examiner. The average policy in the country was smaller than in the city, ranging from \$1,000 to occasionally \$5,000, while in the city the average policy ranged from \$6,000 upward. Therefore, according to the sliding scale, the city examiner would get more than the country examiner, which was an equitable condition.

Meeting of April 22, 1908.

The President, Dr. ALBERT M. EATON, in the Chair,

A Demonstration of the Method of Taking the Opsonic Index .- Dr. HARRY A. DUNCAN said that the theory of immunity as advocated by Wright put most of the emphasis on the blood serum as the active protective substance of the body, especially that element of the blood which prepared the bacteria so that the leucocytes might ingest and destroy them. To measure the degree of resistance or susceptibility possessed by some patient to any disease caused by germs, all that was necessary was to compare the action of the patient's blood serum upon the bacteria in question with the action of the blood serum of some healthy individual. The influence of the serum upon the germ was noted by observing the number of the germs which the polymorphonuclear leucocytes found suitable for ingestion. To take the opsonic index of a patient, there were needed for the test blood serum from the patient, blood serum from a healthy individual with which to compare it, an emulsion of the bacteria in question, and leucocytes washed free of all adhering serum. The blood sera were secured by centrifuging a few drops of blood which had been collected in a small pipette known as Wright's pipette. The bacterial emulsion was obtained by rubbing up in salt solution a culture of the germ in question grown on an agar slant. The corpuscles were cleaned of all their own serum by washing them repeatedly in salt solution and a five per cent. sodium citrate solution, which prevented clotting, and the centrifuge separated the corpuscles from the washing fluids. Equal quantities of the patient's serum, washed corpuscles, and bacterial emulsion were drawn up into an opsonizing pipette, mixed, and incubated for fifteen minutes at blood heat to give the serum an opportunity to act upon the bacteria and the corpuscles a chance to ingest them. Equal quantities of the healthy serum, washed corpuscles, and bacterial emulsion were treated in the same way in another opsonizing pipette. At the end of the fifteen minutes the contents of these pipettes were expelled on to clean glass slides, smeared, and stained. The number of bacteria ingested by fifty corpuscles acted on by the patient's serum was counted and compared with the number ingested by fifty corpuscles influenced by the healthy serum.

Dr. NATHANIEL BOWDITCH POTTER, of New York, cited some figures illustrating the difficulty in relying upon the opsonic index. In opposition to this, however, he admitted that it had some value. He believed the bacterial inoculations were useful in many instances.

Dr. NATHANIEL GILDERSLEEVE regarded the opsonic index as of very moderate value for diagnostic purposes, but of more value in determining the size of the dose of material to be inoculated and in interspacing the doses.

Dr. G. Morton Illman's experience with taking the opsonic index led him to feel that it was fairly consistent. The greatest success clinically was observed in cases of tuberculosis and in staphylococcic and streptococcic conditions.

The Microscopical Diagnosis of Diseases by Blood Smears.—Dr. L. NAPOLEON BOSTON OUTlined the clinical evidences of unquestionable value obtained by a microscopical study of the blood after it had been smeared upon cover glasses or slides. Given a blood smear, without any further knowledge of the patient from whom it had been obtained, it was possible to make a diagnosis in but a small number of diseases, such as malarial disease, filariasis, chronic plumbism, trypanosomiasis, leuchæmia, chlorotic anæmia, etc. The diseases in which such blood examination might support the further clinical study of the case in question were given as anæmia, with reference to the particular type, pneumonia, sepsis, trichiniasis, infection with intestinal parasites, and all diseases where leucocytosis was present. It was further of service in connection with acute mania, melancholia, poisoning from both mineral and gaseous substances, and conditions resulting from malnutrition, such as syphilis, glandular tuberculosis, etc. A full consideration was given to those diseases where living animal parasites were to be found in the circulating blood, with an outline of the laboratory study.

A Demonstration of the Method of Using the Sphygmograph.—Dr. George W. Norris demonstrated the instrument known as the Jacquet cardiosphygmograph, which was an elaboration of the old clinical sphygmograph, capable of attachment to the wrist in the usual manner. There were, however, in addition to the level which recorded the pulsations of the radial artery, two other levels which could be made to record simultaneously any other two pulsations which it might be desired to take. For example, it was possible to take simultaneous tracings of any two of the following pulsations in addition to that of the radial artery: The jugular pulse, the respiration, the apex beat, a pulsating hydrothorax, an aneurysm, occasionally the right ventricle as well as the left, a pulsating liver, etc. The impulses were transmitted pneumatically from the pulsation to be traced to the recording level. The instrument was also fitted with a time marker which recorded fifths of a second, so that it was possible with the use of calipers to determine the exact duration of any wave. The whole apparatus was small and compact and might readily be carried to the bedside in a small hand bag. This method of studying cardiac disease, it was said, had come prominently forward of late since the great amount of recent physiological and experimental investigation had thrown an entirely new light on many phases of heart disease, especially arrhythmia. By taking a simultaneous tracing of the radial artery, the jugular vein, and the apex beat it was possible to obtain graphic records of the functional performance of each separate chamber of the heart. The cost of the instrument from the manufacturer was \$90 but, thanks to the beneficent high tariff, the American physician had to pay \$130 for it.

Dr. WILLIAM PEPPER pointed out by means of diagrams how the various parts of a tracing taken from the neck could be identified and the causes for the production of these so called A, B, and C waves. Attention was then called as to the way in which, from these various pulsations, information could be obtained of the state of the heart which could be got

in no other way. Chief among the facts so learned might be mentioned the recognition at times of tricuspid lesions, either stenotic or regurgitant, and most important of all, knowledge concerning the contractility and excitability of the heart. Diagrams were exhibited illustrating the different varieties of extra systoles and how they could be classified by studies of the venous pulse into those arising from the ventricle or auricle and those from other points.

Book Aotices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Manual of Bacteriology, Clinical and Applied. By R. TANNER HEWLETT, M. D., F. R. C. P., D. P. H. (Lond.), Professor of General Pathology and Bacteriology, King's College, London, etc. Third Edition. London: J. & A. Churchill; 'Philadelphia: P. Blakiston's Son & Co., 1908. Pp. xii-638. (Price, \$4.20.)

This book has many excellent features to commend it, chief among which is the clearness with which all the subjects are discussed and with which the information is arranged. As in most bacteriologies of the present day, a considerable part of the book is devoted to protozoa, and in this part the author gives an excellent account of the various protozoa of medical interest. While it is manifestly impossible in a book of this size to discuss fully any single bacterium, the author has understood how to present the salient points of each organism and their relation to the disease in question. The chapters on the examination of water and the interpretation of the results is especially good, and the same is true of the discussion of disinfection. The book is well printed, and the illustrations are exceptionally fine. The bibliography affords opportunity for further reading to those desiring to do so.

La cura della tisi polmonare mediante il pneumotorace artificiale. Dott. Antonio Pisani. Milan: Società Editrice Libraria, 1908.

In June, 1907, Professor Forlanini announced before the Milan Sanitary Association that he had successfully treated tuberculosis with cavity formation by means of artificial pneumothorax. The treatment consisted in producing and maintaining indefinitely a pneumothorax on the affected side. The opposite lung must, of course, be healthy. The apparatus used consists of a receptacle with nitrogen (the gas injected), a hypodermic needle seven centimetres in length, and a connecting device of rubber, with a double pressure bulb. From 50 to 400 c.c. of gas are injected into the pleura. The gas is filtered through cotton in a glass tube before injection.

In the present pamphlet Dr. Pisani reports ten cases which he has treated with this method. All of these were in the third stage, with pulmonary cavities; six showed pleural adhesions; two, tuberculous laryngitis; and two, tuberculous enteritis. One patient was (clinically) cured; three were greatly improved; and six showed transient improvement. Three patients showed themselves "inclerant to the treatment." The author recommends much larger quantities of nitrogen in this form of

treatment (400 to 500 c.c.), and thinks that better results can be obtained thus than with small and frequent doses. The treatment with artificial pneumothorax, Pisani concludes, is worth trying in the advanced cases of tuberculosis, which have been hitherto abandoned as hopeless. This method, it will be observed, is apparently identical with that proposed several years ago by Dr. John B. Murphy, of Chicago.

Di aleune modificazioni citologiche nel sangue dei frat-turati. Dott. Giuseppe Bernardi. Pisa: F. Mariotti, turati. Dott. 1907. Pp. 105.

The fact that certain changes go on in the blood in cases of fracture has been known for some time, but many points as to the exact characteristics of the leucocytosis of fractures have hitherto remained somewhat obscure. In the present monograph are given the results of researches carried on since 1906 by Bernardi, who examined the blood of animals after producing comminuted fractures (in pigeons, rabbits, and guinea pigs), and also studied the blood of patients with fractures. He found that the leucocytosis accompanying fractures varied according to the age of the animal, the importance of the bone affected, and the severity of the fracture. The leucocytosis reached its maximum in about ten or fifteen days after the accident, and ended with the consolidation of the bony fragments. A few myelocytes are found in all cases of fracture, but their number is not proportionate to the seriousness of the fracture or the age of the patient. A multinuclear leucocytosis is always present, while the lymphocytes are reduced in number. The eosinophiles diminish in number at first, but later increase decidedly, unless complications occur. The scarcity or the disappearance of eosinophiles after the first few days should be regarded as a bad prognostic sign in fractures.

The results obtained by Bernardi are certainly most interesting, and the point just mentioned as to the eosinophilia may, if confirmed by further investigations, come to have an important prognostic bearing in cases of badly healing fractures.

BOOKS, PAMPHLETS, ETC., RECEIVED

A Synopsis of Surgery. By Ernest W. Hey Groves. M. S., M. D., B. Sc. (Lond.), F. R. C. S. (Eng.), Assistant Surgeon to the Bristol General Hospital. New York: William Wood & Co., 1908. Pp. viii-486.

Pathologie und Therapie der Perityphlitis (Appendicitis). Bearbeitet von Dr. Eduard Sonnenburg, Geheimer Medicinalrat, ordentlicher Honorar-Professor an der Universität, Director der chirurgischen Abteilung des städtschen Krankenhauses Moabit in Berlin. Sechste umgearbeitete Auflage. Mit 38 Abbildungen und farbigen Kurven. Leipzig: F. C. W. Vogel, 1908. Pp. 1x-282.

Die Wurmfortsatzentzündung. Eine pathologisch-histologische und pathogenetische Studie. Von L. Aschoff, Professor der allgemeinen Pathologie und pathologischen Anatomie, Freiburg i. B. Mit 18 lithogr. Tafeln und 22 Abbildungen im Text. Jena: Gustav Fischer, 1908. Pp. 114.

Untersuchungen über das Atrioventrikularbündel im menschlichen Herzen Von Privatdozent Dr. J. G. Mönckemenschlichen Herzen Von Privatdozent Dr. J. G. Moncke-berg, I. Assistent am patholog.-anatom. Institut der Uni-versität Giessen. Mit 10 Tafeln und 4 Abbildungen im Text. Jena: Gustav Fischer, 1908. Pp. vi-329. Ueber abdominale Schmerzanfälle. Von Prof. Dr. L. Kuttner in Berlin, dirig. Arzt an der inneren Abteilung des Rudolf Virchowkrankenhauses. Halle a. S.: Carl Marhold,

Das Koma diabeticum und seine Behandlung. Von Dr. A. Magnus-Levy, Berlin. Halle a. S.: Carl Marhold, 1909.

Das Indikationsgebiet des Alkohols bei der Behandlung innerer Krankheiten. Von Professor Dr. Georg Rosenfeld, Breslau. Halle a. S.: Carl Marhold, 1908. Pp. 48. Indikationen und Teehnik der Entfettungskuren. Von Professor Dr. Paul Friedrich Richter in Berlin. Halle a. S.: Carl Marhold, 1908. Pp. 38. Klinik der Bronchoskopie. Von Hermann von Schrötter, Dr. phil, et med, in Wien. Mit 4 Tafeln und 72 Abbildungen im Texte. Jena: Gustav Fischer, 1906. Pp. x-688. Transactions of the Sixth International Dermatological Congress, held at the New York Academy of Medicine, September 9 to 14, 1907. Edited by John A. Fordyce, M. D., Secretary General. In 2 volumes. New York: The Knickerbocker Press, 1908. Pp. 944.

Official Mews.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending December 18, 1908:

| Smallter-United States. | |
|--|------------|
| Places. Cas | es. Deaths |
| California-San FranciscoNov. 22 29 | 3 |
| Illinois-Danville Nov. 30-Dec. 6 | |
| Indiana—La Fayette | 1 |
| Kansas-Kansas City Nov. 28-Dec. 5 | |
| Kansas—TopekaNov. 28-Dec. 5 | 5 |
| Louisiana-New Orleans Nov. 28-Dec. 5 | Import d |
| Michigan - Grand Rapids Nov. 14-21 | |
| Minnesota-StillwaterNov. 1-30 | |
| Montana—Butte | |
| Ohio-Cincinnati Nov. 27-Dec. 11 | |
| Tennessee—Knoxville Nov. 28-Dec. 5 | |
| Wisconsin—La Crosse Nov. 28-Dec. 5 | |
| | |
| Smally ix-Foreign. | |
| China-Amoy (Kulangsu)Oct. 10-Nov. 8 | 2 |
| France—Toulon Oct. 1-31 | |
| Italy—General | |
| Italy—Naples | |
| Yellow Feren -Foreign. | |
| Mexico-Mexicanu Nov. 21-28 | |
| Mexico-Merida Nov. 21-28 | |
| Mexico-Vera CruzNov. 21-28 | |
| Cholera Foreign, | |
| Russia—General To Nov. 1427,16 | 12.8 2 |
| Plague Foreign. | |
| | |
| Azores—Terceira Oct. 1-31 5, India—General Oct. 17-31 4,186 | 5.811 |
| Peru—General | |
| Peru—Callao | |
| Peru—Lima. Nov. 14. | |
| Teru-tama | |

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commis sioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending December 9, 1908.

BECK, J. E., Pharmacist. Granted twenty-one days' leave of absence from January 7, 1909.

BILLINGS, W. C., Passed Assistant Surgeon. Bureau orders of November 28, 1908, amended, and directed to report to the Superintendent of the Revenue Cutter Service School of Instruction.

BLUE, RUPERT, Passed Assistant Surgeon. Granted four

BUUE, AUPERT, Fassed Assistant Surgeon. Granted four days' leave of absence from December 9, 1908.

BOWIE, ROBERT I., Sanitary Inspector. Granted six months' leave of absence from February 1, 1909, without pay.

BRANHAM, H. M., Acting Assistant Surgeon. Granted four days' leave of absence from November 10, 1908.

BROWN, F. L., Flarmacist. Granted twenty-five days' leave of absence from Parambers 1009.

Brown, F. L., Flarmacist. Granted twenty-five days' leave of absence from December 7, 1908.

Foster, S. B., Arting Assistant Surgeon. Granted twenty-three days' leave of absence from December 6, 1908.

GAHN, HENRY, Pharmacist. Granted fourteen days' leave of absence from December 14, 1908.

GIRSON, L. P., Arting Assistant Surgeon. Granted five days' leave of absence from December 2, 1908.

days leave of absence from December 2, 1908.

Granted one day's leave of absence, December 3, 1908, under paragraph 191. Service Regulations.

GODMAN, F. S., Pharmacist. Granted fourteen days' leave of absence from December 18, 1908.

HALLETT, E. B., Acting Assistant Surgeon. Granted two days' leave of absence from December 9, 1908.
HURLEY, J. R., Assistant Surgeon. Granted ten days' leave

of absence from December 6, 1908.

KASTLE, JOSEPH H., Chief Division of Chemistry, Hygienic Laboratory. Detailed to represent the Service at the annual meetings of the American Physiological Society and the American Society of Biological Chemists to be held at Baltimore, Md., December 28, 1908, to January

2, 1909.
 Light, S. D. W., Acting Assistant Surgeon. Leave of absence granted November 18, 1908, for twenty-two days from November 17, 1908, amended to read thirty days from November 18, 1908.
 NUTE, A. J., Acting Assistant Surgeon. Granted fourteen days' leave of absence from December 18, 1908.
 Ryder, L. W., Pharmacist. Granted ten days' leave of absence from December 18, 1908.

sence from December 1, 1908.

SWEET, E. A., Passed Assistant Surgeon. Granted one month's leave of absence from November 25, 1908, on account of sickness.

SWEET, E. A., Passed Assistant Surgeon. Relieved from further duty at San Diego, Cal., upon arrival of Surgeon Paul M. Carrington.

TAPPAN, J. W., Acting Assistant Surgeon. Granted ten days' leave of absence en route to station, December 5.

1908. WILSON, J. G., Acting Assistant Surgeon. Granted three days' leave of absence from December 6, 1908, under paragraph 210, Service Regulations.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital in Baltimore, Md., December 7, 1908, for the purpose of conducting a physical examination of a cadet of the U. S. Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon J. W. Schereschewsky, recorder.

Army Intelligence:

Official list of changes in the stations and duties of offi-cers serving in the Medical Corps of the United States Army for the week ending December 19, 1908;

CRAMPTON, L. W., Colonel, Medical Corps. Relieved from duty in charge of the medical supply depot, St. Louis, Mo., in time to sail March 5, 1909, from San Francisco, Cal., for duty in the Philippines Division.

Greenleaf, H. S., Captain, Medical Corps. Granted leave

of absence for thirty days.

Hoff, J. V. R., Colonel, Medical Corps. Granted leave of absence for two months, with permission to return to the United States via Europe.

Lewis, W. F., Major, Medical Corps. Granted leave of absence for lifteen days.

MAUS, L. M., Colonel, Medical Corps. Relieved from duty as chief surgeon, Department of Luzon, and ordered to report as chief surgeon, Philippines Division; relieved from duty in Philippines Division April 15, 1000, and

ordered to San Francisco, Cal., for orders.

Reed. H. A., Lieutenant, Medical Corps. Ordered to Fort
Bayard, N. M., for treatment at the Army General

Shepherd, J. M., First Lieutenant, Medical Reserve Corps. Died December 11, 1908, at Salt Lake City, Utah, of general peritonitis, complicated with appendicitis.

Torney, G. H., Colonel, Medical Corps. Granted leave of

absence for fifteen days.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 19, 1908:

ALDERMAN, C. G., Assistant Surgeon. Granted sick leave ALDERMAN, C. G., Assistant Surgeon. Granted sick leave for three months, when discharged from treatment at the naval hospital. Las Animas, Colo.

ALEXANDER, C. E., Pharmacist. Detached from the Relief and ordered home via the Concord and Supply.

BALCH, A. W., Passed Assistant Surgeon. Detached from the naval hospital, Cavite, P. I., and ordered home via the Concord and Supply.

Broom F. H., A. Land Songeon. Detached from the concord and supply.

naval recruiting station, Cleveland, Ohio, and ordered to the Franklin.

Brown, E. W., Assistant Surgeon. Unexpired portion of sick leave revoked; ordered to course of instruction at the Naval Medical School, Washington, D. C.
Butts, H., Assistant Surgeon. Detached from the naval

hospital, Canacao, P. I., and ordered to the naval sta-

tion, Cavite, P. I.

DOWNEY, J. O., Assistant Surgeon. Detached from the Charleston and ordered to duty at the naval hospital, Canacao, P. I.

Higgins, H. E., Assistant Surgeon. Detached from the naval hospital, Canacao, P. I., and ordered to the

Charleston.

LEE, A. E., Assistant Surgeon. Detached from the Concord

and ordered to the Rainbow.

RANDALL, J. A., Passed Assistant Surgeon. Detached from the Rainbow and ordered to duty at the naval hospital, Canacao, P. I.

Riggs, R. E., Passed Assistant Surgeon. Granted leave under exceptional circumstances, with permission to visit the United States, to take effect about December 19. 1908, and to terminate upon departure from Newport News, Va., of the transport to sail for Havana, Cuba, about December 31, 1908.

ROBNETT, A. H., Assistant Surgeon. Camp Columbia, Cuba, will proceed to Santo Domingo, Province of Santa Clara, Cuba, and report on December 17th for temporary duty during the absence on leave of Passed As-

Sistant Surgeon R. E. Riggs.
ROTHGANGER, G., Surgeon. Transferred to the retired list from December 10, 1908, in accordance with the provision of section 1453 of the Revised Statutes.

THOMAS, G. E., Acting Assistant Surgeon. Ordered to the naval hospital, navy yard, Boston, Mass., for duty. Thompson, F. W., Acting Assistant Surgeon. Appointed

acting assistant surgeon from December 12, 1908

Births, Marriages, and Deaths.

Married

BAILEY—SHEDWICK.—In Canton, China, on Wednesday, December 2d, Mr. Lewis Penn Bailey and Dr. Mary F. Shedwick.

RUGER—Arbuckle.—In Philadelphia, on Wednesday, De-cember 16th, Dr. Charles Z. W. Ruger and Miss Ella May

Arbuckle.

STONE-PAGE.-In Brookline, Massachusetts, on Monday

STONE—FAGE—In Brooking, Massachusetts, off Monday, December 14th, Dr. William Stephen Stone, of New York, and Miss Catherine Mary Page.

Wertz—Gaines.—In Hagerstown, Maryland, on Thurs day, December 10th, Dr. Irvin M. Wertz and Miss Jane Price Gaines

Died.

Cory.—In New Providence, New Jersey, on Wednesday. December 16th, Dr. Abraham Morrell Cory, aged eightyone years.

DAVIS.-In Pottstown, Pennsylvania, on Friday, Decem-

DAVIS.—In Potstown, reinsylvania, on Prinay, December 11th, Dr. John Davis, aged seventy-six years.

DAVIS.—In Brooklyn, New York, on Monday, December 14th, Dr. Robert Henry Davis, aged eighty-one years.

FIFE.—In San Francisco, California, on Saturday, December 5th, Dr. George Storrs Fife, aged seventy-two

years.

ΗΕΛΟΥ.—In Milford, Connecticut, on Wednesday, December 16th, Dr. E. B. Heady, aged sixty-two years.

ΚΑΦΙΕΝ.—In New York, on Monday, December 14th, Dr.

Marcus A. Kadien, aged forty-nine years.

LE PLONGEON.—In Brooklyn, New York, on Sunday, December 13th, Dr. Augustus Le Plongeon, aged eighty-two

years,
Mackie.—In Milwaukee, Wisconsin, on Wednesday, December 9th, Dr. William Mackie, aged fifty-three years.
Rioux.—In Sherbrooke, Quebec, on Friday, December 18th, Dr. J. F. Rioux.
Roop.—In Harrisburg, Pennsylvania, on Tuesday, De-

Roop.—In Harrisburg, Fennsylvania, on Luesday, De-cember 8th, Dr. J. Warren Roop, aged sixty-five years. Tope.—In Albuquerque, New Mexico, on Friday, Decem-ber 11th, Dr. W. A. Tope, of Downer's Grove, Illinois, aged forty-nine years. Wiscore In Harrisburg, Pennsylvania, on Sunday, De

cember 6th, Dr. Henry Clay Winger.

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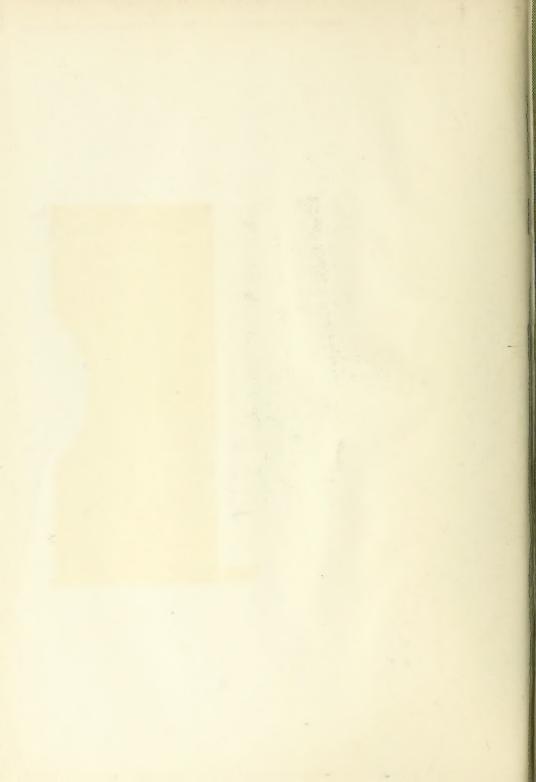
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